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1

Practice Set

1. Which of the following statements are true about republics in the sixth century BC?
- Every tribal oligarch claimed a share in revenues from peasants
 - Every tribal oligarch was free to maintain his own little army
 - Brahmans had a considerable influence in the republics
 - Republics functioned under the leadership of the oligarchic assemblies
- Choose the correct option from the codes given below:
- (a) 1, 2 and 3 (b) 1, 2 and 4
(c) 3 and 4 (d) 1, 2, 3 and 4
2. Consider the following statements :
- 6th century BC in India was an age of religious revolutions
 - Both Jainism and Buddhism were atheistic movements
 - These were reaction to the Brahman domination
 - Both of these rejected the existence of soul
- Which of the above statements are correct?
- (a) 1, 2 and 3 (b) 1, 2 and 4
(c) 3 and 4 (d) 1, 2, 3 and 4
3. Bhaga, Kara and Pranaya were the types of :
- Tributes paid by subjugated during Mauryan period
 - Tributes paid by subjugated during Gupta times
 - Taxes levied by Mauryans
 - Taxes levied by Guptas
4. Consider the following statements regarding linguistic development in India in 7th century AD?
- Development of Gujarati and Rajasthani started
 - Development of Telugu and Malayalam started
 - Growth of regional scripts
- Which of the above statement(s) is/are correct?
- (a) 1 and 2 (b) 2 and 3
(c) 1 and 3 (d) 1, 2 and 3
5. Which of the following statements are correct about temperate cyclones?
- They have a low pressure gradient than tropical cyclones.
 - They travel from east to west.
 - They are generally produced in summers.
- Choose the correct option from the codes given below:
- (a) 1 (b) 2
(c) 1 and 3 (d) 1, 2 and 3
6. Which of the following pair(s) is/are correct matched?
- | Lake | Location |
|---------------|------------|
| 1. Tanganyika | S. America |
2. Michigan USA
3. Winnipeg New Zealand
4. Great bear Canada
- Choose the correct option from the codes given below:
- (a) 1 and 2 (b) 2 and 3
(c) 1 and 3 (d) 2 and 4
7. Laterisation of soil is related to which type of vegetation?
- (a) Tropical evergreen (b) Tropical monsoon
(c) Temperate evergreen (d) Mediterranean forest
8. Consider the following statements:
- Water in fields for paddy cultivation should not be stagnant.
 - Soil aeration and nitrate formation are impeded in stagnant water and this decreases yield.
- Which of the following statements is/are correct?
- (a) 1 only (b) 2 only
(c) 1 and 2 both (d) None
9. Who among the following personalities has been appointed as the chairperson of the 20th Law Commission of India?
- (a) Justice P.K.Prasad (b) Justice A.P.Shah
(c) Justice Arifit Pasayat (d) Justice P.V. Reddy
10. The Rohingyas are living as a minority community in which of the following countries?
- (a) Vietnam (b) Bangladesh
(c) Thailand (d) Myanmar
11. Consider the following statements:
- “Hand in Hand 2013” was a joint military exercise between India and the US.
 - It was anti-terrorism drill.
- Which of the following statement(s) is/are correct?
- (a) 1 only (b) 2 only
(c) 1 and 2 both (d) None
12. “Equity Reference Framework” is related to :
- SEBI guidelines on stock market
 - UNO initiatives to bring in equity in society
 - New bank licensing policy of RBI
 - Initiatives against climate change
13. The Human Development Report focuses on :
- Sustaining development momentum
 - Peace and security
 - Confronting environmental pressure
 - Managing demographic change
- Choose the correct option from the codes given below:
- (a) 1, 2 and 3 (b) 1, 3 and 4
(c) 1 and 4 (d) 1, 2, 3 and 4
14. Which of the following pairs are incorrectly matched?
- Gobi: Asia 2. Mojave: Africa
 - Andes: Europe 4. Etna: N. America

- 30.** Which of the following statement(s) is/are correct?
- Aravalli ranges extend from north-east to south-west direction.
 - It is a block mountain.
 - It is water divide between Indus and Ganges river system.
 - The highest point is Gurushikhar.
- Choose the answer from the codes given below:
- 1, 2 and 3
 - 1, 2 and 4
 - 2, 3 and 4
 - 1, 3 and 4
- 31.** Which of the following statements are correct?
- Andaman and Nicobar islands are separated from each other by 10 degree channel.
 - These are fold mountains.
 - These are an extension of Arakan Yoma ranges of Myanmar.
 - Port Blair is the highest point of the islands.
- Choose the answer from the codes given below:
- 1, 2 and 3
 - 1, 2 and 4
 - 2, 3 and 4
 - 1, 2, 3 and 4
- 32.** Which of the following crops are grown in Rabi season?
- | | |
|-----------|------------|
| 1. Barley | 2. Potato |
| 3. Jowar | 4. Bajra |
| 5. Gram | 6. Mustard |
- Choose the answer from the codes given below:
- 1, 2, 3, 4 and 5
 - 1, 2, 3 and 6
 - 1, 2, 5 and 6
 - 1, 3, 5 and 6
- 33.** According to MSME Development Act, small manufacturing units are those which have investment limits (in ₹) of :
- 10 Lacs- 2 Crores
 - 10 Lacs- 5 Crores
 - 25 Lacs- 2 Crores
 - 25 Lacs – 5 crores
- 34.** The term budget deficit means :
- Borrowing from the market
 - Borrowing from RBI
 - Borrowing from international agencies
 - Total borrowings
- 35.** Which of the following taxes are regressive taxes?
- | | |
|----------------|------------------|
| 1. Income tax | 2. Corporate tax |
| 3. Excise duty | 4. Sales tax |
- Choose the answer from the codes given below:
- 1 and 2
 - 3 and 4
 - 2, 3 and 4
 - 1, 2, 3 and 4
- 36.** WTO divides supports given to agricultural sector into three groups. Which of the following pair(s) is not correctly matched?
- Public Distribution System: Green Box Subsidy
 - Production Limiting Subsidy: Amber Box Subsidy
 - Minimum Support Price: Blue Box Subsidy
- Choose the answer from the codes given below:
- 1 and 2
 - 2 and 3
 - 1 and 3
 - 3 only
- 37.** Which of the following statements regarding Laffer curve is/are correct?
- It shows the relationship between tax rate and tax payment behaviour of the people.
- 38.**
- If tax rate increase beyond a critical point, tax collection starts falling.
- Choose the answer from the codes given below:
- 1 only
 - 2 only
 - 1 and 2 both
 - None
- 39.** Nirbhæk is a :
- Short range surface to surface missile
 - Medium range surface to surface missile
 - Heavy weight gun to be used by artillery
 - Light weight revolver
- 40.** Alejandro Aravena is recently in news as he was awarded-
- Pulitzer Award
 - Pritzker Prize
 - Golden Globe Award
 - Man Booker Prize
- 41.** Which of the following are considered as the naturally occurring fundamental forces?
- Gravitation
 - Nuclear Forces
 - Electromagnetic Forces
- Choose the answer from the codes given below:
- 1 and 2
 - 2 and 3
 - 1 and 3
 - 1, 2, 3 and 4
- 42.** Which of the following statement(s) is/are correct?
- Natural uranium contains 2-2.5% of Uranium-235
 - Uranium used in research reactors and military applications contains 20% or more U-235.
- Choose the answer from the codes given below:
- 1 only
 - 2 only
 - 1 and 2 both
 - None
- 43.** Consider the following statements about recently test-fired Prithvi-II missile-
- Prithvi-II missile is the first missile to be developed by DRDO under India's prestigious IGMDP
 - it is surface-to-surface medium range ballistic missile.
 - Its Strike range is 350 km.
 - It is capable of carrying 2000 kg to 3000 kg warheads.
- Select the correct option.
- 1, 2, 3
 - 2, 3, 4
 - Only 2 & 3
 - All of the above
- 44.** The theme of World Radio Day 2016 is-
- Gender Equality & Women's Empowerment is Radio.
 - Youth & Radio
 - Communication for sustainable development.
 - Radio in Times of Emergency and Disaster.
- 45.** Which of the following statement(s) is/are correct?
- Our body functions normally between 7-7.8 pH value.
 - Normally, rain is slightly basic.
- Choose the answer from the codes given below:
- 1 only
 - 2 only
 - 1 and 2 both
 - None

45. Water in an earthen pot becomes cool after sometime. This is due to
- Decrease in average kinetic energy of water molecules
 - Increase in average potential energy of water molecules
 - Decrease in average potential energy of water molecules
 - Absorption of heat by the pot
46. Consider the following statements :
- Geosynchronous Transfer Orbit (GTO) is elliptical with perigee 240 km and apogee 36000 km.
 - Revolution period of satellite in GTO is synchronized with the revolution period of earth.
 - Satellite is first launched into GTO then transferred into geo-stationary orbit.
- Which of the statements are correct?
- 1 and 2
 - 2 and 3
 - 1 and 3
 - 1, 2 and 3
47. Consider the following statements :
- Total biomass and energy produced by plants in an ecosystem is called Net Primary Product.
 - Total biomass and energy produced by plants is greatest in equatorial rain forests.
- Which of the above statements are correct?
- 1 only
 - 2 only
 - 1 and 2 both
 - None
48. Which of the following are the wetlands of India on the network of Ramsar convention?
- Vembanad
 - Panchmarhi
 - Amarkantak
 - Kolleru
- Choose the answer from the codes given below:
- 1 and 2
 - 2 and 3
 - 1 and 4
 - 2, 3 and 4
49. Which of the following statements are correct?
- Core part of the biosphere reserve is a protected area and is called a National Park.
 - No human interference is allowed in core.
- Choose the answer from the codes given below:
- 1 only
 - 2 only
 - 1 and 2 both
 - None
50. Which of the following statement regarding Cartagena Protocol is correct?
- It deals with the safe handling, transport and use of living genetically modified organisms.
 - It deals with the international trade of hazardous chemicals, insecticides and pesticides.
 - It recognizes the sovereign right of a country over its bio-resources.
 - It deals with the mechanism to preserve ozone layer
51. Who among the following rulers of Delhi were Afghans?
- Tughlaqs
 - Khaljis
 - Suris
 - Lodhis
- Choose the answer from the codes given below:
- 1 and 2
 - 2 and 3
 - 3 and 4
 - None
52. Which of the following were the parts of the classic Islamic decorative motifs ?
- Geometrical patterns
 - Arabesque designs
 - The bell motif
 - Calligraphic forms
- Choose the answer from the codes given below:
- 1 and 2
 - 1, 2 and 3
 - 2, 3 and 4
 - 1, 2, 3 and 4
53. Which of the following was not built by Firoz Shah Tughlaq ?
- Palace Fort of Firozabad
 - Kotla Firoz Shah
 - City of Jahan Panah
 - Hauz Khas
54. Which of following was not part of the programme of social reform of Brahmo Samaj?
- Spread of modern education.
 - Opposition to idolatry.
 - Rejection of infallibility of the Vedas.
 - Emphasis on human dignity and opposition to caste system.
55. Behramji M. Malabari carried on a campaign against :
- Infant and child marriages
 - Communalism
 - Female infanticide
 - Polygamy
56. Which of following statements is not correct with regard to the preamble of the Constitution?
- It ensures unity and integrity of the nation.
 - It ensures federal and parliamentary form of government.
 - India is a sovereign, democratic, secular and socialist republic.
 - It ensures liberty, equality, fraternity and justice to the people.
57. Which of the following is not an official language of the UN?
- Spanish
 - Latin
 - Arabic
 - Chinese
58. Neap tides i.e. small tides are caused when :
- Sun and moon are at right angles
 - There is full moon
 - Sun, earth and moon are in one line
 - There is new moon
59. Prairie region have the characteristics of :
- Heavy rainfall and very hot climate
 - Scanty rainfall and temperate climate
 - Scanty rainfall and extremes of climate
 - Very hot summer and warm winters
60. Which of following statements is incorrect?
- Erosive action of the river is maximum in its upper course.
 - Beaches are formed by the deposition of material by waves along the shore.
 - Cliff is formed as a result of the wave erosions of the shores.
 - Process of deposition of material in the low lands is called gradation.

- 61.** Broad spectrum antibiotics are one which attack :
- Pathogens as well as host
 - A wide range of pathogens
 - Only pathogens
 - Only host
- 62.** Conditions necessary for seed germination are :
- Moisture, oxygen and temperature
 - Temperature, oxygen and light
 - Carbon dioxide, light and light
 - Soil, moisture and temperature.
- 63.** What is a basic characteristic of antigens?
- They are capable of simulating the formation of hemoglobin in the blood.
 - They destroy hemoglobin.
 - They are capable of defending themselves against attack of antibodies.
 - They are capable of simulating the formation of antibodies.
- 64.** Which of following statements concerning electrons are true?
- It is a particle.
 - It has wave property.
 - Its path is bent by a magnet.
 - It gives out energy while moving in orbital.
- Choose the answer from the codes given below:
- 1 and 2
 - 1, 2 and 3
 - 2, 3 and 4
 - 1, 2, 3 and 4
- 65.** Which of following statements are true about ozone?
- It is an allotrope of oxygen.
 - It is formed in atmospheric air by the action of UV rays on atmospheric oxygen.
 - It is lighter than oxygen.
 - It is very vital for life on earth.
- Choose the answer from the codes given below:
- 1 and 2
 - 1, 2 and 4
 - 2, 3 and 4
 - 1, 2, 3 and 4
- 66.** Which of following statements are properties of electrovalent compounds?
- They are solid and do not vaporize easily.
 - They usually do not dissolve in organic solvents.
- Choose the answer from the codes given below:
- 1 only
 - 2 only
 - 1 and 2 both
 - None
- 67.** What happens if a bar magnet is cut into two halves, transverse to its length?
- Both pieces will be without magnetism.
 - Each piece will have either two north poles or two south poles.
 - Each piece will be a magnet with either north or south poles at each end.
 - Only one end will show either north or south pole. The other end will not show any magnetism.
- 68.** While running on horizontal level road, the man holds the umbrella in the vertical direction. If he stops, then in order to protect himself from rain, he should hold it
- 69.** (a) Still vertically (b) Inclined to front (c) Inclined to back (d) At an angle of 45°
- 70.** When a person walking in bright sunlight enters a dark room, he is not able to see clearly for a little while because :
- The eye muscles cannot immediately change the focal length of eye lens.
 - The retina retains the bright images for some time and become momentarily insensitive.
 - The iris is unable to contract the pupil immediately.
 - The iris is unable to dilate the pupil immediately.
- 71.** The bhakti literature by the Nayanars and Alvars :
- Stressed the rigidities of traditional rituals.
 - Opposed the practices for image worship.
 - Preached personal devotion of God as means of salvation.
 - Advocated the austerities preached by the Buddhists and Jains.
- 72.** What is not true about Alauddin Khalji's market regulations?
- The prices of various commodities were fixed by the states.
 - He appointed Sahana-i-Mandi as the controller of markets.
 - There was provision for rationing of grains during droughts and other emergencies.
 - He met with firm resistance from the traders while enforcing these measures.
- 73.** Which of following is true about Muhammad bin Tughluq?
- He believed in the geo-political unity of India.
 - He opened up the administration to people of all organization.
 - He had discussion with Hindu and Jain saints.
 - His measures had the support of the Ulema.
- Choose the answer from the codes given below:
- 1 and 2
 - 1, 2 and 4
 - 1, 2 and 3
 - 1, 2, 3 and 4
- 74.** Which of the following statements are correct?
- Mandu architecture was massive in comparison to Gujarat architecture.
 - There is large scale use of colours and glazed tiles in Mandu architecture.
- Choose the answer from the codes given below:
- 1 only
 - 2 only
 - 1 and 2 both
 - None
- 75.** Which of following are landmarks of Dalhousie's administration?
- Indian railways
 - Public works department
 - English as medium of instruction
 - Telegraph
- Choose the answer from the codes given below:
- 1 and 2
 - 1, 2 and 4
 - 1, 2 and 3
 - 1, 2, 3 and 4

75. Which of following was a recommendation of Hunter's Commission?
- Gradual withdraws of state support from higher education.
 - Women's education.
 - New regulation for the organized senates system.
 - Introduction of civic education at college and university level.
76. Which of the following statement(s) is/are correct?
- Moplah uprising was an agrarian movement.
 - The Moplah peasants revolted against the Hindu landlords' oppressive policies.
 - The uprising was followed by communal clashes.
- Choose the answer from the codes given below:
- 1 and 2
 - 1 and 3
 - 2 and 3
 - 1, 2 and 3
77. Which of the following statement(s) regarding The Government of India Act, 1919 is/are correct?
- The Secretary of state to be paid by the British exchequer.
 - The term of Legislative Assembly was to be five years.
 - The distribution of seats among the different provinces was based on the population.
- Choose the answer from the codes given below:
- 1 and 2
 - 1 only
 - 2 only
 - 2 and 3
78. Jarpa II programme. It is :
- A scientific research on whales by Japan
 - Joint military exercise between the US and Japan
 - A UN initiative to save white elephants
 - To preserve polar ice in Arctic region
79. Heena Sidhu is associated with which game?
- Hockey
 - Shooting
 - Athletics
 - Golf
80. READ (Read-Engage-Achieve-Dream) is a programme jointly launched by :
- India and the US
 - India and Germany
 - India and France
 - Africa and the United Nations
81. Which state of India is the first one to e-auction limestone blocks?
- Uttarakhand
 - Odisha
 - Jharkhand
 - West Bengal
82. Shome Committee was created to look into the guideline of GAAR and to :
- correct anomalies in the tax laws
 - correct the procedural/technical defects that impairs a substantive law
- Choose the answer from the codes given below:
- 1 only
 - 2 only
 - 1 and 2 both
 - None
83. India is a regular member of which of the following organizations?
- BIMSTEC
 - Shanghai Cooperation Organization
 - ASEAN
 - G-20
- Choose the answer from the codes given below:
- 1 and 2 only
 - 2 and 3 only
 - 1 and 4 only
 - 1, 2, 3 and 4
84. Which of the following statement(s) is/are correct?
- National Green Tribunal is a special body established under an act in 2010.
 - It should dispose the cases within six months
 - The tribunal shall be bound by the procedure laid down under the Civil Procedure Code, 1908.
- Choose the answer from the codes given below:
- 1 and 2
 - 2 and 3
 - 1 and 3
 - 1, 2 and 3
85. Which of the following statement(s) regarding e-Biz is/are correct?
- It is one of the mission mode projects under the National e-Governance Programme.
 - It is to provide a single window mechanism for number of services to business users.
- Choose the answer from the codes given below:
- 1 only
 - 2 only
 - 1 and 2 both
 - None
86. A research reactor is being operated by Uranium-233 derived from Thorium indigenously. The name of the reactor is :
- BHAVINI
 - KAMINI
 - SADHANA
 - CORAL
87. A broad-based pyramid shaped age structure is the characteristic of a population that is
- Growing rapidly
 - Stable
 - Growing slowly
 - Declining
88. Keystone species are those species
- whose absence would cause major disruption in an ecosystem.
 - which has largest number individuals in an ecosystem.
 - which is at the top of the food chain of the ecosystem.
 - which has ability to provide food to all the other species
89. Which of the following factors may play a role in increased biodiversity?
- Complex population interaction
 - A higher degree of habitat heterogeneity
 - Introduced species
 - Narrower niches
- Choose the answer from the codes given below:
- 1, 2 and 3
 - 3 and 4
 - 1, 2 and 4
 - 1, 2, 3 and 4
90. Which of the following statements are correct?
- The headquarter of the World Intellectual Property Organization (WIPO) is at Rome.
 - The trade Related Aspects of Intellectual Property (TRIPS) are binding on all WTO members.

Hints and Explanations

1. (b) In 6th century BC republics, people elected their representatives from dominant families, but there was not great impact of Brahmins in politics of these republics.
2. (a) Buddhism rejected the existence of both God and soul. Jainism rejected the existence of God but argued that everything in the world contains soul.
3. (c) Bhaga, Kara, Pindakara, Hiranya and Pranaya were different agricultural taxes imposed on people.
4. (c) In 7th century AD, languages, such as Gujarati, Rajasthani, Bengali, Kannada, etc. started developing. Telugu and Malayalam developed later.
5. (a) Temperate cyclones are produced in winters and they travel from West to East.
6. (d) Tanganyika Lake is located in Africa and Winnipeg is located in Canada.
7. (a) Tropical evergreen forests are characterized by closely set trees forming a canopy. Here bacterial action reduces humus leading to laterisation.
8. (c) Stagnant water should not be allowed in paddy fields as it decreases yield.
9. (b) Justice Ajit Prakash Shah is the Chairman of the 20th Law Commission of India. He was the Chief Justice of Delhi High Court from May 2008 till his retirement in February 2010.
10. (d) The Rohingya people are an ethnic group who practice Islam and speak Rohingya, an Indo-European language.
11. (b) This is joint military exercise between India and China to counter terrorism.
12. (d) It is a concept according to which the burden to counter climate change should be distributed among all countries based on several parameters
13. (b) Peace and security is not a focus of Human Development Report as it mainly focuses on social development indicators.
14. (d) Andes mountain range is in S. America and Mt. Etna is an active volcano in Italy, Europe.
15. (a) Vocal music in Chhau hardly exists but is accompanied with instrumental music. These dances are performed as a part of Chaitra Parba.
16. (d) Earliest examples of temples in the Dravidian style belong to the Pallava period. Dravidian style has the tower usually in the shape of a rectangular truncated pyramid.
17. (b) Lok Sabha is subjected to dissolution while Rajya Sabha cannot be dissolved as its one-third members are replaced every three years.
18. (a) A person can be appointed as a minister even if he is not a member of parliament for maximum period of six months. The person should meet all other criteria, such as s/he should be an Indian citizen and should at least 25 years of age.
19. (c) The Chief Election Commissioner can be removed by a resolution passed by two-thirds majority in both the houses, either on the ground of proved misbehaviour or incapacity.
20. (a) A party to become national party needs to be recognized as a state party in four states.
21. (a) The Supreme Court held that the trade unions have no guaranteed right to strike or right to declare lock-out.
22. (a) The judges of a state high court are appointed by the President in consultation with the Chief Justice of India and the Governor of the state.
23. (d) During national emergency, the state governments are brought under the complete control of the centre, though they are not suspended. The President can modify the constitutional distribution of revenues between the centre and the state.
24. (b) Igneous rocks are without fossils as they are primary rocks.
25. (a) Strait of Hormuz connects Persian Gulf and Gulf of Oman and is important for trade of crude petroleum.
26. (b) Salinity is more in tropics as evaporation is rapid due to hot and dry conditions. Tropics are dominated with deserts, so rainfall and river discharge is low.
27. (d) There could be four solar and three lunar or five solar and two lunar eclipses in a year.
28. (c) The plants here shed their leaves at different times in the year. So, the cycle occurs throughout the year.
29. (c) Burzil connects Kashmir and POK, Shipkila connects Himachal Pradesh with Tibet, Jelepla connects Kalimpong with Lhasa and Bomdilla connects Arunachal Pradesh with Tibet.
30. (d) Aravalli mountains are the oldest fold mountain ranges of the world.
31. (a) Saddle Peak in Northern Andaman is the highest point.
32. (c) Jowar and Bajra are grown in Kharif season.
33. (d) The act provides for the investment limits according to the type of enterprise. Small units are those which have investment limits of 25 lacs-5 crore in manufacturing units or 10 lacs- 2 crore in service providing units.
34. (b) Total borrowing is called fiscal deficit and borrowing from RBI is called budget deficit.
35. (a) The burden of excise duty and sales tax is equal on everyone who consumed the good on which it is imposed, irrespective of variation in incomes. So, it doesn't help in reducing inequality.
36. (b) Production limiting subsidy comes under Blue Box Subsidy and is considered not directly distortionary, so permissible under WTO. MSP comes under Amber box subsidies and are considered distortionary, so are restricted by WTO to specific limits.
37. (c) At a very high tax rate, increase in tax rate reduces the incentive to invest. This also increases incentive to cheat.

38. (d) Nirbheek is a light weight revolver designed especially for women to defend themselves from assault.
39. (b) Alejandro Aravena (from Chile) is the recipient of the 2016 Pritzker Architecture prize.
40. (d) There are four naturally occurring fundamental forces—gravitation, weak and strong nuclear forces and electromagnetic forces.
41. (b) Natural Uranium carries 0.71% of Uranium- 235.
42. (a) It is capable of carrying 500 kg to 100 kg of warheads.
43. (d) World Radio Day is observed every year on February 13. This year's theme.
44. (a) Rain is slightly acidic. When the pH value of rain becomes less than 5.6, then we call it as Acid Rain.
45. (a) The kinetic energy of molecules increases with the temperature of the substance. The earthen pot cools due to evaporation. Due to decrease in temperature the kinetic energy of molecules decreases.
46. (c) Revolution period of satellite is synchronized with the rotation period of earth.
47. (b) Total biomass and energy produced by plants in an ecosystem is called Gross Primary Product.
48. (c) Panchmarhi and Amarkantak are biosphere reserves and not wetlands.
49. (c) Core is the internal most part of the biosphere reserve and any human activity in this area is restricted.
50. (a) Cartagena Protocol was enforced in 2003 to deal with the safe handling, transport and use of living GMOs. Rotterdam convention deals with the international trade of hazardous chemicals, insecticides and pesticides.
51. (c) Tughlaqs and Khaljis were Turkis, while Lodhis and Suris were Afghans.
52. (b) The bell motif was not a part of Islamic decorative motifs.
53. (c) City of Jahan Panah was founded by Mohd. Bin Tughlaq.
54. (c) Brahmo Samaj aimed at reforms in Hindu Society. It did not criticize the Vedas.
55. (a) The efforts of Behramji M. Malabari led to enactment of consent of marriage act.
56. (b) The concept of federalism and parliamentary is not mentioned in the preamble. It mentions that India is a republic.
57. (b) Latin is not an official language of the UN.
58. (a) High tides occur when sun, earth and moon are in one line. Neap tides occur when sun and moon are at right angles that is in first and third quarter of Lunar month.
59. (c) Prairie regions known for its temperate grasslands. The reason only grasses can grow in these places is due to scanty rainfall and extremes of climates.
60. (d) Deposition is a geological process by which sediments, soil and rocks are added to landform and land mass.
61. (b) The broad spectrum antibiotics refer to an antibiotic that acts against a wide range of disease causing bacteria.
62. (a) The right amounts of moisture, oxygen and temperature are necessary conditions for germination.
63. (d) Antigens are present in our bodies which stimulate the formation of antibodies to fight against various diseases.
64. (b) According to Bohr's Model, the electrons do not radiate energy while they move in orbits.
65. (b) Ozone is heavier than oxygen as it has three molecules of free oxygen (O).
66. (c) They have high melting and boiling points. They are composed of oppositely charged particles.
67. (c) When a magnet is cut into pieces, every piece behaves like a different magnet.
68. (c) While running, the man holds the umbrella in the vertical direction, that means, the direction of the rainfall is the same as the direction of the movement of the man. So, when he stops the umbrella should be inclined to back to save him from getting wet.
69. (d) The iris dilates the pupil to adjust change in light as a person come to a dark place from a brighter place.
70. (c) Nayanars and Alvars preached the path of personal devotion and self-sacrifice towards God to achieve salvation
71. (c) The prices of food grains were reduced drastically at the time of Alauddin Khalji, but there was no provision for rationing of grains during emergencies.
72. (c) Muhammad bin Tughluq took innovative initiatives and promoted meritocracy and religious tolerance which was not liked by religious leaders.
73. (c) Mandu architecture was massive and looked more massive with the use of lofty plinth for the buildings, such as the Hindola Mahal and Jahaz Mahal.
74. (b) Lord Dalhousie is regarded as the pioneer of Modernity in India through his modern approach towards administration and transport and communication.
75. (b) The Hunter Commission realized that there is little penetration of education among women. So, the commission recommended special attention to women education.
76. (d) The Moplah peasants revolted against the Hindu landlords' oppression who were loyal to British government. The uprising was followed by killing of people on both sides.
77. (b) The term of Legislative Assembly was to be three years. The distribution of seats among the different provinces was based on the relative importance of the provinces.
78. (a) Jarpa II programme is scientific research on whales by Japan. It has been banned as it International Court of Justice as it is alleged that the programme is used for commercial purpose.
79. (b) Heena Sidhu was recently in news due to her achievements in 10 m pistol shooting events.
80. (a) READ is a joint programme of India and the US to improve the reading skills of primary school students.
81. (c) Jharkhand became the first ever state to e-auction two limestone blocks after the passage of MMDR Act, 2015 by Parliament.
82. (c) Parthasarathi Shome committee was created by the Prime Minister to look into and give recommendations for a stable tax regime.

83. (c) India is a member of BIMSTEC which is regional Organization of countries which are near Bay of Bengal and G-20 which is an organization including all the major economies of the world.
84. (a) The tribunal shall be guided by the principles of natural justice.
85. (c) e-Biz would help in getting all the services to business users at one place covering the entire cycle on their operations.
86. (b) The research reactor, KAMINI is operating in Kalpakkam using Uranium-233 derived from Thorium. This fuel is bred, reprocessed and fabricated indigenously.
87. (a) A broad-based pyramid-shaped age structure shows that there are large number of children in the population which means a high population growth rate.
88. (a) Keystone species are those species which have an important place in an ecosystem and their absence may even lead to destruction of that ecosystem.
89. (c) Introduced species may lead to decrease in biodiversity because there may be no natural predators for new species.
90. (d) WIPO is a specialized agency of United Nations which is responsible to protect the intellectual property rights of the member countries.
91. (b) Interest payments and salaries of government employees comes under planned expenditure.
92. (d) CACP works to protect the interests of farmers as well as consumers. So, it recommends a reasonable price after analyzing the input cost.
93. (c) Joint sitting of the two houses cannot be held to resolve the deadlock on a money bill.
94. (d) It is mandatory for the state government of Manipur, Tripura and Meghalaya to appoint minister for tribal welfare.
95. (a) Many climatic factors are not that influential in seasonal changes in Southern hemisphere due to lesser landmasses. But still there are variations in climates due to various reasons such as distance from the sea, latitude, wind direction etc.
96. (c) The main reason for the rainfall in winters in northwest India is western disturbance due to Jet streams. The retreating monsoon receives moisture before hitting the Coromandel Coast in winters.
97. (a) Silver is a better conductor of electricity than Copper. Silver is very expensive so, cannot be used in metal wires.
98. (c) Earth is flat at poles due to centrifugal force. Earth axis of rotation is a tilted one.
99. (c) Akbar adopted the policy of equality to people of all religions.
100. (c) Disguised unemployment in agriculture is more due to lack of employment opportunities in other sectors.

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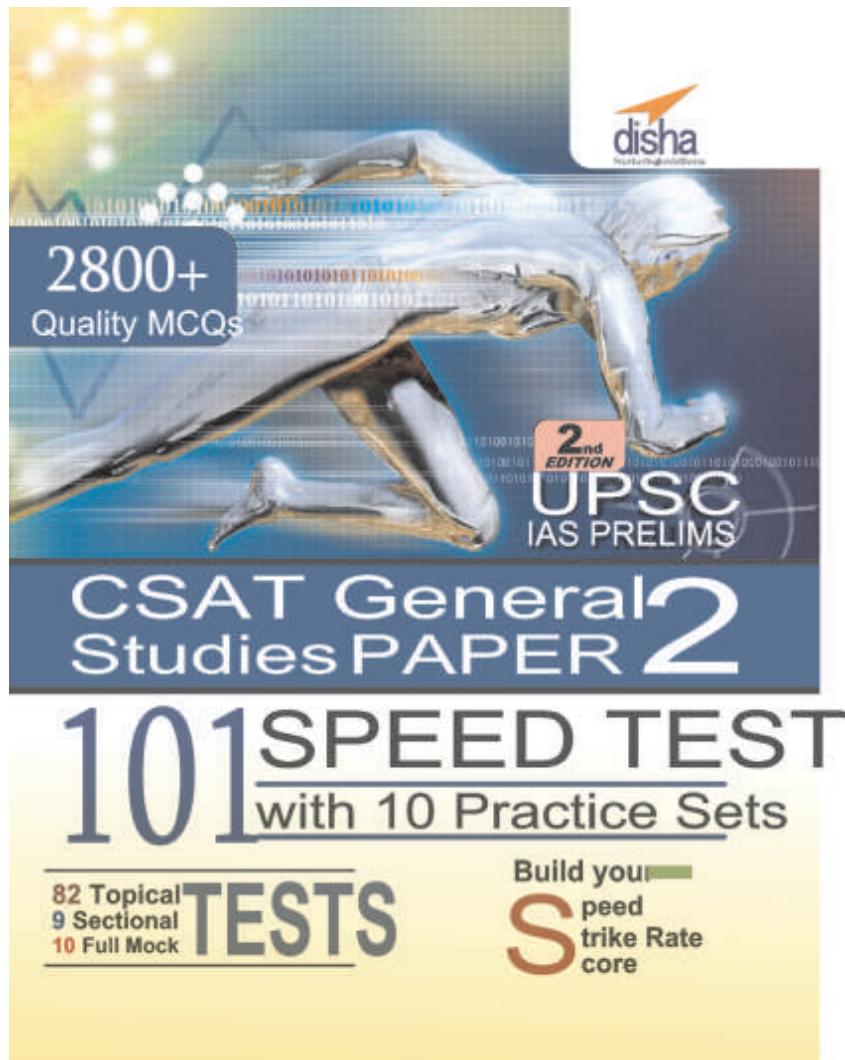
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ANALYTICAL ABILITY SECTION TEST WITH SOLUTIONS

This section test is taken from :



ISBN : 9789385846663

DIRECTIONS (Qs. 1-3) : In each of following questions, a statement is given followed by two assumptions numbered I and II. Consider the statement and the following assumptions and decide which of the assumptions is implicit. Give answer :

- (a) if only assumption I is implicit.
- (b) if only assumption II is implicit.
- (c) if either I or II is implicit.
- (d) if neither I nor II is implicit.

1. **Statement :** Nobody can predict as to how long our country would take to contain the unfortunate and disastrous terrorist activities.

Assumptions :

I It is impossible to put an end to terrorist activities.

II Efforts to control the terrorist activities are on.

2. **Statement :** If the city bus which runs between Cheka Naka and Vande Park is extended to Shramnagar, it will be convenient. — Appeal of residents of Cheka Naka to the city bus company.

Assumptions :

I The convenience of the city bus company is much more important than the needs of the consumers.

II The city bus company is indifferent to the aspirations of the residents of Shramnagar.

3. **Statement:** An advertisement of a Bank "Want to open a bank account! Just dial our 'room service' and we will come at your doorsteps."

Assumptions:

I There is a section of people who require such service at their home.

II Now-a-days banking has become very competitive.

4. **Statement :** In view of the recent spurt in sugar prices in the open market, the government has asked the dealers to release a vast quantity of imported sugar in the open market.

Assumptions :

I The dealers will follow the government directive.

II The sugar prices will come down.

III The price of indigenous sugar will remain unchanged.

(a) Only I and II are implicit.

(b) Only II and III are implicit.

(c) Only I and III are implicit.

(d) None is implicit.

5. **Statement :** "We have the distinction of being the only company in India as well as the second in the world to have won an ISO-9002 quality certification in our line of business" – Statement of company X's Chairman.

Assumptions :

I There were not many companies in the line of business of Company 'X'.

II Getting ISO-9002 in the line of business of Company 'X' is not easy.

III The company 'X' desires to expand its business.

(a) Only I is implicit.

(b) Only II is implicit.

(c) Only III is implicit.

(d) Only II and III are implicit.

DIRECTIONS (Qs. 6-10) : Each of the following questions consists of a statement followed by two arguments I and II. Give answer :

- (a) If only argument I is strong;
- (b) If only argument II is strong;
- (c) If neither I nor II is strong;
- (d) If both I and II are strong

6. **Statement :** Should Central Government open well-equipped hospitals for every subdivision of every district?

Arguments :

I Yes, Health and well-being of every citizen is the primary responsibility of the government.

II No, it is not possible, society must come forward to help the government.

7. **Statement :** Does India need so many plans for development.

Arguments :

I Yes, nothing can be achieved without proper planning.

II No, too much time, money and energy is wasted on planning.

8. **Statement :** Should cutting of trees be banned altogether.

Arguments :

I Yes, it is very much necessary to do so to restore the ecological balance.

II No, A total ban would harm the timber-based industries.

9. **Statement :** Should the prestigious people be met with special treatment by law if they have committed crime unknowingly?

Arguments :

I Yes. Because the prestigious people do not commit crime intentionally.

II No. It is our policy that everybody is equal before the law.

10. **Statement :** Should system of offering jobs only to wards of government employees be introduced in all government offices in India?

Arguments :

I No. It denies opportunity to many deserving individuals and government may stand to loose in the long run.

II No. It is against the principle of equality and does government not own responsibility to all its citizens?

11. Consider the following argument :

"In order to be a teacher one must graduate from college. All poets are poor. Some Mathematicians are poets. No college graduate is poor."

Which one of the following is not a valid conclusion regarding the above argument?

- (a) Some Mathematicians are not teachers.
- (b) Some teachers are not Mathematicians.
- (c) Teachers are not poor,
- (d) Poets are not teachers.

DIRECTIONS (Qs. 12 - 13) : In each of the following questions, a statement is given followed by two conclusions I and II. Give answer :

- (a) if only conclusion I follows;
- (b) if only conclusion II follows;
- (c) if either I or II follows;
- (d) if neither I nor II follows;

12. Statement :

Global ecological issues have eclipsed local environmental problems which are being faced by the poor societies.

Conclusions :

- I** Poor societies always have to suffer because of their poverty.
- II** Global ecological issues are not so important. Rich societies can bear with it.

- 13. Statements :** Just about everyone in Germany has been on a diet at one time or the other and millions of them have learned that the weight they lose is all too easily regained. Still' despite their frustration, few question the wisdom of dieting.

Conclusions :

- I** Germany should stop dieting.
- II** Germans do not learn from experience.

- 14. Examine the following statements:**

1. I watch TV only if I am bored.
 2. I am never bored when I have my brother's company.
 3. Whenever I go to the theatre I take my brother along.
- Which one of the following conclusions is valid in the context of the above statements?
- (a) If I am bored, I watch TV.
 - (b) If I am bored, I seek my brother's company.
 - (c) If I am not with my brother, then I watch TV.
 - (d) If I am not bored, I do not watch TV.

- 15. Examine the following statements:**

1. None but students are members of the club.
2. Some members of the club are married persons.
3. All married persons are invited for dance.

Which one of the following conclusions can be drawn from the above statements?

- (a) All students are invited for dance.
- (b) All married students of the club are invited for dance.
- (c) All members of the club are married persons.
- (d) None of the above conclusions can be drawn.

DIRECTIONS (Qs. 16-17) : Each of the following questions consists of two statements – one labelled as the Assertion (A) and other as Reason (R). You have to examine these two statements carefully and select the answer :

- (a) Both A and R are true and R is the correct explanation of A.
- (b) Both A and R are true but R is not the correct explanation of A.
- (c) A is true but R is false.
- (d) Both A and R are false.

- 16. Assertion (A) :** Forest cutting is undesirable from the point of view of soil erosion.
Reason (R) : Cutting of forests reduces the interception of rain water.

- 17. Assertion (A) :** Tides indicate the regular and periodic rise and fall in sea level.

- Reason (R) :** Tides are caused by the gravitational pull of the moon and the sun.

DIRECTIONS (Qs. 18-20) : Each of the following questions consists of two statements – one labelled as the Assertion (A) and other as Reason (R). You are to examine these two statements carefully and select the answer :

- (a) Both A and R are true and R is the correct explanation of A.
- (b) Both A and R are true but R is not the correct explanation of A.
- (c) A is true but R is false.
- (d) A is false but R is true.

- 18. Assertion (A) :** Alcohol rather than mercury is used in a thermometer to measure a temperature of 60°C.

- Reasons (R) :** Alcohol has a lower freezing point than mercury.

- 19. Assertion (A) :** Pluto is the coldest planet.

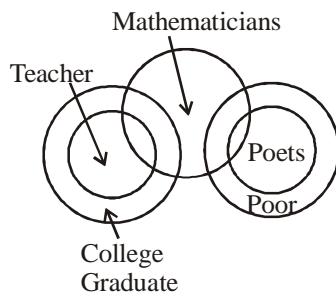
- Reasons (R) :** It receives slanting rays of the sun.

- 20. Assertion (A) :** Akbar found Din-e-Illahi

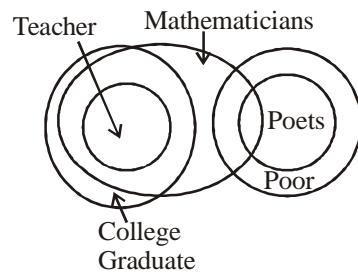
- Reasons (R) :** He was motivated by self glorification.

HINTS & EXPLANATIONS

1. (b) I is not implicit. In fact, the statement suggests it is possible to contain terrorist activities. What is disputed is "how long". But II is implicit. The action has begun, though its end is not in sight.
2. (d) We are in no position to pass any judgment at present. We may assume these only if the appeal is rejected. So, neither I nor II is implicit.
3. (a) Banks' willingness to go to customer's doorstep makes statement I implicit. There is no information regarding number of banks or business volume of the market, hence statement II is not implicit.
4. (a) The government's decision is clearly a measure to increase supply and control rates. So, both I and II are implicit, while III is not.
5. (d) Since it is hard to get ISO-9002 certification, he is trying to highlight company's achievement and by doing that expansion of his business is in his mind.
6. (a) Providing infrastructure for good health of the citizens is the primary responsibility of a modern state. Hence I is strong.
7. (a) In the light of the achievements of planned development in India, Argument I is strong.
8. (d) Both are strong arguments from the two opposite viewpoints.
9. (b) Argument I advocates that prestigious people do not commit crime intentionally. Is it true? Answer is 'No'. Hence, I is a weak argument. Argument II is a strong argument because it is constitutional right that every people is equal before law.
10. (d) It would be against of talented candidates. Opportunity should be given to all deserving individuals. Hence I is a strong argument. II is also strong argument because it advocates the human fundamental right.
11. (b) We can draw the following two diagrams from given arguments



Case I



Case II

- From case II, the option (b) is not a valid conclusion.
12. (d) The statement does not say why the poor societies suffer. Hence I does not follow. II also does not follow because the statement merely states a fact; it does not look into the merits of the fact.
13. (d) Nothing of the sort can be concluded as given in two conclusions on the basis of the statements.
14. (d)
15. (b)
16. (a) Cutting down trees causes increased run-off (water flowing over the surface of the earth). Rain water reaches rivers faster (due to reduction of interception). Soil particles are transported down-hill by water flow which leads to the degradation of soil.
17. (a) Clearly, both A and R true and R is the correct explanation of A.
18. (b) Both A and R are true but R is not correct explanation of A because alcohol is used for higher boiling point than Mercury.
19. (c) Pluto is the farthest planet from the sun, and hence is the coldest planet. However, Reason is false.
20. (c) Assertion is correct because Din-e-Illahi was founded by Akbar but the Reason is false.

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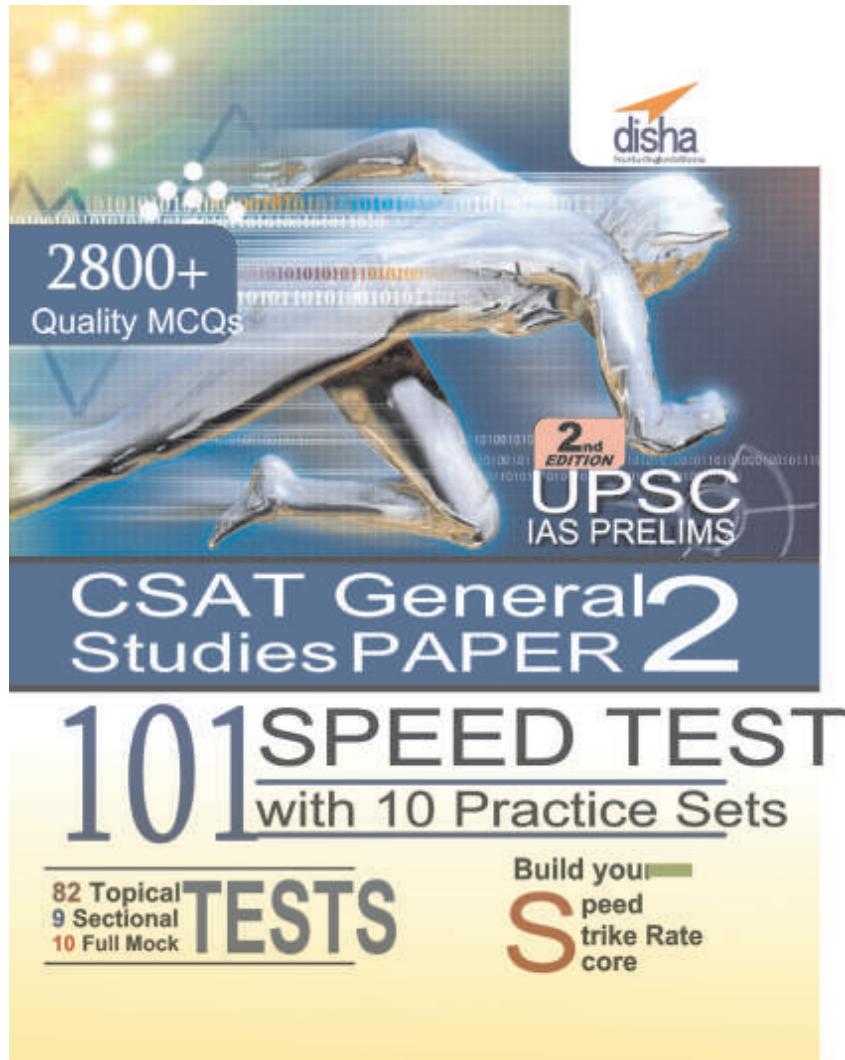
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BASIC NUMERACY SECTION TEST WITH SOLUTIONS

This section test is taken from :



ISBN : 9789385846663

Max Marks : 20

No. of Os : 20

Time · 20 min

Date : / /

HINTS & Solutions

1. (c) Let the original price be x .

$$\text{Increased price} = x \left(1 + \frac{25}{100}\right) = \frac{5x}{4}$$

Reduction in price to bring it back to its original value

$$= \frac{5x}{4} - x = \frac{x}{4}$$

$$\% \text{ Reduction} = \frac{(x/4)}{(5x/4)} \times 100 = 20\%$$

2. (a) Total income of the family per month

$$= 5 \times 1000 = ₹ 5000 \text{ per month}$$

$$\text{Increased amount} = \frac{12000}{12} = ₹ 1000 \text{ per month}$$

Now total amount of the family per month

$$= ₹ 6000$$

So the average income of the family per month

$$(\text{after increasing}) = \frac{6000}{5} = ₹ 1200$$

3. (d) Number of students who speak only English
 $= (\text{Number of students who speak English} - \text{Number of students who speak both Hindi and English})$
 $= 21 - 10 = 11$

Number of students who speak Hindi = (Total no of students – No. of students who speak only English)
 $= 50 - 11 = 39$

- ∴ Number of students who speak only Hindi = (Number of Hindi speaking students – no. of students who speak both languages) = $39 - 10 = 29$

4. (b) Let the cost price of clocks A and B be 'a' and (650-a) respectively.

Selling price for A=Selling price for B

$$a \left(1 + \frac{20}{100}\right) = (650 - a) \left(1 - \frac{25}{100}\right)$$

$$\left(\frac{120a}{100}\right) = (650 - a) \left(\frac{75}{100}\right)$$

$$a = 250$$

Cost price for B = $650 - 250 = 400$

5. (a) No. of pumps required to fill a tank in 7 days = 15

- ∴ No. of pumps required to fill a tank in 1 day
 $= 15 \times 7 = 105$ (i)

Let the extra pumps required be n.

Now, no. of pumps required to fill the tank in 1 day

$$= (n + 15) 5 \quad \dots\dots(ii)$$

From (i) and (ii),

$$(n + 15) 5 = 105$$

$$n + 15 = 21$$

$$n = 6$$

6. (d) Let the mother's age be y years.

∴ The age of father = $(y + 9)$ years

$$\text{The age of son} = \frac{y}{2} \text{ years}$$

$$\text{The age of daughter} = \left(\frac{y}{2} - 7\right) \text{ years}$$

Now according to the given condition,

$$(y + 9) = 3 \left(\frac{y}{2} - 7\right)$$

$$\Rightarrow y + 9 = \frac{3y - 42}{2}$$

$$\Rightarrow 2y + 18 = 3y - 42$$

$$\Rightarrow y = 60 \text{ years}$$

7. (d) Let weight of Akbar = x kg.

$$\text{then weight of Amar} = \frac{3x}{2} \text{ kg}$$

$$\text{and weight of Anthony} = \left(\frac{3x}{2} - \frac{3x}{4 \times 2}\right) = \frac{9x}{8} \text{ kg.}$$

$$\text{Hence weight of Farah} = \frac{1}{3} \left(x + \frac{3x}{2} + \frac{9x}{8}\right) = \frac{29x}{24} \text{ kg}$$

According to question

$$x + \frac{3x}{2} + \frac{9x}{8} + \frac{29x}{24} = 232$$

$$\Rightarrow \frac{29x}{8} + \frac{29x}{24} = 232$$

$$\Rightarrow 116x = 5568$$

$$\Rightarrow x = 48$$

$$\therefore \text{Amar's weight} = \frac{3}{2}(48) = 72 \text{ kg}$$

$$\text{Anthony's weight} = \frac{3}{2}(48) \left(1 - \frac{1}{4}\right) = 54 \text{ kg}$$

Akbar's weight = 48 kg

$$\text{and Farah's weight} = \frac{29}{24}(48) = 58 \text{ kg}$$

∴ Arrangement of persons in the ascending order :
Akbar, Anthony, Farah, Amar.

8. (c) No. of women = $\frac{1}{3}(108) = 36$

∴ No. of married women = No. of women – No. of unmarried women = $36 - 9 = 27$

9. (c) Let monthly income of Komal and Asha be $4x$ and $3x$
Also, let Monthly expenses of Komal and Asha be $3y$ and $2y$.

$$\text{Now, } 4x - 3y = 600 \quad \dots\dots\text{(i)}$$

$$3x - 2y = 600 \quad \dots\dots\text{(ii)}$$

Solving (i) and (ii), $x = 600$ and $y = 600$

$$\therefore \text{Total monthly income} = (4 + 3)(600) = `4200$$

10. (c) Container is filled in 30 min.

$$\therefore \text{Container is half-filled in } (30 - 5) = 25 \text{ min}$$

Hence, time taken for the container to be one-fourth filled = $(25 - 5) = 20$ min.

11. (b) Let after 't' months Rahul joined the business. Hence Amit does business for 1 year and Rahul for $(12 - t)$ months.

They will share the profit in ratio

$$30000 \times 12 : 20000 \times (12 - t) = 2 : 1$$

$$\Rightarrow \frac{360000}{240000 - 20000t} = \frac{2}{1}$$

$$\Rightarrow 40000t = 480000 - 360000$$

$$\Rightarrow 40000t = 120000$$

$$t = 3 \text{ months}$$

12. (a) Let the purchased amount be 1100 kg and the cost price of 1100 kg be ` x.

Therefore, he pays for 1000 kg and buys 1100 kg.

$$\text{Cost price of 1000 kg} = ` \frac{10}{11}x$$

$$\text{Therefore, net profit} = ` \frac{x}{11}$$

Similarly while selling, if he sells 1000 kg. He would actually be selling 900 kg at the price of 1000 kg.

$$\text{Similarly, once again the profit would be } ` \frac{x}{11}$$

$$\text{Therefore, total profit} = ` \frac{2x}{11}$$

$$\text{In terms of percentage, this would be } \frac{200}{11}\%$$

13. (b) Maximum capacity of each bottle can be found by taking the H.C.F of the three given liquids.

Maximum capacity of each bottle = HCF of 403, 465 and 496 = 31

$$\text{Number of bottles for } 403 \ell \text{ of petrol} = \frac{403}{31} = 13$$

$$\text{Number of bottles for } 465 \ell \text{ of diesel} = \frac{465}{31} = 15$$

$$\text{Number of bottles for } 496 \ell \text{ of mobil oil} = \frac{496}{31} = 16$$

Hence, total number of bottles = $13 + 15 + 16 = 44$

14. (c) Since, salary of each employee is increased by 5%, so net average increase in salary = 5%.

\therefore New average monthly salary

$$= 16000 \left(1 + \frac{5}{100}\right) = 16800$$

As transport allowance is not a part of the salary, so deduction of ` 800 will have no effect on the new average salary.

15. (c) Let A contains x coins.

$$B = \frac{x}{2} + 4$$

$$C = \frac{1}{2} \left(\frac{x}{2} + 4 \right) + 4$$

$$B_{\text{left}} = \text{coins left with B} = \left(\frac{x}{2} + 4 \right) - \frac{1}{2} \left(\frac{x}{2} + 4 \right) - 4$$

$$= \frac{1}{2} \left(\frac{x}{2} + 4 \right) - 4 = \frac{x}{4} - 2$$

$$D = \frac{1}{2} \left[\frac{1}{2} \left(\frac{x}{2} + 4 \right) + 4 \right] + 4 = \frac{x}{8} + 7$$

Now, $B_{\text{left}} = D$

$$\frac{x}{4} - 2 = \frac{x}{8} + 7$$

$$\frac{x}{8} = 9 \Rightarrow x = 72$$

16. (b) Since each rod must be cut into parts of equal length and each part must be as long as possible, so HCF should be taken.

HCF of 78, 104, 117 and 169 = 13.

$$\text{No. of parts from } 78 \text{ cm. rod} = \frac{78}{13} = 6$$

$$\text{No. of parts from } 104 \text{ cm. rod} = \frac{104}{13} = 8$$

$$\text{No. of parts from } 117 \text{ cm. rod} = \frac{117}{13} = 9$$

$$\text{No. of parts from } 169 \text{ cm. rod} = \frac{169}{13} = 13.$$

\therefore Maximum no. of pieces = $6 + 8 + 9 + 13 = 36$

17. (d) Since, common difference between no.of balls in box is 4, so it can be taken as an A.P. series.

$$B_1 - B_2 = B_2 - B_3 \dots\dots\dots = 4$$

Total no. of balls = 240

$$B_1 + B_2 + \dots\dots + B_n = 240$$

$$\frac{n}{2} [2a + (n-1)d] = 240 \quad (\because d = B_2 - B_1 = -4)$$

$$n[2a - (n-1)4] = 480$$

$$2a - (n-1)4 = \frac{480}{n}$$

As L.H.S of this equation given an integer value so R.H.S must be an integer and thus 480 should be divisible by n. Out of the given options, 480 is not divisible by 7 only.

18. (a) As, A and D do not work, so any of B, C or E could be the professor, doctor or lawyer. Now, B is neither a doctor or lawyer, so clearly B is the professor.
 19. (d) Let x be the no. of eggs already present in the basket. Then, no. of eggs on each successive days:
 $x, 2x, 4x, 8x, \dots$ upto 24 days.
 From here, we can see that number of eggs are getting doubled on each successive days.

On 24th day basket was filled completely.

$$\therefore \text{On 23rd day basket was filled} = \frac{1}{2}$$

$$\text{Hence, on 22nd day basket was filled} = \frac{1}{2} \left(\frac{1}{2} \right) = \frac{1}{4}$$

20. (a) Required minimum distance = L.C.M of 40,42 and 45.

2	40,	42,	45
2	20,	21,	45
2	10,	21,	45
5	5,	21,	45
3	1,	21,	9
3	1,	7,	3
7	1,	7,	1
	1,	1,	1

$$\text{L.C.M} = 2 \times 2 \times 2 \times 5 \times 3 \times 3 \times 7 = 2520$$

$$\begin{aligned}\text{Required distance} &= 2520 \div 100 \\ &= 25 \text{ m } 20 \text{ cm}\end{aligned}$$

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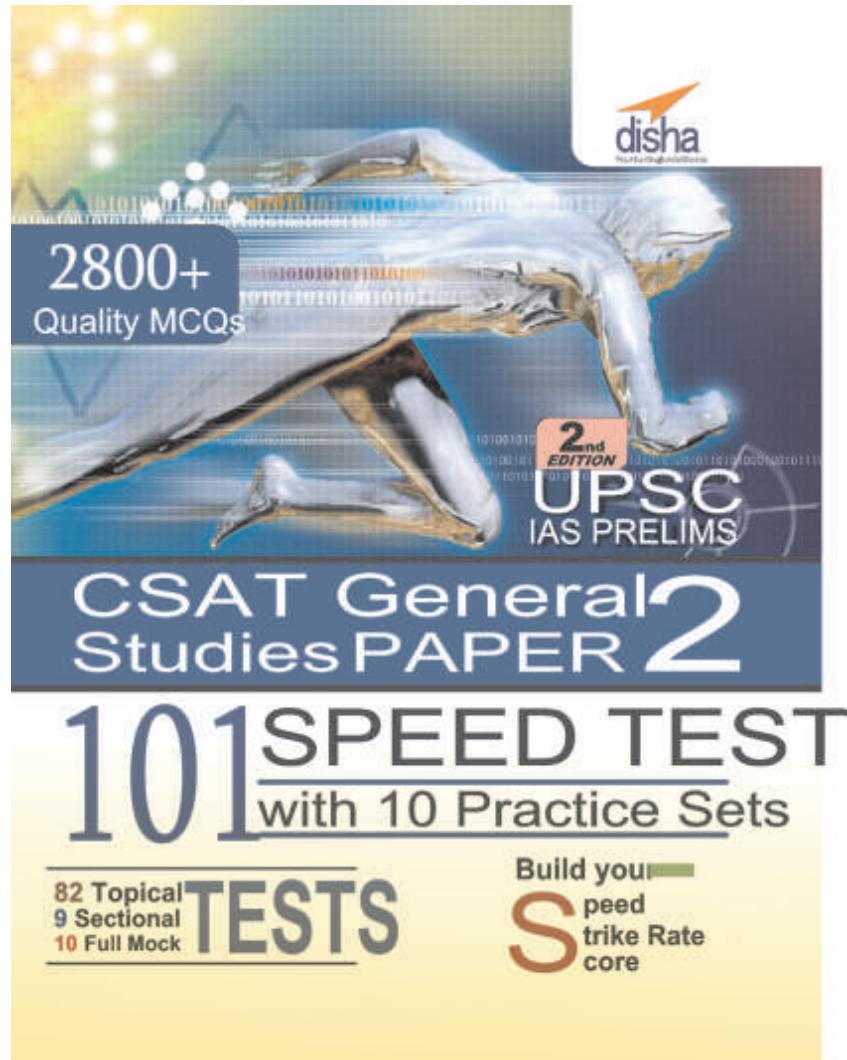
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DATA INTERPRETATION SECTION TEST WITH SOLUTIONS

This section test is taken from :



ISBN : 9789385846663

Max. Marks : 20

No. of Qs. : 20

Time : 20 min.

Date :/...../.....

1. The following table shows the percentage distribution of revenue expenditure of Government of India in 1989-90 and 1994-95:

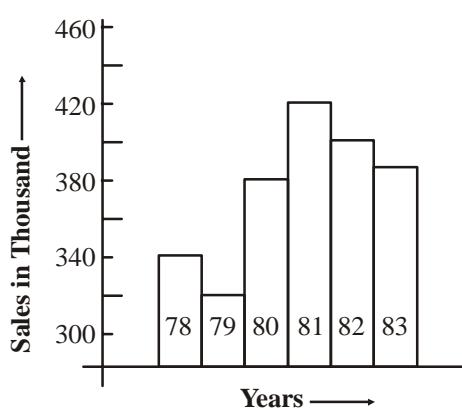
Expenditure Head (percent to total)

Years	Defence	Interest Payments	Subsidies	Grants to	
				States/Uts	Other
1989-90	15.1	27.7	16.3	13.6	27.4
1994-95	13.6	38.7	8	16.7	23

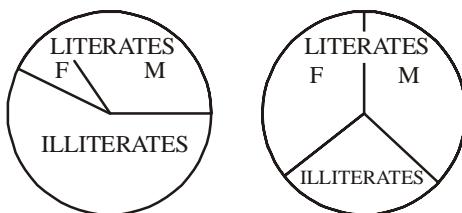
Based on this table, it can be said that the Indian economy is in poor shape because the Central government continues to be under pressure to :

- (a) reduce expenditure on defence
 - (b) spend more and more on interest payments
 - (c) reduce expenditure on subsidies
 - (d) spend more and more as grants-in-aid to State government/Union Territories
2. The following figure represents sales (in thousands) over the period 1978 to 1983.

The sales in 1981 exceeded that in 1979 by



- (a) One hundred
 - (b) Ten thousand
 - (c) One lakh
 - (d) Ten lakh
3. The given pie charts show the proportion of literates and illiterates in a country, in the year 1970 and 1990,

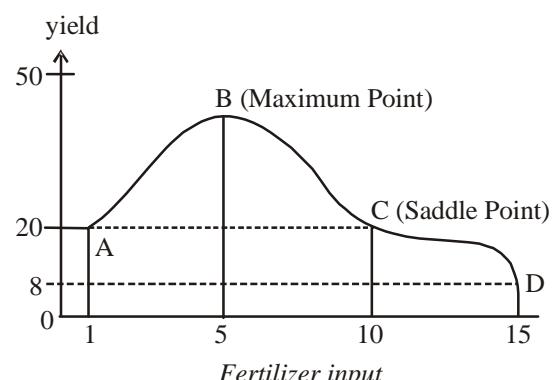


and also the proportion of males (M) and females (F) among the literates. Which one of the following statements can be said to be true beyond any doubt?

- (a) In 1970 half of the illiterates were women (females)
- (b) The proportion of literate males to the total population of males remained the same over the years

- (c) Male literacy did not improve over this period
- (d) The ratio of female literates to male literates improved significantly over this period

4. The yield versus fertilizer input is shown in the graph.



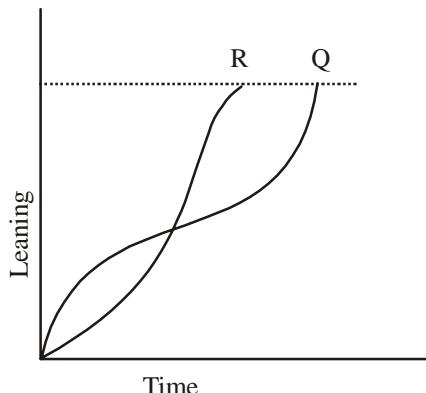
Consider the following statements based on this graph :

- 1. Yield rate is zero at B and C
- 2. There is no yield with no fertilizer input
- 3. The yield is minimum at D
- 4. The yield is neither minimum nor maximum at C

Which of the above statements are correct?

- (a) 1, 2 and 4
- (b) 3 and 4
- (c) 2 and 3
- (d) 1, 3 and 4

5. The following figure represents time vs learning curves of two students, Q and R for learning a Mathematics lesson:



Which one of the following can be drawn from the graph?

- (a) R started slowly in the beginning but got ahead of Q to complete learning the lesson
- (b) Q started slowly and finished learning the lesson earlier than R
- (c) R was always faster than Q in learning Mathematics
- (d) Q was always faster than R in learning Mathematics

DIRECTIONS (Qs. 6-10) : Study the following table carefully and answer the questions given below it :

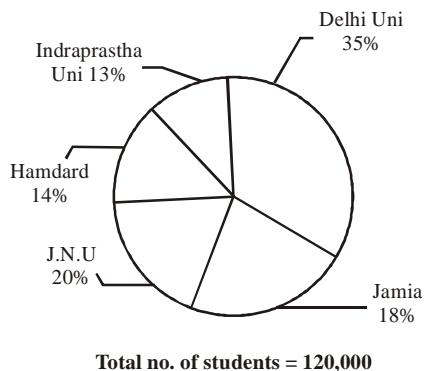
Area and Population of different states

States	Area (in sq kilometres)	Population (in lakhs)
A	6230	1122
B	2540	838
C	8135	649
D	7436	572
E	4893	711
F	3718	286
G	4297	860

6. Among the given states, in case of how many states the area of that state was more than 15 per cent of the total areas taken together?
 - (a) One
 - (b) Three
 - (c) two
 - (d) Can't say
7. For which two states the density of population is approximately equal?
 - (a) No state
 - (b) A and G
 - (c) D and F
 - (d) C and F
8. Approximately how much more is the density of population of state B in comparison to that of state A?
 - (a) 15000
 - (b) 18000
 - (c) 13000
 - (d) 14000
9. In case of how many states the density of population was more than 12 thousand per square kilometre?
 - (a) Two
 - (b) Five
 - (c) Three
 - (d) Four
10. What is the approximate ratio of the areas of state B to the areas of state A and G together.
 - (a) 1:3.8
 - (b) 1:3.5
 - (c) 1:5.2
 - (d) 1:4.1

DIRECTIONS (Qs. 11-12) : Study the following data carefully and answer accordingly.

Following chart shows the number of students in different universities



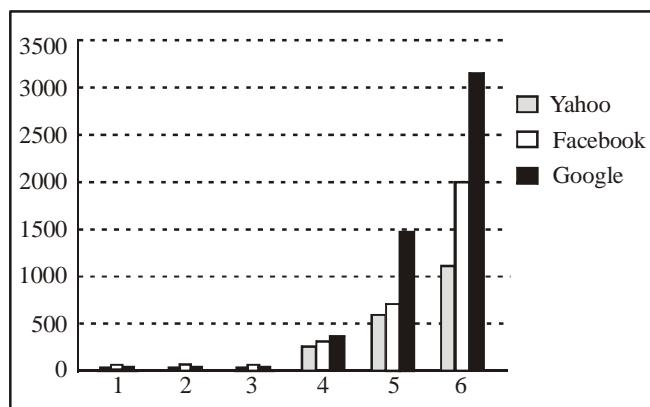
Percentage of listeners of different FM channels in National Capital Region

Universities ↓	FM Channels				
	Radio Mirchi	Radio City	Red FM	FM Gold	Rainbow
Indraprastha	76%	72%	46%	54%	48%
Hamdard	63%	64%	59%	47%	53%
JNU	52%	65%	64%	51%	54%
DU	82%	44%	32%	35%	45%
Jamia	75%	32%	36%	52%	64%

11. How many students of JNU listen to Radio city?
 - (a) 15200
 - (b) 15600
 - (c) 14400
 - (d) 14600
12. The no. of Indraprastha students listening to Rainbow is what per cent of the no. of Jamia students listening FM Gold?
 - (a) 65
 - (b) 56
 - (c) 68
 - (d) None of these

DIRECTIONS (Qs. 13-15) : On the based of the following information.

The following graph shows the revenue (in \$ million) of three companies in their initial six years of operations, in an economy which is characterised by a persistent inflation.

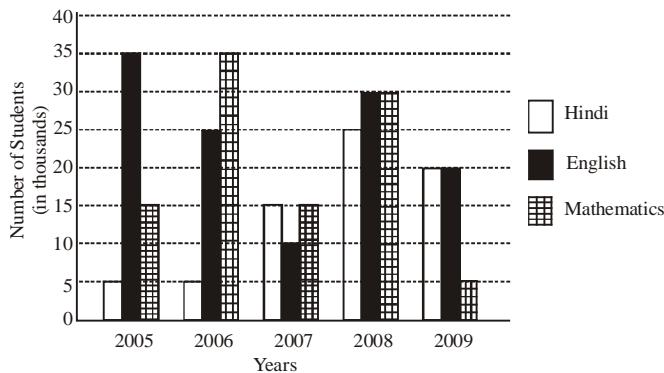


13. In 2010, which could be a valid statement about the revenues (adjusted for inflation) of these three companies?
 - (a) Revenues of all three companies were equal
 - (b) Revenues of all three companies could be equal
 - (c) Revenue of Yahoo was definitely less than Facebook which was definitely less than Google
 - (d) Data insufficient
14. The difference in the average percentage increase in revenues, from 4th to 6th year, of Yahoo and Facebook is:

- (a) 35% (b) 40%
 (c) 45% (d) None of these
15. What would have been Facebook's revenue (in \$ million) in its sixth year of operation if the company had matched Google's percentage growth in revenues from the fifth to the sixth year? Choose the option that is nearest to the answer.
- (a) 1600 (b) 1700
 (c) 1900 (d) 2100

DIRECTIONS (Qs. 16-20) : Study the following graph and answer the questions given below :

No. of students (in thousands) who opted for three different specializations during the given five years in a university



16. The total number of students who opted for Mathematics in the years 2005 and 2008 together are approximately what percent of the total number of students who opted for all three subjects in the same years ?
- (a) 38 (b) 28
 (c) 42 (d) 32
17. Out of the total number of students who opted for the given three subjects, in the year 2009, 38% were girls. How many boys opted for Mathematics in the same year ?
- (a) 1322 (b) 1332
 (c) 3100 (d) Cannot be determined
18. What is the respective ratio between the number of students who opted for English in the years 2006 and 2008 together and the number of students who opted for Hindi in the year 2005 and 2009 together ?
- (a) 11 : 5 (b) 12 : 7
 (c) 11 : 7 (d) 12 : 5
19. If the total number of students in the university in the year 2007 was 455030, then , the total number of students who opted for the given three subjects were approximately what percent of the total students ?
- (a) 19 (b) 9
 (c) 12 (d) 5
20. What is the total number of students who opted for Hindi and who opted for Mathematics in the years 2006, 2007 and 2009 together ?
- (a) 97000 (b) 93000
 (c) 85000 (d) 95000

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1. (b) According to the data showing revenues expenditure of Indian Government, it can be said that the Indian economy is in poor shape due to its increasing debt payments. Due to the burden of debt payments there remains little scope to utilize this money for any other purpose.
2. (c) Sales in year 1979 = 320,000
Sales in year 1981 = 420,000
Thus the required difference = $420,000 - 320,000 = 100,000$
3. (d) It can be clearly seen from the chart that the ratio of female literates to male literates has improved.
4. (b) From the graph, it can be seen that yield rate is not zero at B and C. With no fertilizer input, yield is 20. Yield is clearly minimum at D, i.e., 8. At C, yield is 20 and it is neither maximum nor minimum. So clearly option 3 and 4 are correct.
5. (a) As it can be seen from the graph, R started learning slowly, but after some time its learning curve crossed the curve of Q, i.e., it got ahead of Q and finished earlier.

6-10 :

Following table can be made easily :

Total area = 37249 sq kilometres

State	Density of population (in thousands)	Approx % area
A	$\frac{112200}{6230} = 18$ (approx)	16.7
B	$\frac{83800}{2540} = 33$ (approx)	6.8
C	$\frac{64900}{8135} = 8$ (approx)	21.8
D	$\frac{572}{7436} = \frac{1}{13} \times 100 = 7.69$ (approx)	20
E	$\frac{71100}{4893} = 14.5$ (approx)	13
F	$\frac{286}{3718} = \frac{1}{13} \times 100 = 7.69$ (approx)	10
G	$\frac{86000}{4297} = 20$ (approx)	11.5

[Note : Density of population is the population per square kilometre.]

6. (b) From the above (column 3) it can be answered. States A, C and D have more than 15 per cent of total areas.
7. (c) From column 2 of the above table, it can be observed.

8. (a) Required answer = $(33 - 18) = 15$ thousand.
9. (d) For state A, B, E and G, ie for 4 states.
10. (d) Required answer = $2540 : (6230 + 4297) = 10527 \approx 1 : 4.1$
11. (b) No. of students (of JNU) listening to Radio City
 $= 120000 \times \frac{20}{100} \times \frac{65}{100} = 15600$
12. (d) The no. of Indraprastha students listening to FM Rainbow = $120000 \times 13\% \times 48\%$
The no. of Jamia students listening to FM Gold = $120000 \times 18\% \times 52\%$
 \therefore reqd percentage
 $= \frac{120000 \times 13\% \times 48\%}{120000 \times 18\% \times 52\%} \times 100 = 66.66\%$
13. (d) No data has been given in the question as to which year amongst the given years in the graph is 2010. Hence this question is incorrect.
14. (d) Revenue of Yahoo in 2006 and 2004 is 1200 and 250 respectively.
 \therefore Percentage Increase = $\frac{1200 - 250}{250} \times 100$
 $= \frac{950 \times 100}{250} = 380$
 \therefore Average Percentage Increase = $\frac{380}{2} = 190$
Similarly, Revenue of Facebook in 2006 and 2004 is 2000 and 350 respectively.
 \therefore Percentage Increase = $\frac{2000 - 350}{350} \times 100$
 $= \frac{1650}{350} \times 100 = 471.42$
 \therefore Average Percentage Increase = $\frac{471.42}{2} = 235.71$
Hence Required Difference = 45.71
None of option matches.
15. (a) Percentage increase in Google's growth between 5th and 6th year = $\frac{3250 - 1500}{1500} \times 100 = 116.67$
So the required value of facebook revenue after 6th year
 $= \frac{750 \times 216.67}{100} = \frac{162502.5}{100} = 1625.02$
Hence the nearest answer is (a)

16. (d) Required percentage

$$= \frac{15000 + 30000}{5000 + 35000 + 15000 + 25000 + 30000 + 30000} \times 100$$

$$= \frac{45000}{140000} \times 100 = 32.14 \approx 32\% \text{ (Approx)}$$

17. (c) In 2009,

Total number of girls = $(20 + 20 + 15)$

$$\times \frac{38}{100} \times 1000 = \frac{55 \times 38 \times 100}{100} = 17100$$

Total number of boys = $45000 - 17100 = 27900$

Total number of boys who opted for Mathematics

$$= 27900 \times \frac{5}{45} = 3100$$

18. (a) Required Ratio = $(25 + 30) : (5 + 20) = 55 : 25 = 11 : 5$

$$19. \text{ (b) Required Percentage} = \frac{(15+10+15) \times 1000}{455030} \times 100$$

$$= \frac{40 \times 1000}{455030} \times 100 = 8.79 \approx 9\% \text{ (Approx)}$$

20. (d) Required total number of students

$$= (5 + 35 + 15 + 15 + 20 + 5) \times 1000$$

$$= 95 \times 1000 = 95000$$

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Practice Set

1. Which of the following statements are true about republics in the sixth century BC?
- Every tribal oligarch claimed a share in revenues from peasants
 - Every tribal oligarch was free to maintain his own little army
 - Brahmans had a considerable influence in the republics
 - Republics functioned under the leadership of the oligarchic assemblies
- Choose the correct option from the codes given below:
- (a) 1, 2 and 3 (b) 1, 2 and 4
(c) 3 and 4 (d) 1, 2, 3 and 4
2. Consider the following statements :
- 6th century BC in India was an age of religious revolutions
 - Both Jainism and Buddhism were atheistic movements
 - These were reaction to the Brahman domination
 - Both of these rejected the existence of soul
- Which of the above statements are correct?
- (a) 1, 2 and 3 (b) 1, 2 and 4
(c) 3 and 4 (d) 1, 2, 3 and 4
3. Bhaga, Kara and Pranaya were the types of :
- Tributes paid by subjugated during Mauryan period
 - Tributes paid by subjugated during Gupta times
 - Taxes levied by Mauryans
 - Taxes levied by Guptas
4. Consider the following statements regarding linguistic development in India in 7th century AD?
- Development of Gujarati and Rajasthani started
 - Development of Telugu and Malayalam started
 - Growth of regional scripts
- Which of the above statement(s) is/are correct?
- (a) 1 and 2 (b) 2 and 3
(c) 1 and 3 (d) 1, 2 and 3
5. Which of the following statements are correct about temperate cyclones?
- They have a low pressure gradient than tropical cyclones.
 - They travel from east to west.
 - They are generally produced in summers.
- Choose the correct option from the codes given below:
- (a) 1 (b) 2
(c) 1 and 3 (d) 1, 2 and 3
6. Which of the following pair(s) is/are correct matched?
- | Lake | Location |
|---------------|------------|
| 1. Tanganyika | S. America |
2. Michigan USA
3. Winnipeg New Zealand
4. Great bear Canada
- Choose the correct option from the codes given below:
- (a) 1 and 2 (b) 2 and 3
(c) 1 and 3 (d) 2 and 4
7. Laterisation of soil is related to which type of vegetation?
- (a) Tropical evergreen (b) Tropical monsoon
(c) Temperate evergreen (d) Mediterranean forest
8. Consider the following statements:
- Water in fields for paddy cultivation should not be stagnant.
 - Soil aeration and nitrate formation are impeded in stagnant water and this decreases yield.
- Which of the following statements is/are correct?
- (a) 1 only (b) 2 only
(c) 1 and 2 both (d) None
9. Who among the following personalities has been appointed as the chairperson of the 20th Law Commission of India?
- (a) Justice P.K.Prasad (b) Justice A.P.Shah
(c) Justice Arifit Pasayat (d) Justice P.V. Reddy
10. The Rohingyas are living as a minority community in which of the following countries?
- (a) Vietnam (b) Bangladesh
(c) Thailand (d) Myanmar
11. Consider the following statements:
- “Hand in Hand 2013” was a joint military exercise between India and the US.
 - It was anti-terrorism drill.
- Which of the following statement(s) is/are correct?
- (a) 1 only (b) 2 only
(c) 1 and 2 both (d) None
12. “Equity Reference Framework” is related to :
- SEBI guidelines on stock market
 - UNO initiatives to bring in equity in society
 - New bank licensing policy of RBI
 - Initiatives against climate change
13. The Human Development Report focuses on :
- Sustaining development momentum
 - Peace and security
 - Confronting environmental pressure
 - Managing demographic change
- Choose the correct option from the codes given below:
- (a) 1, 2 and 3 (b) 1, 3 and 4
(c) 1 and 4 (d) 1, 2, 3 and 4
14. Which of the following pairs are incorrectly matched?
- Gobi: Asia 2. Mojave: Africa
 - Andes: Europe 4. Etna: N. America

Choose the correct option from the codes given below:

- (a) 1 and 3 (b) 2 and 3
- (c) 1 and 4 (d) 3 and 4

15. Which of the following statements regarding Chhau dance are correct?

1. It is a group of dances under one generic name.
2. The main difference between these dances is use of masks.
3. The dance is generally accompanied with vocal music.
4. It is celebrated in the month of Ashwin.

Choose the correct option from the codes given below:

- (a) 1 and 2 (b) 2 and 3
- (c) 1 and 4 (d) 3 and 4

16. Consider the following statements regarding Dravidian style of architecture:

1. Earliest examples of temples in the Dravidian style belong to the Chola period.
2. Dravidian style is marked by a tower with rounded top and curvilinear outline.

Which of the following statements are correct?

- (a) 1 only (b) 2 only
- (c) 1 and 2 both (d) None

17. Consider the following statements regarding Lok Sabha and Rajya Sabha:

1. Both Lok Sabha and Rajya Sabha are subjected to dissolution.
2. The power to adjourn the daily sittings of Lok Sabha belongs to the Speaker.

Which of the following statements are correct?

- (a) 1 only (b) 2 only
- (c) 1 and 2 both (d) None

18. Consider the following statements regarding :

1. A person who is not a member of either house of the Parliament can be appointed a member of the council of ministers.
2. A person must be 35 years old to be appointed a minister.

Which of the following statements is/are correct?

- (a) 1 only (b) 2 only
- (c) 1 and 2 both (d) None

19. Consider the following statements:

1. The Chief Election Commissioner is appointed by the President.
2. He/she holds his/her office on the pleasure of President.
3. He/she can be removed on the ground of proved misbehavior or incapacity.
4. He/she is not barred from any further appointment by the government.

Which of the above statements are correct?

- (a) 1, 2 and 3 (b) 1, 2 and 4
- (c) 1, 3 and 4 (d) 3 and 4

20. A party is recognized as a national party, if:

1. It wins two per cent of seats in the Lok Sabha at a general election and these candidates are elected from three states, or
2. If it is recognized as a state party in at least six states.

Which of the above statement(s) is/are correct?

- (a) 1 only (b) 2 only
- (c) 1 and 2 both (d) None

21. Freedom of Association includes :

1. Right to form clubs
2. Right to form trade unions
3. Right to strike
4. Right to declare lock-out

Choose the correct option from the codes given below:

- (a) 1 and 2 (b) 2 and 3
- (c) 1 and 4 (d) 3 and 4

22. The Judges of a state high court are appointed by :

- (a) The President
- (b) The Governor of the state
- (c) The Chief Justice of India
- (d) The Chief Justice of the high court

23. Consider the following statements regarding national emergency.

1. The state governments are suspended.
2. The Prime Minister can modify the constitutional distribution of revenues between the centre and the state.

Which of the above statement(s) is/are correct?

- (a) 1 only (b) 2 only
- (c) 1 and 2 both (d) None

24. Which of the following statements are correct?

1. Igneous rocks are organic in nature.
2. The rocks are non-stratified.

Choose the answer from the codes given below:

- (a) 1 only (b) 2 only
- (c) 1 and 2 both (d) None

25. Strait of Hormuz connects :

- (a) Persian Gulf and Gulf of Oman
- (b) Mediterranean sea and Red Sea
- (c) Arctic Sea and Atlantic Ocean
- (d) Persian Gulf and Indian Ocean

26. Salinity in oceanic water is generally high in

- (a) Equator (b) Tropics
- (c) Polar regions (d) Equal everywhere

27. How many times eclipses can occur in a year?

- (a) Four (b) Five
- (c) Six (d) Seven

28. Which of the following statement(s) is/are correct about equatorial forest?

1. Cycle of sprouting, flowering, seeding, leave formation and fall occurs throughout the year.
2. These forests are in layered structure.

Choose the answer from the codes given below:

- (a) 1 only (b) 2 only
- (c) 1 and 2 both (d) None

29. Arrange the given passes from West to East direction

1. Shipkila 2. Burzil
3. Bomdila 4. Jelepla

Choose the answer from the codes given below:

- (a) 1, 2, 3 and 4 (b) 2, 1, 3 and 4
- (c) 2, 1, 4 and 3 (d) 4, 3, 2 and 1

- 30.** Which of the following statement(s) is/are correct?
- Aravalli ranges extend from north-east to south-west direction.
 - It is a block mountain.
 - It is water divide between Indus and Ganges river system.
 - The highest point is Gurushikhar.
- Choose the answer from the codes given below:
- 1, 2 and 3
 - 1, 2 and 4
 - 2, 3 and 4
 - 1, 3 and 4
- 31.** Which of the following statements are correct?
- Andaman and Nicobar islands are separated from each other by 10 degree channel.
 - These are fold mountains.
 - These are an extension of Arakan Yoma ranges of Myanmar.
 - Port Blair is the highest point of the islands.
- Choose the answer from the codes given below:
- 1, 2 and 3
 - 1, 2 and 4
 - 2, 3 and 4
 - 1, 2, 3 and 4
- 32.** Which of the following crops are grown in Rabi season?
- | | |
|-----------|------------|
| 1. Barley | 2. Potato |
| 3. Jowar | 4. Bajra |
| 5. Gram | 6. Mustard |
- Choose the answer from the codes given below:
- 1, 2, 3, 4 and 5
 - 1, 2, 3 and 6
 - 1, 2, 5 and 6
 - 1, 3, 5 and 6
- 33.** According to MSME Development Act, small manufacturing units are those which have investment limits (in ₹) of :
- 10 Lacs- 2 Crores
 - 10 Lacs- 5 Crores
 - 25 Lacs- 2 Crores
 - 25 Lacs – 5 crores
- 34.** The term budget deficit means :
- Borrowing from the market
 - Borrowing from RBI
 - Borrowing from international agencies
 - Total borrowings
- 35.** Which of the following taxes are regressive taxes?
- | | |
|----------------|------------------|
| 1. Income tax | 2. Corporate tax |
| 3. Excise duty | 4. Sales tax |
- Choose the answer from the codes given below:
- 1 and 2
 - 3 and 4
 - 2, 3 and 4
 - 1, 2, 3 and 4
- 36.** WTO divides supports given to agricultural sector into three groups. Which of the following pair(s) is not correctly matched?
- Public Distribution System: Green Box Subsidy
 - Production Limiting Subsidy: Amber Box Subsidy
 - Minimum Support Price: Blue Box Subsidy
- Choose the answer from the codes given below:
- 1 and 2
 - 2 and 3
 - 1 and 3
 - 3 only
- 37.** Which of the following statements regarding Laffer curve is/are correct?
- It shows the relationship between tax rate and tax payment behaviour of the people.
- 38.**
- If tax rate increase beyond a critical point, tax collection starts falling.
- Choose the answer from the codes given below:
- 1 only
 - 2 only
 - 1 and 2 both
 - None
- 39.** Nirbhæk is a :
- Short range surface to surface missile
 - Medium range surface to surface missile
 - Heavy weight gun to be used by artillery
 - Light weight revolver
- 40.** Alejandro Aravena is recently in news as he was awarded-
- Pulitzer Award
 - Pritzker Prize
 - Golden Globe Award
 - Man Booker Prize
- 41.** Which of the following are considered as the naturally occurring fundamental forces?
- Gravitation
 - Nuclear Forces
 - Electromagnetic Forces
- Choose the answer from the codes given below:
- 1 and 2
 - 2 and 3
 - 1 and 3
 - 1, 2, 3 and 4
- 42.** Which of the following statement(s) is/are correct?
- Natural uranium contains 2-2.5% of Uranium-235
 - Uranium used in research reactors and military applications contains 20% or more U-235.
- Choose the answer from the codes given below:
- 1 only
 - 2 only
 - 1 and 2 both
 - None
- 43.** Consider the following statements about recently test-fired Prithvi-II missile-
- Prithvi-II missile is the first missile to be developed by DRDO under India's prestigious IGMDP
 - it is surface-to-surface medium range ballistic missile.
 - Its Strike range is 350 km.
 - It is capable of carrying 2000 kg to 3000 kg warheads.
- Select the correct option.
- 1, 2, 3
 - 2, 3, 4
 - Only 2 & 3
 - All of the above
- 44.** The theme of World Radio Day 2016 is-
- Gender Equality & Women's Empowerment is Radio.
 - Youth & Radio
 - Communication for sustainable development.
 - Radio in Times of Emergency and Disaster.
- 45.** Which of the following statement(s) is/are correct?
- Our body functions normally between 7-7.8 pH value.
 - Normally, rain is slightly basic.
- Choose the answer from the codes given below:
- 1 only
 - 2 only
 - 1 and 2 both
 - None

45. Water in an earthen pot becomes cool after sometime. This is due to
 (a) Decrease in average kinetic energy of water molecules
 (b) Increase in average potential energy of water molecules
 (c) Decrease in average potential energy of water molecules
 (d) Absorption of heat by the pot
46. Consider the following statements :
 1. Geosynchronous Transfer Orbit (GTO) is elliptical with perigee 240 km and apogee 36000 km.
 2. Revolution period of satellite in GTO is synchronized with the revolution period of earth.
 3. Satellite is first launched into GTO then transferred into geo-stationary orbit.
 Which of the statements are correct?
 (a) 1 and 2 (b) 2 and 3
 (c) 1 and 3 (d) 1, 2 and 3
47. Consider the following statements :
 1. Total biomass and energy produced by plants in an ecosystem is called Net Primary Product.
 2. Total biomass and energy produced by plants is greatest in equatorial rain forests.
 Which of the above statements are correct?
 (a) 1 only (b) 2 only
 (c) 1 and 2 both (d) None
48. Which of the following are the wetlands of India on the network of Ramsar convention?
 1. Vembanad 2. Panchmarhi
 3. Amarkantak 4. Kolleru
 Choose the answer from the codes given below:
 (a) 1 and 2 (b) 2 and 3
 (c) 1 and 4 (d) 2, 3 and 4
49. Which of the following statements are correct?
 1. Core part of the biosphere reserve is a protected area and is called a National Park.
 2. No human interference is allowed in core.
 Choose the answer from the codes given below:
 (a) 1 only (b) 2 only
 (c) 1 and 2 both (d) None
50. Which of the following statement regarding Cartagena Protocol is correct?
 (a) It deals with the safe handling, transport and use of living genetically modified organisms.
 (b) It deals with the international trade of hazardous chemicals, insecticides and pesticides.
 (c) It recognizes the sovereign right of a country over its bio-resources.
 (d) It deals with the mechanism to preserve ozone layer
51. Who among the following rulers of Delhi were Afghans?
 1. Tughlaqs 2. Khaljis
 3. Suris 4. Lodhis
 Choose the answer from the codes given below:
 (a) 1 and 2 (b) 2 and 3
 (c) 3 and 4 (d) None
52. Which of the following were the parts of the classic Islamic decorative motifs ?
 1. Geometrical patterns 2. Arabesque designs
 3. The bell motif 4. Calligraphic forms
 Choose the answer from the codes given below:
 (a) 1 and 2 (b) 1, 2 and 3
 (c) 2, 3 and 4 (d) 1, 2, 3 and 4
53. Which of the following was not built by Firoz Shah Tughlaq ?
 (a) Palace Fort of Firozabad
 (b) Kotla Firoz Shah
 (c) City of Jahan Panah
 (d) Hauz Khas
54. Which of following was not part of the programme of social reform of Brahmo Samaj?
 (a) Spread of modern education.
 (b) Opposition to idolatry.
 (c) Rejection of infallibility of the Vedas.
 (d) Emphasis on human dignity and opposition to caste system.
55. Behramji M. Malabari carried on a campaign against :
 (a) Infant and child marriages
 (b) Communalism
 (c) Female infanticide
 (d) Polygamy
56. Which of following statements is not correct with regard to the preamble of the Constitution?
 (a) It ensures unity and integrity of the nation.
 (b) It ensures federal and parliamentary form of government.
 (c) India is a sovereign, democratic, secular and socialist republic.
 (d) It ensures liberty, equality, fraternity and justice to the people.
57. Which of the following is not an official language of the UN?
 (a) Spanish (b) Latin
 (c) Arabic (d) Chinese
58. Neap tides i.e. small tides are caused when :
 (a) Sun and moon are at right angles
 (b) There is full moon
 (c) Sun, earth and moon are in one line
 (d) There is new moon
59. Prairie region have the characteristics of :
 (a) Heavy rainfall and very hot climate
 (b) Scanty rainfall and temperate climate
 (c) Scanty rainfall and extremes of climate
 (d) Very hot summer and warm winters
60. Which of following statements is incorrect?
 (a) Erosive action of the river is maximum in its upper course.
 (b) Beaches are formed by the deposition of material by waves along the shore.
 (c) Cliff is formed as a result of the wave erosions of the shores.
 (d) Process of deposition of material in the low lands is called gradation.

61. Broad spectrum antibiotics are one which attack :
(a) Pathogens as well as host
(b) A wide range of pathogens
(c) Only pathogens
(d) Only host
62. Conditions necessary for seed germination are :
(a) Moisture, oxygen and temperature
(b) Temperature, oxygen and light
(c) Carbon dioxide, light and light
(d) Soil, moisture and temperature.
63. What is a basic characteristic of antigens?
(a) They are capable of simulating the formation of hemoglobin in the blood.
(b) They destroy hemoglobin.
(c) They are capable of defending themselves against attack of antibodies.
(d) They are capable of simulating the formation of antibodies.
64. Which of following statements concerning electrons are true?
1. It is a particle.
2. It has wave property.
3. Its path is bent by a magnet.
4. It gives out energy while moving in orbital.
Choose the answer from the codes given below:
(a) 1 and 2 (b) 1, 2 and 3
(c) 2, 3 and 4 (d) 1, 2, 3 and 4
65. Which of following statements are true about ozone?
1. It is an allotrope of oxygen.
2. It is formed in atmospheric air by the action of UV rays on atmospheric oxygen.
3. It is lighter than oxygen.
4. It is very vital for life on earth.
Choose the answer from the codes given below:
(a) 1 and 2 (b) 1, 2 and 4
(c) 2, 3 and 4 (d) 1, 2, 3 and 4
66. Which of following statements are properties of electrovalent compounds?
1. They are solid and do not vaporize easily.
2. They usually do not dissolve in organic solvents.
Choose the answer from the codes given below:
(a) 1 only (b) 2 only
(c) 1 and 2 both (d) None
67. What happens if a bar magnet is cut into two halves, transverse to its length?
(a) Both pieces will be without magnetism.
(b) Each piece will have either two north poles or two south poles.
(c) Each piece will be a magnet with either north or south poles at each end.
(d) Only one end will show either north or south pole. The other end will not show any magnetism.
68. While running on horizontal level road, the man holds the umbrella in the vertical direction. If he stops, then in order to protect himself from rain, he should hold it
(a) Still vertically (b) Inclined to front
(c) Inclined to back (d) At an angle of 45°
69. When a person walking in bright sunlight enters a dark room, he is not able to see clearly for a little while because :
(a) The eye muscles cannot immediately change the focal length of eye lens.
(b) The retina retains the bright images for some time and become momentarily insensitive.
(c) The iris is unable to contract the pupil immediately.
(d) The iris is unable to dilate the pupil immediately.
70. The bhakti literature by the Nayanars and Alvars :
(a) Stressed the rigidities of traditional rituals.
(b) Opposed the practices for image worship.
(c) Preached personal devotion of God as means of salvation.
(d) Advocated the austerities preached by the Buddhists and Jains.
71. What is not true about Alauddin Khalji's market regulations?
(a) The prices of various commodities were fixed by the states.
(b) He appointed Sahana-i-Mandi as the controller of markets.
(c) There was provision for rationing of grains during droughts and other emergencies.
(d) He met with firm resistance from the traders while enforcing these measures.
72. Which of following is true about Muhammad bin Tughluq?
1. He believed in the geo-political unity of India.
2. He opened up the administration to people of all organization.
3. He had discussion with Hindu and Jain saints.
4. His measures had the support of the Ulema.
Choose the answer from the codes given below:
(a) 1 and 2 (b) 1, 2 and 4
(c) 1, 2 and 3 (d) 1, 2, 3 and 4
73. Which of the following statements are correct?
1. Mandu architecture was massive in comparison to Gujarat architecture.
2. There is large scale use of colours and glazed tiles in Mandu architecture.
Choose the answer from the codes given below:
(a) 1 only (b) 2 only
(c) 1 and 2 both (d) None
74. Which of following are landmarks of Dalhousie's administration?
1. Indian railways
2. Public works department
3. English as medium of instruction
4. Telegraph
Choose the answer from the codes given below:
(a) 1 and 2 (b) 1, 2 and 4
(c) 1, 2 and 3 (d) 1, 2, 3 and 4

75. Which of following was a recommendation of Hunter's Commission?
- Gradual withdraws of state support from higher education.
 - Women's education.
 - New regulation for the organized senates system.
 - Introduction of civic education at college and university level.
76. Which of the following statement(s) is/are correct?
- Moplah uprising was an agrarian movement.
 - The Moplah peasants revolted against the Hindu landlords' oppressive policies.
 - The uprising was followed by communal clashes.
- Choose the answer from the codes given below:
- 1 and 2
 - 1 and 3
 - 2 and 3
 - 1, 2 and 3
77. Which of the following statement(s) regarding The Government of India Act, 1919 is/are correct?
- The Secretary of state to be paid by the British exchequer.
 - The term of Legislative Assembly was to be five years.
 - The distribution of seats among the different provinces was based on the population.
- Choose the answer from the codes given below:
- 1 and 2
 - 1 only
 - 2 only
 - 2 and 3
78. Jarpa II programme. It is :
- A scientific research on whales by Japan
 - Joint military exercise between the US and Japan
 - A UN initiative to save white elephants
 - To preserve polar ice in Arctic region
79. Heena Sidhu is associated with which game?
- Hockey
 - Shooting
 - Athletics
 - Golf
80. READ (Read-Engage-Achieve-Dream) is a programme jointly launched by :
- India and the US
 - India and Germany
 - India and France
 - Africa and the United Nations
81. Which state of India is the first one to e-auction limestone blocks?
- Uttarakhand
 - Odisha
 - Jharkhand
 - West Bengal
82. Shome Committee was created to look into the guideline of GAAR and to :
- correct anomalies in the tax laws
 - correct the procedural/technical defects that impairs a substantive law
- Choose the answer from the codes given below:
- 1 only
 - 2 only
 - 1 and 2 both
 - None
83. India is a regular member of which of the following organizations?
- BIMSTEC
 - Shanghai Cooperation Organization
 - ASEAN
 - G-20
- Choose the answer from the codes given below:
- 1 and 2 only
 - 2 and 3 only
 - 1 and 4 only
 - 1, 2, 3 and 4
84. Which of the following statement(s) is/are correct?
- National Green Tribunal is a special body established under an act in 2010.
 - It should dispose the cases within six months
 - The tribunal shall be bound by the procedure laid down under the Civil Procedure Code, 1908.
- Choose the answer from the codes given below:
- 1 and 2
 - 2 and 3
 - 1 and 3
 - 1, 2 and 3
85. Which of the following statement(s) regarding e-Biz is/are correct?
- It is one of the mission mode projects under the National e-Governance Programme.
 - It is to provide a single window mechanism for number of services to business users.
- Choose the answer from the codes given below:
- 1 only
 - 2 only
 - 1 and 2 both
 - None
86. A research reactor is being operated by Uranium-233 derived from Thorium indigenously. The name of the reactor is :
- BHAVINI
 - KAMINI
 - SADHANA
 - CORAL
87. A broad-based pyramid shaped age structure is the characteristic of a population that is
- Growing rapidly
 - Stable
 - Growing slowly
 - Declining
88. Keystone species are those species
- whose absence would cause major disruption in an ecosystem.
 - which has largest number individuals in an ecosystem.
 - which is at the top of the food chain of the ecosystem.
 - which has ability to provide food to all the other species
89. Which of the following factors may play a role in increased biodiversity?
- Complex population interaction
 - A higher degree of habitat heterogeneity
 - Introduced species
 - Narrower niches
- Choose the answer from the codes given below:
- 1, 2 and 3
 - 3 and 4
 - 1, 2 and 4
 - 1, 2, 3 and 4
90. Which of the following statements are correct?
- The headquarter of the World Intellectual Property Organization (WIPO) is at Rome.
 - The trade Related Aspects of Intellectual Property (TRIPS) are binding on all WTO members.

3. Least developed members of WTO are not required to apply the provisions of TRIPS for a period of 20 years from the date of application of the agreement.

Choose the answer from the codes given below:

- (a) 1 and 2 (b) 2 and 3
 (c) 1 and 3 (d) 1, 2 and 3

91. Which of the following comes under non-planned expenditure?

1. Subsidies
2. Interest payments
3. Defense expenditure
4. Salaries of government employees

Choose the answer from the codes given below:

- (a) 1 and 2 (b) 1 and 3
 (c) 3 and 4 (d) 1, 2, 3 and 4

92. Which one of the following is not the objective of the Commission for Agricultural Costs and Prices (CACP)?

- (a) To stabilize agricultural prices
- (b) To ensure meaningful real income levels to the farmer
- (c) To protect the interest of the consumers by providing essential commodities at reasonable prices.
- (d) To ensure maximum price to the farmers

93. Which one of the following is not true about the money bill?

- (a) It can only be introduced in Lok Sabha
- (b) It cannot be introduced except on the recommendation of the President
- (c) The President can summon a joint sitting of parliament in case of a deadlock
- (d) The decision of the Lok Sabha speaker is final to decide whether the bill is a money bill or not.

94. There is a constitutional requirement to have a minister for tribal welfares in which of the following states?

- (a) Assam, Nagaland and Manipur
- (b) Himachal Pradesh, Uttar Pradesh and Rajasthan
- (c) Bihar, Madhya Pradesh and Odisha
- (d) Manipur, Tripura and Meghalaya

95. There is a constitutional requirement to have a minister for tribal welfares in which of the following states?

- (a) Assam, Nagaland and Manipur
- (b) Himachal Pradesh, Uttar Pradesh and Rajasthan
- (c) Bihar, Madhya Pradesh and Odisha
- (d) Manipur, Tripura and Meghalaya

96. Consider the following statements:

1. Seasonal changes are less prominent over the Southern hemisphere
2. The climate in Australia remains almost in every part throughout the year.

Which of the following statements is/are correct?

- (a) 1 only (b) 2 only
 (c) 1 and 2 both (d) None

96. Consider the following statements:

1. The western disturbance causes winter rain in northwest India.
2. The retreating monsoon causes winter rain in Coromandel Coast.

Which of the following statements is/are correct?

- (a) 1 only (b) 2 only
 (c) 1 and 2 both (d) None

97. Consider the following statements:

1. Silver is an efficient conductor of electricity.
2. Copper is used in metal wires as it is a better conductor of electricity than Silver

Which of the following statements is/are correct?

- (a) 1 only (b) 2 only
 (c) 1 and 2 both (d) None

98. The speed of sound in air with high moisture

- (a) is more than in air with less moisture
- (b) is less than in air with less moisture
- (c) is equal irrespective of moisture content
- (d) is equal to speed of sound in water

99. Consider the following statements:

1. Sulh-i-kul policy became the state policy of Akbar
2. He removed religious disabilities of the Hindus by abolishing the pilgrim taxes, Jiziyah and opening state services to them.

Which of the following statements is/are correct?

- (a) 1 only (b) 2 only
 (c) 1 and 2 both (d) None

100. Consider the following statements:

1. Disguised unemployment is a common feature of the Indian Agriculture.
2. More than fifty percent of the Indian workforce is dependent on the agriculture sector.

Which of the following statements is/are correct?

- (a) 1 only (b) 2 only
 (c) 1 and 2 both (d) None

Hints and Explanations

1. (b) In 6th century BC republics, people elected their representatives from dominant families, but there was not great impact of Brahmins in politics of these republics.
2. (a) Buddhism rejected the existence of both God and soul. Jainism rejected the existence of God but argued that everything in the world contains soul.
3. (c) Bhaga, Kara, Pindakara, Hiranya and Pranaya were different agricultural taxes imposed on people.
4. (c) In 7th century AD, languages, such as Gujarati, Rajasthani, Bengali, Kannada, etc. started developing. Telugu and Malayalam developed later.
5. (a) Temperate cyclones are produced in winters and they travel from West to East.
6. (d) Tanganyika Lake is located in Africa and Winnipeg is located in Canada.
7. (a) Tropical evergreen forests are characterized by closely set trees forming a canopy. Here bacterial action reduces humus leading to laterisation.
8. (c) Stagnant water should not be allowed in paddy fields as it decreases yield.
9. (b) Justice Ajit Prakash Shah is the Chairman of the 20th Law Commission of India. He was the Chief Justice of Delhi High Court from May 2008 till his retirement in February 2010.
10. (d) The Rohingya people are an ethnic group who practice Islam and speak Rohingya, an Indo-European language.
11. (b) This is joint military exercise between India and China to counter terrorism.
12. (d) It is a concept according to which the burden to counter climate change should be distributed among all countries based on several parameters
13. (b) Peace and security is not a focus of Human Development Report as it mainly focuses on social development indicators.
14. (d) Andes mountain range is in S. America and Mt. Etna is an active volcano in Italy, Europe.
15. (a) Vocal music in Chhau hardly exists but is accompanied with instrumental music. These dances are performed as a part of Chaitra Parba.
16. (d) Earliest examples of temples in the Dravidian style belong to the Pallava period. Dravidian style has the tower usually in the shape of a rectangular truncated pyramid.
17. (b) Lok Sabha is subjected to dissolution while Rajya Sabha cannot be dissolved as its one-third members are replaced every three years.
18. (a) A person can be appointed as a minister even if he is not a member of parliament for maximum period of six months. The person should meet all other criteria, such as s/he should be an Indian citizen and should at least 25 years of age.
19. (c) The Chief Election Commissioner can be removed by a resolution passed by two-thirds majority in both the houses, either on the ground of proved misbehaviour or incapacity.
20. (a) A party to become national party needs to be recognized as a state party in four states.
21. (a) The Supreme Court held that the trade unions have no guaranteed right to strike or right to declare lock-out.
22. (a) The judges of a state high court are appointed by the President in consultation with the Chief Justice of India and the Governor of the state.
23. (d) During national emergency, the state governments are brought under the complete control of the centre, though they are not suspended. The President can modify the constitutional distribution of revenues between the centre and the state.
24. (b) Igneous rocks are without fossils as they are primary rocks.
25. (a) Strait of Hormuz connects Persian Gulf and Gulf of Oman and is important for trade of crude petroleum.
26. (b) Salinity is more in tropics as evaporation is rapid due to hot and dry conditions. Tropics are dominated with deserts, so rainfall and river discharge is low.
27. (d) There could be four solar and three lunar or five solar and two lunar eclipses in a year.
28. (c) The plants here shed their leaves at different times in the year. So, the cycle occurs throughout the year.
29. (c) Burzil connects Kashmir and POK, Shipkila connects Himachal Pradesh with Tibet, Jelepla connects Kalimpong with Lhasa and Bomdilla connects Arunachal Pradesh with Tibet.
30. (d) Aravalli mountains are the oldest fold mountain ranges of the world.
31. (a) Saddle Peak in Northern Andaman is the highest point.
32. (c) Jowar and Bajra are grown in Kharif season.
33. (d) The act provides for the investment limits according to the type of enterprise. Small units are those which have investment limits of 25 lacs-5 crore in manufacturing units or 10 lacs- 2 crore in service providing units.
34. (b) Total borrowing is called fiscal deficit and borrowing from RBI is called budget deficit.
35. (a) The burden of excise duty and sales tax is equal on everyone who consumed the good on which it is imposed, irrespective of variation in incomes. So, it doesn't help in reducing inequality.
36. (b) Production limiting subsidy comes under Blue Box Subsidy and is considered not directly distortionary, so permissible under WTO. MSP comes under Amber box subsidies and are considered distortionary, so are restricted by WTO to specific limits.
37. (c) At a very high tax rate, increase in tax rate reduces the incentive to invest. This also increases incentive to cheat.

38. (d) Nirbheek is a light weight revolver designed especially for women to defend themselves from assault.
39. (b) Alejandro Aravena (from Chile) is the recipient of the 2016 Pritzker Architecture prize.
40. (d) There are four naturally occurring fundamental forces—gravitation, weak and strong nuclear forces and electromagnetic forces.
41. (b) Natural Uranium carries 0.71% of Uranium- 235.
42. (a) It is capable of carrying 500 kg to 100 kg of warheads.
43. (d) World Radio Day is observed every year on February 13. This year's theme.
44. (a) Rain is slightly acidic. When the pH value of rain becomes less than 5.6, then we call it as Acid Rain.
45. (a) The kinetic energy of molecules increases with the temperature of the substance. The earthen pot cools due to evaporation. Due to decrease in temperature the kinetic energy of molecules decreases.
46. (c) Revolution period of satellite is synchronized with the rotation period of earth.
47. (b) Total biomass and energy produced by plants in an ecosystem is called Gross Primary Product.
48. (c) Panchmarhi and Amarkantak are biosphere reserves and not wetlands.
49. (c) Core is the internal most part of the biosphere reserve and any human activity in this area is restricted.
50. (a) Cartagena Protocol was enforced in 2003 to deal with the safe handling, transport and use of living GMOs. Rotterdam convention deals with the international trade of hazardous chemicals, insecticides and pesticides.
51. (c) Tughlaqs and Khaljis were Turkis, while Lodhis and Suris were Afghans.
52. (b) The bell motif was not a part of Islamic decorative motifs.
53. (c) City of Jahan Panah was founded by Mohd. Bin Tughlaq.
54. (c) Brahmo Samaj aimed at reforms in Hindu Society. It did not criticize the Vedas.
55. (a) The efforts of Behramji M. Malabari led to enactment of consent of marriage act.
56. (b) The concept of federalism and parliamentary is not mentioned in the preamble. It mentions that India is a republic.
57. (b) Latin is not an official language of the UN.
58. (a) High tides occur when sun, earth and moon are in one line. Neap tides occur when sun and moon are at right angles that is in first and third quarter of Lunar month.
59. (c) Prairie regions known for its temperate grasslands. The reason only grasses can grow in these places is due to scanty rainfall and extremes of climates.
60. (d) Deposition is a geological process by which sediments, soil and rocks are added to landform and land mass.
61. (b) The broad spectrum antibiotics refer to an antibiotic that acts against a wide range of disease causing bacteria.
62. (a) The right amounts of moisture, oxygen and temperature are necessary conditions for germination.
63. (d) Antigens are present in our bodies which stimulate the formation of antibodies to fight against various diseases.
64. (b) According to Bohr's Model, the electrons do not radiate energy while they move in orbits.
65. (b) Ozone is heavier than oxygen as it has three molecules of free oxygen (O).
66. (c) They have high melting and boiling points. They are composed of oppositely charged particles.
67. (c) When a magnet is cut into pieces, every piece behaves like a different magnet.
68. (c) While running, the man holds the umbrella in the vertical direction, that means, the direction of the rainfall is the same as the direction of the movement of the man. So, when he stops the umbrella should be inclined to back to save him from getting wet.
69. (d) The iris dilates the pupil to adjust change in light as a person come to a dark place from a brighter place.
70. (c) Nayanars and Alvars preached the path of personal devotion and self-sacrifice towards God to achieve salvation
71. (c) The prices of food grains were reduced drastically at the time of Alauddin Khalji, but there was no provision for rationing of grains during emergencies.
72. (c) Muhammad bin Tughluq took innovative initiatives and promoted meritocracy and religious tolerance which was not liked by religious leaders.
73. (c) Mandu architecture was massive and looked more massive with the use of lofty plinth for the buildings, such as the Hindola Mahal and Jahaz Mahal.
74. (b) Lord Dalhousie is regarded as the pioneer of Modernity in India through his modern approach towards administration and transport and communication.
75. (b) The Hunter Commission realized that there is little penetration of education among women. So, the commission recommended special attention to women education.
76. (d) The Moplah peasants revolted against the Hindu landlords' oppression who were loyal to British government. The uprising was followed by killing of people on both sides.
77. (b) The term of Legislative Assembly was to be three years. The distribution of seats among the different provinces was based on the relative importance of the provinces.
78. (a) Jarpa II programme is scientific research on whales by Japan. It has been banned as it International Court of Justice as it is alleged that the programme is used for commercial purpose.
79. (b) Heena Sidhu was recently in news due to her achievements in 10 m pistol shooting events.
80. (a) READ is a joint programme of India and the US to improve the reading skills of primary school students.
81. (c) Jharkhand became the first ever state to e-auction two limestone blocks after the passage of MMDR Act, 2015 by Parliament.
82. (c) Parthasarathi Shome committee was created by the Prime Minister to look into and give recommendations for a stable tax regime.

83. (c) India is a member of BIMSTEC which is regional Organization of countries which are near Bay of Bengal and G-20 which is an organization including all the major economies of the world.
84. (a) The tribunal shall be guided by the principles of natural justice.
85. (c) e-Biz would help in getting all the services to business users at one place covering the entire cycle on their operations.
86. (b) The research reactor, KAMINI is operating in Kalpakkam using Uranium-233 derived from Thorium. This fuel is bred, reprocessed and fabricated indigenously.
87. (a) A broad-based pyramid-shaped age structure shows that there are large number of children in the population which means a high population growth rate.
88. (a) Keystone species are those species which have an important place in an ecosystem and their absence may even lead to destruction of that ecosystem.
89. (c) Introduced species may lead to decrease in biodiversity because there may be no natural predators for new species.
90. (d) WIPO is a specialized agency of United Nations which is responsible to protect the intellectual property rights of the member countries.
91. (b) Interest payments and salaries of government employees comes under planned expenditure.
92. (d) CACP works to protect the interests of farmers as well as consumers. So, it recommends a reasonable price after analyzing the input cost.
93. (c) Joint sitting of the two houses cannot be held to resolve the deadlock on a money bill.
94. (d) It is mandatory for the state government of Manipur, Tripura and Meghalaya to appoint minister for tribal welfare.
95. (a) Many climatic factors are not that influential in seasonal changes in Southern hemisphere due to lesser landmasses. But still there are variations in climates due to various reasons such as distance from the sea, latitude, wind direction etc.
96. (c) The main reason for the rainfall in winters in northwest India is western disturbance due to Jet streams. The retreating monsoon receives moisture before hitting the Coromandel Coast in winters.
97. (a) Silver is a better conductor of electricity than Copper. Silver is very expensive so, cannot be used in metal wires.
98. (c) Earth is flat at poles due to centrifugal force. Earth axis of rotation is a tilted one.
99. (c) Akbar adopted the policy of equality to people of all religions.
100. (c) Disguised unemployment in agriculture is more due to lack of employment opportunities in other sectors.

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2

Practice Set

1. Consider the main highlights with reference to the Social Progress Index (SPI):
 1. The top five countries are New Zealand, Switzerland, Iceland, Netherlands and Norway. These countries, which are relatively small in terms of populations, score strongly across all dimensions.
 2. There is a non-linear relationship between Social Progress Index scores and GDP per capita. The relationship between economic development and social progress changes as income rises.
 3. At lower income levels, small differences in GDP are associated with large differences in social progress.
 4. Social Progress Index scores display significant deviations from the GDP per capita trend line. New Zealand, for example, is the top-ranked country on social progress, but ranks only 25th in GDP per capita.
 5. Similarly, Chad is the lowest ranked country on social progress but it is far from the poorest country (it ranks 109th on GDP per capita).
- Select the answers using the codes given below:
(a) 1 and 3 (b) 2 and 4
(c) 1, 2 and 3 (d) 1, 2, 3, 4 and 5
2. Which of the following elements are present in all proteins?

1. Carbon	2. Hydrogen
3. Oxygen	4. Nitrogen

Select the correct answer using the codes given below:
(a) 2 and 3 (b) 1, 2 and 4
(c) 1, 3 and 4 (d) 1, 2, 3 and 4
3. Consider the following statements:
 1. Forest gardening, originating in prehistory, is thought to be the world's oldest known form of agriculture (or agroecosystem).
 2. Vere Gordon Childe then described an "Agricultural Revolution" occurring about the 10th millennium BCE with the adoption of agriculture and domestication of plants and animals.
 3. The Sumerians first began farming c. 9500 BCE. By 7000 BCE, agriculture had been developed in India and Peru separately; by 6000 BCE, in Egypt; by 5000 BCE, in China.
 4. About 2700 BCE, agriculture had come to Mesoamerica.Which of the above statements is/are correct?
(a) 1 only (b) 2 and 3
(c) 1, 2 and 3 (d) 1, 2, 3 and 4
4. Consider the following statements:
 1. The Indus Valley Civilization (IVC) was a Bronze Age civilization (3300–1300 BCE; mature period 2600–1900 BCE) extending from what today is northeast Afghanistan to Pakistan and northwest India.
 2. Along with Ancient Egypt and Mesopotamia, it was one of three early civilizations of the Old World, and of the three the most widespread.
 3. It flourished in the basins of the Indus River, one of the major rivers of Asia, and the Ghaggar-Hakra river, which once coursed through northwest India and eastern Pakistan.
5. Select the correct answer using the codes given below:
(a) 1 only (b) 2 and 3
(c) 1 and 3 (d) 1, 2 and 3
6. In the context of financial market, share/shares refers/refer to:
 1. Individual pieces representing an equal stake in the capital of a business organization.
 2. Unit of account that can represent several monetary instruments
 3. Investments in limited partnerships, and real estate investment trusts.
 4. All the above
6. Consider the following statements:
 1. The Indus Valley Civilization is also known as the Harappan Civilization, after Harappa.
 2. Harappa was the first of the Indus Valley Civilization sites to be excavated in the 1920s, in what was then the Punjab province of British India, and now is Pakistan.
 3. The discovery of Harappa, and soon afterwards, Mohenjo-Daro, was the culmination of work beginning in 1861 with the founding of the Archaeological Survey of India in the British Raj.
 4. Excavation of Harappan sites has been ongoing since 1920, with important breakthroughs occurring as recently as 1999.
 5. There were earlier and later cultures, often called Early Harappan and Late Harappan, in the same area of the Harappan Civilization.
 6. Until 1999, over 1,056 cities and settlements had been found, of which 96 have been excavated, mainly in the general region of the Indus and Ghaggar-Hakra rivers and their tributaries.

7. Among the settlements were the major urban centres of Harappa, Mohenjo-daro (UNESCO World Heritage Site), Dholavira, Ganeriwala in Cholistan and Rakhigarhi.

Select the correct answer using the codes given below:

- (a) 1, 3, 4, 6 and 7 (b) 1, 2, 3, 5 and 6
 (c) 2, 4, 5 and 7 (d) 1, 2, 3, 4, 5, 6 and 7

7. Consider the following pairs:

Fruit	Biological name
1. Apricot	<i>Prunus armeniaca</i>
2. Banana	<i>Musa</i>
3. Blackberry	<i>Rubus fruticosus</i>
4. Cashew-nut	<i>Anacardium occidentale</i>

Which of the above pairs are correctly matched?

- (a) 1 and 3 (b) 2 and 4
 (c) 1, 3 and 4 (d) 1, 2, 3 and 4

8. Consider the following statements:

1. In 1872–75, Alexander Cunningham published the first Harappan seal (with an erroneous identification as Brahmi letters).
2. It was half a century later, in 1912, that more Harappan seals were discovered by J. Fleet, prompting an excavation campaign under Sir John Hubert Marshall in 1921–22.
3. The discovery of the civilization at Harappa was done by Sir John Marshall, Rai Bahadur Daya Ram Sahni and Madho Sarup Vats, and at Mohenjo-daro by Rakhal Das Banerjee, E. J. H. MacKay, and Sir John Marshall.

Select the correct answer using the codes given below:

- (a) 1, 2 and 3 (b) 1 and 2
 (c) 1 and 3 (d) None

9. Consider the following statements regarding National Capital Goods Policy 2016.

1. Increase exports of capital goods from the current 40% to 50% of Production.
2. This policy is framed for the first time by Ministry of heavy industry & Public enterprise.
3. Enhance Indian made capital goods export through a ‘Heavy Industry Export & Market Development Assistance Scheme’

Choose the correct answer from the options given below.

- (a) 1, 2, 3 (b) 2 & 3
 (c) Only 2 (d) 1 & 3

10. With reference to agriculture in India, consider the following statements:

1. Agriculture and allied sectors contribute nearly 22 per cent of Gross Domestic Product (GDP) of India.
2. About 65–70 per cent of the population are dependent on agriculture for their livelihood.
3. The Ministry of Agriculture is the main authority in India for regulation and development of activities relating to agriculture, horticulture, fishing, animal husbandry.

Select the correct answer using the codes given below:

- (a) 1 only (b) 2 and 3
 (c) 1 and 3 (d) 1, 2 and 3

11. Consider the following statements and choose the incorrect one from given options-

1. “School on wheels” is an initiative launched by Rajasthan state government.
 2. It is set up in a van which houses a library, has been set up by an NGO ‘Taabar Society’
 3. It has been introduced for spreading education among the tribal and nomadic children.
 4. It will use audio/video mediums to teach children in Jaipur district.

Choose the correct answer from the options given below.

- (a) 1 & 4 (b) Only 3
 (c) Only 4 (d) None of the above

12. The US and Japan have issued a Joint Statement on robust trilateral relations with India. The important points of statement include:

1. Maritime security in the Indian Ocean and Western Pacific
 2. Development of an Indo-Pacific economic connectivity corridor among the countries in the region to enhance regional connectivity
 3. Humanitarian assistance and disaster relief

Select the correct answer using the codes given below:

- (a) 1 only (b) 2 and 3
 (c) 1 and 3 (d) 1, 2 and 3

13. Which of the following statement(s) is/are correct about Swachha Sarvekshan 2016?

1. Swachha Sarvekshan Survey 2016 is conducted by Quality Council of India as part of ‘Swachha Bharat Mission’
 2. 73 cities are surveyed.
 3. Chandigarh has been ranked first in terms of cleanliness.

Choose the correct answer from the options given below.

- (a) 1 & 2 (b) 2 & 3
 (c) 1 & 3 (d) Only 1

14. Consider the following statements:

1. According to census 2011, only 32.7 per cent of rural households have latrine facilities.
 2. Total Sanitation Campaign renamed the Nirmal Bharat Abhiyan (NBA) aims to transform rural India into ‘Nirmal Bharat’ by adopting a community saturation approach and achieve 100 per cent access to sanitation for all rural households by 2022.
 3. NBA projects have been sanctioned in 607 rural districts with a total outlay of ₹ 22,672 crores, with a central share of ₹14,888 crores.

Select the answer using the codes given below:

- (a) 1 and 2 (b) 3 and 2
 (c) 1, 2 and 3 (d) None

15. Consider the following statements:

1. The JNNURM, a flagship programme for urbanization launched in December 2005, provides substantial central financial assistance to cities for infrastructure, housing development, and capacity development.
 2. The two out of four components under the JNNURM devoted to shelter and basic service needs of the poor residing in urban areas are: Basic Services to the Urban Poor (BSUP) for 65 select cities and

- the Integrated Housing and Slum Development Programme (IHSDP) for other cities and towns.
3. The Mission period has been extended for two years till March 2014 for completion of projects sanctioned till March 2012.
- Select the correct answer using the codes given below:
- (a) 1 only (b) 2 and 3
 (c) 1 and 3 (d) 1, 2 and 3
16. Infosys Prize 2015 in Social Sciences category is awarded to-
- (a) Mohan Maharaj (b) Janardon Ganeri
 (c) Srinath Raghavan (d) Amit Sharma
17. Where is Surajkund International Crafts Mela held?
- (a) Surat (b) Faridabad
 (c) Rajasthan (d) Nasik
18. Consider the following statements-
1. Losar festival is celebrated in Ladakh region of Jammu & Kashmir.
 2. Losar is Tibetan word for 'New year'
 3. It is also celebrated by Sherpa, Gurung & Bhutia Communities residing in different regions in the country.
 4. On the third day of the festival people wait for the night to see the first moon of the New year.
- Which of the above statement is correct?
- (a) 1, 2, 3, 4 (b) 1, 2, 3
 (c) 2, 3, 4 (d) Only 2 & 3
19. Recently, former UN Secretary General Boutros Ghali Passes away.
- Which of the following statement about him is incorrect?
- (a) He was Egyptian politician & diplomat.
 (b) He had served as fifth UN Secretary General.
 (c) He was UN's first Secretary General from Africa.
 (d) He was born in Cairo on 14 November 1922.
20. LAMITYE 2016 is a joint military exercise of-
- (a) India & Indonesia (b) India & USA
 (c) India & Russia (d) India & Seychelles.
21. Consider the following statements:
1. Robin K Dhowan on April 17, 2014 took over as the 22nd Chief of Indian Navy.
 2. He is a successor of Admiral DK Joshi - first defence forces chief since independence - who resigned on 26 February 2014 taking moral responsibility of the accident on INS Sindhuratna in Mumbai.
 3. Dhowan is a navigation and direction specialist and he has commanded frontline warships INS Khurki, INS Ranjit and INS Delhi.
- Select the correct answer using the codes given below:
- (a) 1 only (b) 2 and 3
 (c) 1 and 3 (d) 1, 2 and 3
22. Which one of the following is the most productive ecosystem?
- (a) Oligotrophic Lake (b) High Sea
 (c) Estuary (d) Savanna
23. According to Ministry of Health & Family Welfare India stands committed to eliminating Malaria by-
- (a) 2020 (b) 2030
 (c) 2040 (d) 2045
24. World Meteorological Organization (WMO) panel on April 4, 2014 announced that a place in India regained the world record for highest rainfall in 48 hours with 2493 millimeters. The place is:
- (a) Cherrapunji (b) Myansawram
 (c) Shillong (d) None of the above
25. Which Indian state ranks first in the '2016 Index of Internet Readiness of Indian states'?
- (a) Gujarat (b) Tamil Nadu
 (c) Karnataka (d) Maharashtra.
26. Consider the following statements regarding India's International Arbitration Centre.
1. It is India's first international arbitration centre established in Mumbai
 2. The Centre falls in the framework of Make in India.
 3. It will help in attracting higher global investments to Mumbai & Maharashtra.
 4. This will be the first concrete Step towards setting up of the IFSC (International Financial Services Centre) in Mumbai.
- Select the correct answer from the given options-
- (a) Only 1 (b) 1 & 3
 (c) 1, 2, 4 (d) All of the above
27. Recently with which country India signed MoU on technical cooperation in Rail Sector?
- (a) Canada (b) Japan
 (c) Sweden (d) Germany
28. Which country wins ICC U-19 Cricket World Cup 2016?
- (a) India (b) Bangladesh
 (c) Sri Lanka (d) West Indies
29. Consider the following statements:
1. Researchers in the UK on April 14, 2014 for the first time announced to conduct a test on patient of artificial blood made from human stem cells.
 2. The trial was conducted by the team of Professor Marc Turner, medical director at the Scottish National Blood Transfusion Service (SNBTS) at the University of Edinburgh.
 3. The trial test would be conducted in 2016.
 4. The trial will involve three patients with thalassaemia, a disorder of the RBCs that requires regular transfusions.
 5. If successful, the trial could pave the way for manufacturing of blood on an industrial scale.
- Select the answer using the codes given below:
- (a) 1, 2 and 3 (b) 2 and 4
 (c) 1, 2 and 3 (d) 1, 2, 3, 4 and 5
30. Who among the following is known as 'the father of local self-government' in India?
- (a) Mahatma Gandhi (b) Lord Canning
 (c) Lord Ripon (d) Lord Wellesley
31. Consider the following pairs:
- | DISEASE | CAUSE |
|---|--------------|
| (1) Diphtheria, pneumonia and leprosy | Hereditary |
| (2) AIDS, syphilis and gonorrhoea | Bacterial |
| (3) Colour blindness, haemophilia and sickle cell anaemia | Sex-linked |
| (4) Polio, Japanese B encephalitis and plague | Viral |

Select the correct answer using the codes given below:

- (a) 2 only (b) 3 only
- (c) 1 and 4 (d) None

32. Consider the following statements:

1. Gautama Buddha, also known as Siddhārtha Gautama, Shakyamuni, or simply the Buddha, was a sage on whose teachings Buddhism was founded.
2. Gautama taught a middle way between sensual indulgence and the severe asceticism found in the Sramana (renunciation) movement common in his region.
3. Gautama is the primary figure in Buddhism, and accounts of his life, discourses, and monastic rules are believed by Buddhists to have been summarized after his death and memorized by his followers.

Select the correct answer using the codes given below:

- (a) 1 only (b) 2 and 3
- (c) 3 only (d) 1, 2 and 3

33. Which of the following divides the peninsular plateau into two parts?

- (a) The Malwa Plateau (b) The Narmada Rift
- (c) Aravalli Hills (d) Vindhya Mountains

34. Consider the following statements:

1. The beginning of Samudragupta's reign was marked by the defeat of his immediate neighbours, Achyuta, ruler of Ahichchhatra, and Nagasena following which Samudragupta began a campaign against the kingdoms to the south.
2. He passed through the forest tracts of Madhya Pradesh, crossed the Odisha coast, marched through Ganjam, Vishakapatnam, Godavari, Krishna and Nellore districts and may have reached as far as Kancheepuram.
3. In the southern Pallava kingdom of Kanchipuram, he defeated king Vishnugopa, then restored him and other defeated southern kings to their thrones on payment of tribute.
4. After capturing his enemies, he did not attempt to maintain direct control, instead he reinstated them as tributary kings.

Select the correct answer using the codes given below:

- (a) 1, 2 and 3 (b) 2, 3 and 4
- (c) 1, 2, 3 and 4 (d) 1, 3, and 4

35. Consider the following statements with reference to Samudragupta's coins:

1. Samudragupta is the father of Gupta monetary system as much is known about Samudragupta through coins issued by him and inscriptions.
2. Samudragupta's coins were of eight different types and all made of pure gold.
3. His conquests brought him the gold and also the coin-making expertise from his acquaintance with the Kushana.
4. He started minting different types of coins known as the Standard Type, the Archer Type, the Battle Axe Type, the Ashvamedha Type, the Tiger Slayer Type, the King and Queen Type and the Lyre Player Type.

5. At least three types of coins — Archer Type, Battle Axe and Tiger types — represent Samudragupta in martial armour.

Select the correct answer using the codes given below:

- (a) 1 and 3 (b) 2, 4 and 5
- (c) 1, 3 and 5 (d) 1, 2, 3, 4 and 5

36. Which of the following can be found as greenhouse gases in Earth's atmosphere?

1. Carbon dioxide (CO₂)
2. Methane (CH)
3. Nitrous oxide (N)
4. Ozone
5. Water vapours

Select the correct answer using the codes given below:

- (a) 1 and 3 (b) 2, 4 and 5
- (c) 1, 3 and 5 (d) 1, 2, 3, 4 and 5

37. Consider the following statements:

1. The Kalyani Chalukyas promoted the Gadag style of architecture, excellent examples of which are present in Gadag, Dharwad, Koppal and Haveri districts of Karnataka.
2. They patronised great Kannada poets, such as Ranna and Nagavarma II and is considered as a golden age of Kannada literature.
3. The Vachana Sahitya style of native Kannada poetry flourished during these times.

Select the correct answer using the codes given below:

- (a) 1 only (b) 2 and 3
- (c) 3 only (d) 1, 2 and 3

38. Consider the following statements with reference to Western Ganga Dynasty:

1. The Western Ganga Dynasty ruled southern Karnataka region during 350–550 CE.
2. The area they controlled was called Gangavadi which included the present day districts of Mysore, Chamrajnagar, Tumkur, Kolar, Mandya and Bangalore.
3. Gangas initially had their capital at Kolar, before moving it to Talakad near Mysore.
4. They made a significant contribution to Kannada literature with such noted writers as King Durvinita, King Shivamara II and Chavundaraya.
5. The famous Jain monuments at Shravanabelagola were built by them.

Select the correct answer using the codes given below:

- (a) 1 and 3 (b) 2, 4 and 5
- (c) 1, 3 and 5 (d) 1, 2, 3, 4 and 5

39. Consider the following:

1. Bipin Chandra Pal 2. Ashfaqulla Khan
3. Rajendra Lahiri 4. Bhagat Singh

Who among the above was/were involved in Kakori conspiracy in 1925?

- (a) 1, 2 and 3 (b) 2 and 3
- (c) 1 and 4 (d) 1, 2, 3 and 4

40. Consider the following statements:

1. The Rashtrakuta Empire ruled from Manyaketha in Gulbarga from 735 CE until 982 CE.

2. The Rashtrakuta Empire reached its peak under Amoghavarsha I (814–878 CE), considered Ashoka of South India.

3. The Rashtrakutas came to power at the decline of the Badami Chalukyas and were involved in a three-way power struggle for control of the Gangetic plains with the Prathihara of Gujarat and Palas of Bengal.

Select the correct answer using the codes given below:

- (a) 1 only
- (b) 2 and 3
- (c) 3 only
- (d) 1, 2 and 3

41. Consider the following statements:

1. Forest provides timber for humans; food and shelter for flora and the fauna.
2. The nutrient cycle between organisms form food chains and biodiversity of species.
3. Waterfalls provide spring water for humans, animals and plants for survival and also habitat for marine organisms.
4. The rainforest in Fatu-Hiva, in Marquesas Islands and the Carson Fall in Mount Kinabalu, Malaysia are examples of undisturbed natural resources.
5. The water current can be used to turn turbines for hydroelectric generation.

Select the correct answer using the codes given below:

- (a) 1 and 3
- (b) 2, 4 and 5
- (c) 1, 3 and 5
- (d) 1, 2, 3, 4 and 5

42. Consider the following statements:

1. A natural resource is often characterized by amounts of biodiversity and geodiversity existent in various ecosystems.
2. Natural resources are derived from the environment. Some of them are essential for our survival while most are used for satisfying our wants. Natural resources may be further classified in different ways.
3. Natural resources are materials and components (something that can be used) that can be found within the environment.
4. Every man-made product is composed of natural resources (at its fundamental level).
5. A natural resource may exist as a separate entity such as fresh water, and air, as well as a living organism, such as a fish, or it may exist in an alternate form which must be processed to obtain the resource, such as metal ores, oil, and most forms of energy.

Select the correct answer using the codes given below:

- (a) 1 and 3
- (b) 2, 4 and 5
- (c) 1, 3 and 5
- (d) 1, 2, 3, 4 and 5

43. Consider the following statements:

1. A non-renewable resource (also known as a finite resource) is a resource that does not renew itself at a sufficient rate for sustainable economic extraction in meaningful human time frames.
2. The original organic material, with the aid of heat and pressure, becomes a fuel, such as oil or gas.
3. Fossil fuels (such as coal, petroleum, and natural gas), and certain aquifers are all non-renewable resources.

4. The metals themselves are present in vast amounts in the earth's crust, and are continually concentrated and replenished over millions of years.

5. The extraction of non-renewable resources by humans only occurs where they are concentrated by natural processes (such as heat, pressure, organic activity, weathering and other processes) enough to become economically viable to extract.

6. These processes generally take from tens of thousands to millions of years.

7. As such, localized deposits of metal ores near the surface which can be extracted economically by humans are non-renewable in human time frames, but on a world scale, metal ores as a whole are inexhaustible, because the amount vastly exceeds human demand, on all time frames.

Select the correct answer using the codes given below:

- (a) 1, 3, 4, 6 and 7
- (b) 1, 2, 3, 5 and 6
- (c) 2, 4, 5 and 7
- (d) 1, 2, 3, 4, 5, 6 and 7

44. Consider the following statements:

1. National Thermal Power Corporation has diversified into hydropower sector.
2. Power Grid Corporation of India has diversified into telecom sector.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) 1 and 2 both
- (d) None

45. Consider the following statements:

1. Natural resources, such as coal, petroleum (crude oil) and natural gas take thousands of years to form naturally and cannot be replaced as fast as they are being consumed.
2. Eventually, it is considered that fossil-based resources will become too costly to harvest and humanity will need to shift its reliance to other sources of energy. These resources are yet to be named.
3. An alternative hypothesis is that carbon based fuel is virtually inexhaustible in human terms, if one includes all sources of carbon-based energy, such as methane hydrates on the sea floor, which are vastly greater than all other carbon based fossil fuel resources combined.
4. These sources of carbon are also considered non-renewable, although their rate of formation/replenishment on the sea floor is not known.
5. However their extraction at economically viable costs and rates has yet to be determined.

Select the correct answer using the codes given below:

- (a) 1 and 3
- (b) 2, 4 and 5
- (c) 1, 3 and 5
- (d) 1, 2, 3, 4 and 5

46. Consider the following statements:

1. Nuclear power provides about 6% of the world's energy and 13–14% of the world's electricity.
2. The expense of the nuclear industry remains predominantly reliant on subsidies and indirect insurance subsidies to continue.

3. Nuclear energy production is associated with potentially dangerous radioactive contamination as it relies upon unstable elements.
 4. In particular, nuclear power facilities produce about 200,000 metric tons of low and intermediate level waste (LILW) and 10,000 metric tons of high level waste (HLW) (including spent fuel designated as waste) each year worldwide.
 5. The use of nuclear fuel and the high-level radioactive waste, the nuclear industry generates is highly hazardous to people and wildlife.

Select the correct answer using the codes given below:

- 47.** Consider the following statements:

1. Annual release of uranium and thorium radioisotopes from coal combustion, predicted by ORNL to cumulatively amount to 2.9 million tons over the 1937–2040 period, from the combustion of an estimated 637 billion tons of coal worldwide.
 2. The use of nuclear technology requires a radioactive fuel.
 3. Uranium ore is present in the ground at relatively low concentrations and mined in 19 countries.

Select the correct answer using the codes given below:

48. Consider the following statements:

- Consider the following statements:

 1. Damodar Valley Corporation is the first multi-purpose river valley project of independent India.
 2. Damodar Valley Corporation includes thermal and gas power stations.

Which of the statements given above is/are correct?

49. Consider the following statements:

- Consider the following statements:

 1. Natural resources, called renewable resources, are replaced by natural processes and forces persistent in the natural environment.
 2. There are intermittent and reoccurring renewables, and recyclable materials, which are utilized during a cycle across a certain amount of time, and can be harnessed for any number of cycles.
 3. The production of goods and services by manufacturing products in economic systems creates many types of waste during production and after the consumer has made use of it.
 4. The natural environment, with soil, water, forests, plants and animals are all renewable resources, as long as they are adequately monitored, protected and conserved.
 5. Sustainable agriculture is the cultivation of plant materials in a manner that preserves plant and animal ecosystems over the long term.

Select the correct answer using the codes given below:

- 50.** Consider the following statements:

1. Hydroelectric power can supply 1/3 of our total energy global needs. Geothermal energy can provide 1.5 more times the energy we need.
 2. There is enough wind to power the planet 30 times over, wind power could power all of humanity's needs alone.

Select the correct answer using the codes given below:

51. On the Mohs scale, graphite (a principal constituent of pencil “lead”) has a hardness of:

52. Consider the following statements:

1. The Sayyid dynasty ruled Delhi Sultanate in India from 1414 to 1451.
 2. They succeeded the Tughlaq dynasty and ruled the Sultanate until they were displaced by the Lodi dynasty.
 3. The Lodi dynasty was a Pashtun dynasty that was the last Delhi Sultanate.
 4. The dynasty founded by Bahlul Khan Lodi ruled from 1451 to 1526.
 5. The last ruler of this dynasty, Ibrahim Lodi was defeated and killed by Babur in the first Battle of Panipat on April 20, 1526.

Select the correct answer using the codes given below:

- 53 Consider the following statements:

- Consider the following statements:

 1. Of all the provincial styles that developed in architecture in the mid-14th century, the Gujarat style is the most elegant.
 2. The Gujarat rulers evolved a synthesis of Islamic and Jain styles.
 3. The characteristic features of this style include extensive use of pillar and lintel system, device (a clerestory or wall with series of windows) to admit light into the central pan of the halltype mosque, semi-circular enrailed arch on two pillars, systematic use of graceful minarets and heavily sculpted buttresses, rich and delicate jali in arches, windows, etc. and frequent use of balconied windows.
 4. Some fine examples of this style are the Rani Rupmati (c. 1460) mosque and the tomb and mosque of Rani Suhrai or Rani Sori (1514).

Select the correct answer using the codes given below:

54. With reference to the difference between gross national income (GNI) and gross domestic product (GDP), which of the following is not correct?

- (a) GDP defines its scope according to location, while GNI defines its scope according to ownership.
 - (b) In practice, foreign ownership makes GDP and GNI identical.

- (c) In a global context, world GDP and world GNI are, therefore, equivalent terms.
 (d) GDP is product produced within a country's borders; GNI is product produced by enterprises owned by a country's citizens.
- 55.** Consider the following statements with reference to the history of the southern part of India:
1. The history of the southern part of India covers a span of over four thousand years during which the region saw the rise and fall of a number of dynasties and empires.
 2. The period of known history of the region begins with the Iron age (1200 to 24 BCE) period until the 14th century CE.
 3. Dynasties of Satavahana, Chalukya, Pallava, Rashtrakuta, Kakatiya and Hoysala were at their peak during various periods of history.
 4. The southern kingdoms constantly fought amongst themselves and against external forces when Muslim armies invaded south India.
 5. Vijayanagara empire rose in response to the Muslim intervention and covered the most of south India and acted as a bulwark against Mughal expansion into the south.
- Select the correct answer using the codes given below:
 (a) 1, 2, 3, 4, and 5 (b) 1, 2 and 3
 (c) 2, 3 and 5 (d) 2, 3 and 4
- 56.** Consider the following statements
1. The Mughal emperors were Central Asian Turk-Mongols from Uzbekistan, who claimed direct descent from both Genghis Khan (through his son Chagatai Khan) and Timur.
 2. At the height of their power in the late 17th and early 18th centuries, they controlled much of the Indian subcontinent, extending from Bengal in the east to Kabul & Sindh in the west, Kashmir in the north to the Kaveri basin in the south.
 3. Its population at that time has been estimated as between 110 and 150 million, over a territory of more than 3.2 million square kilometres (1.2 million square miles).
- Select the correct answer using the codes given below:
 (a) 1 only (b) 2 and 3
 (c) 1 and 3 (d) 1, 2 and 3
- 57.** With reference to The Origin of the Universe Big-Bang theory, consider the following statements:
1. 5 billion years ago there was a big heavenly body, made up of heavy matters.
 2. Due to sudden explosion of this heavenly body, normal matters came out of it.
 3. Many celestial bodies were created as a result of aggregation of these normal matters.
- Which of the statements given above is/are correct?
 (a) 1 only (b) 2 and 3
 (c) 3 only (d) 1, 2 and 3
- 58.** Consider the following statements:
1. Zahir ud-din Muhammad Babur acquired Kabulistan in 1504, and decided to regain the territories in Hindustan held once by Turks.
 2. He started his exploratory raids in September 1519 when he visited the Indo-Afghan borders to suppress the rising by Yusufzai tribes.
 3. He undertook similar raids up to 1524 and had established his base camp at Peshawar. Finally in 1526 in his fifth attempt, Babur defeated the last of the Delhi Sultans, Ibrahim Shah Lodi, at the First Battle of Panipat.
 4. To secure his newly founded kingdom, Babur then had to face the formidable Indian king Rana Sanga of Chittor, at the Battle of Khanwa who offered stiff resistance but was defeated.
- Which of the above statement/s is/are correct?
 (a) 1 only (b) 2 and 3
 (c) 1, 2 and 3 (d) 1, 2, 3 and 4
- 59.** Consider the following statements:
1. The Mughal Empire was the dominant power in the Indian subcontinent between the mid-16th century and the early 18th century.
 2. Founded in 1526, it officially survived until 1857, when it was supplanted by the British Raj.
 3. The dynasty is sometimes referred to as the Timurid dynasty as Babur was descended from Timur.
- Select the correct answer using the codes given below:
 (a) 1 only (b) 2 and 3
 (c) 1 and 3 (d) 1, 2 and 3
- 60.** Consider the following statements:
1. In the periodic table of chemical elements, electron affinity is always found to increase from top to bottom in a group.
 2. In a group, the atomic radii generally increase from top to bottom.
- Select the correct answer using the codes given below:
 (a) 1 only (b) 2 only
 (c) 1 and 2 both (d) None
- 61.** The Prime Minister Mr. Narendra Modi had been dedicated to the nation, Brahmaputra Cracker and polymer Limited, a petrochemical complex, at **Lepetkata**, near Dibrugarh with following key points.
1. This is the fifth petro-chemical project in the entire North-East.
 2. The project will help in employment generation, and avoid massive cost overruns.
 3. The Project includes MUDRA and Start-up- India to create fresh opportunities for the youth.
 4. These projects will provide natural raw material for the industrial purposes.
- Pick out the incorrect statement from the above mentioned key point
 (a) Only 1 (b) Both 2 & 4
 (c) Both 1 & 3 (d) All of the above
- 62.** Researchers working on the accurate calculation of the distance of Milky Way to the nearest galaxy found the exact distance to our nearest galaxy, Large Magellanic Cloud (LMC). What is the exact distance?
 (a) 163000 light years (b) 175000 light years
 (c) 183000 light years (d) 150000 light years

committee in September 1939, passed a resolution conditionally supporting the fight against fascism, but were rebuffed when they asked for independence in return.

Select the correct answer using the codes given below:

- (a) 1 and 2 (b) 2 only
- (c) 1 only (d) None

91. Consider the following statements:

1. The aim of the Quit India movement was to bring the British Government to the negotiating table by holding the Allied War Effort hostage.
2. The call for determined but passive resistance that signified the certitude that Gandhi foresaw for the movement is best described by his call to Do or Die, issued on 8 August at the Gowalia Tank Maidan in Bombay, since renamed August Kranti Maidan (August Revolution Ground).

Select the correct answer using the codes given below:

- (a) 1 only (b) 2 only
- (c) 1 and 2 both (d) None

92. Which one of the following statements is NOT correct?

- (a) The presence of NaCl increases the rate of setting of plaster of Paris.
- (b) Gypsum is added to the cement to slow down its rate of setting.
- (c) All alkaline earth metals form hydrated salts.
- (d) Barium and strontium are found free in nature.

93. Consider the following statements:

1. After two Japanese attacks on Christmas Island in late February and early March 1942, relations between the British officers and their Indian troops broke down.
2. On the night of 10 March, the Indian troops led by a Sikh policemen mutinied killing the five British soldiers and the imprisoning of the remaining 21 Europeans on the island.
3. On 31 March, a Japanese fleet arrived at the island and the Indians surrendered.

Select the correct answer using the codes given below:

- (a) 1 only (b) 2 and 3
- (c) 3 only (d) 1, 2 and 3

94. Consider the following statements:

1. On 3 June 1947, Viscount Louis Mountbatten, the last British Governor-General of India, announced the partitioning of British India into India and Pakistan.
2. With the speedy passage through the British Parliament of the Indian Independence Act 1947, at 11:57 on 14 August 1947 Pakistan was declared a separate nation, and at 12:02, just after midnight, on 15 August 1947, India also became an independent nation.
3. Prime Minister Nehru and deputy prime minister Sardar Vallabhbhai Patel invited Mountbatten to continue as Governor General of India replacing in June 1948 by Chakravarti Rajagopalachari.

Select the correct answer using the codes given below:

- (a) 1 only (b) 2 and 3
- (c) 3 only (d) 1, 2 and 3

95. Consider the following statements:

1. The Constituent Assembly completed the work of drafting the constitution on 26 November 1949; on 26 January 1950, the Republic of India was officially proclaimed.
2. The Constituent Assembly elected Dr. Rajendra Prasad as the first President of India, taking over from Governor General Rajgopalachari.
3. Subsequently, India invaded and annexed Goa and Portugal's other Indian enclaves in 1961, the French ceded Chandernagore in 1951, and Pondichéry and its remaining Indian colonies in 1956, and Sikkim voted to join the Indian Union in 1975.

Select the correct answer using the codes given below:

- (a) 1 only (b) 2 and 3
- (c) 3 only (d) 1, 2 and 3

96. Consider the following statements with reference to glacier:

1. Glaciers are one of the most significant agents of landscape change simply because of their sheer size and power as they move across an area.
2. They are erosional forces because their ice carves the ground beneath them and on the sides in the case of a valley glacier which results in a U-shaped valley.

Select the correct answer using the codes given below:

- (a) 1 only (b) 2 only
- (c) 1 and 2 both (d) None

97. Consider the following statements with reference to weathering:

1. Weathering is an erosional process that involves the chemical breakdown of rock (such as limestone) and the mechanical wearing down of rock by a plant's roots growing and pushing through it, ice expanding in its cracks, and abrasion from sediment pushed by wind and water.
2. Weathering can, for example, result in rock falls and eroded rock.
3. At the same time, the use of more precise physical measurement techniques, including differential GPS, remotely sensed digital terrain models and laser scanning techniques, have allowed quantification and study of these processes as they happen.
4. Computer simulation and modelling may then be used to test our understanding of how these processes work together and through time.
5. Geomorphically, relevant processes generally fall into the production of regolith by weathering and erosion, the transport of that material, and its eventual deposition.

Select the correct answer using the codes given below:

- (a) 1 and 3 (b) 2, 4 and 5
- (c) 1, 3 and 5 (d) 1, 2, 3, 4 and 5

98. Consider the following statements:

1. The bottom relief of the Indian Ocean resembles that of the Atlantic Ocean.

2. This ocean has a continuous central ridge, called the Arabic-Indian Ridge, together with its southern extension, the Kerguelen-Gausberg Ridge, which connects with the Antarctic continent.
3. The central ridge separates the eastern basin from the western basin.
4. All the oceanic islands in this ocean are situated on the central ridge and on its cross ridges.
5. The Cocos and Christmas islands are the two exceptions.
6. The Indian Ocean is characterized by having a large number of broad submarine ridges, separating several individual basins of the abyssal plain.
7. One of its most distinguishing features is the presence of the series of curving ridges in the northwest segment of the ocean.

Select the correct answer using the codes given below:

- (a) 1, 3, 4, 6 and 7 (b) 1, 2, 3, 5 and 6
 (c) 2, 4, 5 and 7 (d) 1, 2, 3, 4, 5, 6 and 7

99. Which of the following pairs are correctly matched?

Creator	Creation
1. Mrichchakatikam	Shudraka
2. Buddhacharita	Vasuvandhu
3. Mudrarakshsha	Vishakadatta
4. Harshacharita	Banabhatta

Select the correct answer using the codes given below:

- (a) 1, 2, 3 and 4 (b) 1, 3 and 4
 (c) 1 and 4 (d) 2 and 3

100. Consider the following statements:

1. Coral reefs are underwater structures made from calcium carbonate secreted by corals. Coral reefs are colonies of tiny animals found in marine waters that contain few nutrients.
2. Most coral reefs are built from stony corals, which in turn consist of polyps that cluster in groups.
3. The polyps belong to a group of animals known as Cnidaria, which also includes sea anemones and jellyfish.
4. Unlike sea anemones, coral polyps secrete hard carbonate exoskeletons which support and protect their bodies. Reefs grow best in warm, shallow, clear, sunny and agitated waters.
5. Often called “rainforests of the sea”, coral reefs form some of the most diverse ecosystems on earth.
6. They occupy less than 0.1% of the world’s ocean surface, about half the area of France, yet they provide a home for 25% of all marine species, including fish, mollusks, worms, crustaceans, echinoderms, sponges, tunicates and other cnidarians.
7. Paradoxically, coral reefs flourish even though they are surrounded by ocean waters that provide few nutrients.

Select the correct answer using the codes given below:

- (a) 1, 3, 4, 6 and 7 (b) 1, 2, 3, 5 and 6
 (c) 2, 4, 5 and 7 (d) 1, 2, 3, 4, 5, 6 and 7

Hints and Explanations

1. (d) India was ranked 102 out of 132 countries on the Social Progress Index published by the US-based non-profit organisation. Performance of India is good in the areas of nutrition and basic medical care. Overall score of India on Social Progress Index is 50.24.
Basic human needs dimension: India does best in areas including nutrition and basic medical care and has the greatest opportunity to improve human wellbeing by focusing more on shelter. India achieved 100th rank with 54.48 score.
Foundations of wellbeing dimension: India excel at providing building blocks for people's lives, such as access to basic knowledge. India achieved 108th rank with score 56.84 score.
Opportunity dimension: India outperforms in providing opportunities for people to improve their position in society and scores highly in personal freedom and choice dimension. India achieved 109th rank with 39.39 score.
2. (d) Protein is a complex organic compound of carbon, hydrogen, oxygen and nitrogen. It is a long chain molecule composed of amino acids ($R - CH(NH_2)COOH$) joined by peptide bonds.
3. (d) Although attention has tended to concentrate on the Middle East's Fertile Crescent, archaeology in the Americas, East Asia and Southeast Asia indicates that agricultural systems, using different crops and animals, may in some cases have developed there nearly as early. The development of organised irrigation, and the use of a specialised workforce, by the Sumerians, began about 5500 BCE. Stone was supplanted by bronze and iron in implements of agriculture and warfare. Agricultural settlements had until then been almost completely dependent on stone tools.
4. (d) At its peak, the Indus Civilization may have had a population of over five million. Inhabitants of the ancient Indus river valley developed new techniques in handicraft (carnelian products, seal carving) and metallurgy (copper, bronze, lead, and tin). The Indus cities are noted for their urban planning, baked brick houses, elaborate drainage systems, water supply systems, and clusters of large non-residential buildings.
5. (d) In financial markets, a share is a unit of account for various financial instrument including stocks (ordinary or preferential), and investments in limited partnerships, and real estate investment trusts. The common feature of all these is equity participation (limited in the case of preference shares). A corporation divides its capital into shares, which are offered for sale to raise capital, termed as issuing shares. The number of shares make their respective holder eligible to receive a certain part of the profits made by that company.
6. (d) The Harappan language is not directly attested and its affiliation is uncertain since the Indus script is still undeciphered. A relationship with the Dravidian or Elamo-Dravidian language family is favoured by a section of scholars. The ruins of Harappa were first described in 1842 by Charles Masson. In 1856, General Alexander Cunningham, later Director General of the Archeological Survey of Northern India, visited Harappa where the British engineers John and William Brunton were laying the East Indian Railway Company line connecting the cities of Karachi and Lahore.
7. (d) In botany, a fruit is a part of a flowering plant that derives from specific tissues of the flower, one or more ovaries, and in some cases accessory tissues. Fruits are the means by which these plants disseminate seeds. There are many different scientific names for fruits. Some examples of which include apple (*malus*), banana (*musaceae*), orange (*citrus sinensis*), and pear (*pyrus*).
8. (a) Outposts of the Indus Valley Civilization were excavated as far west as Sutkagan Dor in Baluchistan, as far north as at Shortugai on the Amu Darya (the river's ancient name was Oxus) in current Afghanistan, as far east as at Alamgirpur, Uttar Pradesh, India and as far south as at Malwan, Surat Dist., India.
9. (b) Increase exports of capital goods from the current 27% to 40% of production.
10. (d) Agriculture is the mainstay of the Indian economy because of its high share in employment and livelihood creation. It supports more than half a billion people providing employment to 52 per cent of the workforce. Its contribution to the nation's GDP is about 18.5 per cent in 2006–07. India's total geographical area is 328.7 million hectares, of which 141 million hectares are the net sown area, while 190 million hectares are the gross cropped area.
11. (d) All statements are correct.
12. (d) US President Barack Obama and Japanese Prime Minister Shinzo Abe issued a joint statement in Tokyo, Japan on 25 April 2014. According to the joint statement, the US and Japan emphasized the need to strengthen trilateral dialogue with India on a wide range of regional and global issues. The agreement to strengthen trilateral cooperation with countries, like India along with Australia and South Korea was a part of shared objectives of promoting peace and economic prosperity in the Asia-Pacific. Both the countries agreed to strengthen trilateral cooperation in the areas.
13. (a) Mysuru city is ranked first in cleanliness.
14. (d) Under the NBA, the provision of incentives for individual household latrine units has been widened to cover all above poverty line (APL) households that belong to/are SCs, STs, small and marginal farmers, landless labourers with homesteads, physically challenged, and women headed along with all BPL households. Since 1999, over 8.97 crore toilets have been provided to rural households under the TSC/NBA.
15. (d) About 1.57 million houses had been sanctioned by 6 February 2013 and 1610 projects with outlay of more than ₹ 41,723 crores approved. More than 1.57 million houses have been sanctioned, of which more than 6.60 lakh have been completed and 4.37 lakh occupied.

16. (c) Srinath Raghavan was awarded infosys prize 2015 in social sciences category for outstanding research that synthesizes military history, strategic analysis & international politics into powerful & imaginative perspective on India is global context.
17. (b) The 30th edition of Surjkund Mela is held at Faridabad in Haryana.
18. (a) All statements are correct.
19. (b) He had served as sixth UN Secretary General from 1992 to 1996.
20. (d) The 7th edition of India, Seychelles joint military exercise LAMITYE 2016 is held in Victoria, Seychelles.
21. (d) At the time of being appointed as the chief of Navy, he was serving the Indian Navy as its acting Naval Chief. His tenure on the post is of 25 months as he will retire in May 2016. He has also served as Chief Staff Officer (Operations) Headquarters Western Naval Command.
22. (d)
23. (b) The Health Minister Launched the National framework for Malasian Elimination 2016-2030, which outlines India's strategy for elimination of the disease by 2030.
24. (a) The previous world record for 48-hour rainfall was held by La Reunion Island in the Indian Ocean. La Reunion Island holds the record with 2467 millimeters from April 1958. The record of highest 72 hours and 96 hours was made in 2007. The new 48-hour record reaffirms Cherrapunji (also known as Sohra) as one of the wettest places on Earth. Cherrapunji also hold record rainfall for a 12-month (one-year) period, with 26470 mm (86 feet 10 inches) of rain from August 1860 to July 1861.
25. (d) Maharashtra has emerged as the top ranking state in terms of the overall Internet readiness index, report published by the Internet & Mobile Association of India.
26. (d) All of the above statements are correct.
27. (c) Union Ministry of Railways & Ministry of Enterprise & Innovation of Sweden have inked a MoU on Technical cooperation in Rail Sector.
28. (d) West Indies for the first time has won the ICC U-19 Cricket World Cup by defeating India by 5 wickets played at Mirpur (Bangladesh).
29. (d) Blood cells freshly made in the laboratory are likely to have a longer lifespan than those taken from donors, which typically last no more than 120 days. Trial test would aim to produce relatively rare O rhesus negative blood that can safely be given to 95% of the population, and the skin cell donors will have to belong to this blood group. The blood cells will be created from ordinary donated skin cells called fibroblasts which are genetically reprogrammed into a stem cell-like state.
30. (c) The real benchmarking of the government policy on decentralisation can be attributed to Lord Ripon who, in his famous resolution on local self-government on May 18, 1882, recognised the twin considerations of local government: (i) administrative efficiency and (ii) political education. The Ripon Resolution, which focused on towns, provided for local bodies consisting of a large majority of elected non-official members and presided over by a non-official chairperson
31. (d) Diphtheria, leprosy, plague are bacterial diseases. AIDS, polio, pneumonia, gonorrhoea, syphilis are viral diseases. Japanese B encephalitis are protozoan diseases. Colour blindness and haemophilia are sex-linked diseases. Sickle cell anaemia is a genetic disease in which RBC became sickle-shaped.
32. (d) Born in the Shakya republic in the Himalayan foothills Gautama Buddha taught primarily in northeastern India. Buddha means "awakened one" or "the enlightened one." "Buddha" is also used as a title for the first awakened being in an era.
33. (b) Peninsular plateau is the largest of India's physical divisions. It is the oldest and is formed of hard rocks. The Narmada rift valley divides the peninsular plateau into two parts. They are the Malwa plateau and the Deccan plateau.
34. (c) Under Samudra Gupta several northern kings were uprooted, however, and their territories added to the Gupta empire. At the height of Samudra Gupta's power, he controlled nearly all of the valley of the Ganges (Ganga) river and received homage from rulers of parts of east Bengal, Assam, Nepal, the eastern part of the Punjab, and various tribes of Rajasthan. He exterminated 9 monarchs and subjugated 12 others in his campaigns.
35. (d) The coins bearing the epithets, like Parakramah (valour), Kritanta-Parashu (deadly battle-axe), Vyaghra Parakramah (valorous tiger), prove his being a skilful warrior. Samudragupta's Asvamedha type of coins commemorate the Ashvamedha sacrifices he performed and signify his many victories and supremacy.
36. (d) Greenhouse gases are those that can absorb and emit infrared radiation, but not radiation in or near the visible spectrum. Atmospheric concentrations of greenhouse gases are determined by the balance between sources (emissions of the gas from human activities and natural systems) and sinks (the removal of the gas from the atmosphere by conversion to a different chemical compound).
37. (d) The Western Chalukya Empire was created by the descendants of the Badami Chalukya clan and ruled from 973–1195 CE. Their capital was Kalyani, present day Basava Kalyana in Karnataka. They came to power at the decline of the Rashtrakutas. They ruled from the Kaveri in the South to Gujarat in the north. The empire reached its peak under Vikramaditya VI.
38. (d) They continued to rule until the 10th century as feudatories of Rashtrakutas and Chalukyas. They rose from the region after the fall of the Satavahana empire and created a kingdom for themselves in Gangavadi (south Karnataka) while the Kadambas, their contemporaries, did the same in north Karnataka.
39. (b) The Kakori Revolution Conspiracy was a train robbery that took place between Kakori and Almora near Lucknow, on 9 August 1925 during the Indian Independence Movement against the British Indian Government. The robbery was organised by the Hindustan Republican Association. The robbery was conceived by Ram Prasad Bismil and Ashfaqullah Khan who belonged to the Hindustan Republican Association (HRA), which became later the Hindustan Socialist Republican Association. This organisation was established to carryout revolutionary activities.

40. (d) The Rashtrakutas were responsible for building some of the beautiful rock-cut temples of Ellora including the Kailasa temple. Kannada language literature flourished during this period of Adikavi Pampa, Sri Ponna and Shivakotiacharya. King Amoghavarsha I wrote the earliest extant Kannada classic Kavirajamarga.
41. (d) Ocean water is important for salt production and providing habitat for deep water fishes. There are biodiversity of marine species in the sea where nutrient cycles are common. Natural resources occur naturally within environments that exist relatively undisturbed by humanity, in a natural form.
42. (d) Some natural resources, such as sunlight and air can be found everywhere, and are known as ubiquitous resources. However, most resources only occur in small sporadic areas, and are referred to as localized resources. There are very few resources that are considered inexhaustible (will not run out in foreseeable future) – these are solar radiation, geothermal energy, and air (though access to clean air may not be). The vast majority of resources are exhaustible, which means they have a finite quantity, and can be depleted, if managed improperly.
43. (d) Though the above mentioned resources are technically non-renewable, just like with rocks and sand, humans could never deplete the world's supply. In this respect, metal ores are considered vastly greater in supply to fossil fuels because metal ores are formed by crustal scale processes which make up a much larger portion of the earth's near-surface environment than those that form fossil fuels, which are limited to areas where carbon-based life forms flourish, die, and are quickly buried.
44. (a) NTPC Limited (formerly known as National Thermal Power Corporation Limited) is a Central Public Sector Undertaking (CPSU) under the Ministry of Power, Government of India, engaged in the business of generation of electricity and allied activities. NTPC's core business is generation and sale of electricity to state-owned power distribution companies and state electricity boards in India. National Thermal Power Corporation is diversified into the hydro projects. Presently it has undertaken Koldem project in Himachal Pradesh.
45. (d) At present, the main energy source used by humans is non-renewable fossil fuels. Since the dawn of internal combustion engine technologies in the 17th century, petroleum and other fossil fuels have remained in continual demand. As a result, conventional infrastructure and transport systems, which are fitted to combustion engines, remain prominent throughout the globe.
46. (d) Radio contaminants in the environment can enter the food chain and become bio-accumulated. Internal or external exposure can cause mutagenic DNA breakage producing teratogenic generational birth defects, cancers and other damage.
47. (b) This mined uranium is used to fuel energy-generating nuclear reactors with fissionable uranium-235 which generates heat that is ultimately used to power turbines to generate electricity.
48. (c) Damodar Valley Corporation is a thermal and hydro power generating public organization of India headquartered in the city of Kolkata, West Bengal, India.
49. (d) An unregulated industry practice or method can lead to a complete resource depletion. The renewable energies from the sun, wind, wave, biomass and geothermal energies are based on renewable resources. Renewable resources, such as the movement of water (hydropower, tidal power and wave power), wind and radiant energy from geothermal heat (used for geothermal power) and solar energy (used for solar power), are practically infinite and cannot be depleted, unlike their non-renewable counterparts, which are likely to run out, if not used sparingly.
50. (c) Solar currently supplies only 0.1% of our world energy needs, but there is enough out there to power humanity's needs 4,000 times over, the entire global projected energy demand by 2050. Renewable energy and energy efficiency are no longer niche sectors that are promoted only by governments and environmentalists.
51. (a) The Mohs scale of mineral hardness is based on the ability of one natural sample of matter to scratch another mineral. The samples of matter used by Mohs are all different minerals. Minerals are pure substances found in nature.
52. (d)
53. (d) In architecture, the Malwa style is essentially accurate. Some of its features are the skilful and elegant use of arc1 with pillar and beam, lofty terraces approached by well proportioned stairways, impressive and dignified size of buildings and their fine masonry, frequent use of dom cupolas round a central dome and restrained ornamentation with pleasing colour decoration. The minaret is absent' this style. Some famous monuments of this style are Ashr Mahal, Hindola Mahal, Jahaz Mahal, Baz Bahadur's Palac, the Nilkanth Palace and Kaliadeh Mahal.
54. (b) The gross national income (GNI) is the total domestic and foreign output claimed by residents of a country, consisting of gross domestic product (GDP) plus factor incomes earned by foreign residents, minus income earned in the domestic economy by non-residents. The GNI is similar to the gross national product (GNP), except that in measuring the GNP one does not deduct the indirect business taxes.
55. (a) South India remains in the Mesolithic until 2500 BCE. Microlith production is attested for the period 6000 to 3000 BCE. The Neolithic period lasts from 2500 BCE to 1000 BCE, followed by the Iron Age, characterized by megalithic burials. Comparative excavations carried out in Adichanallur in Thirunelveli district and in Northern India have provided evidence of a southward migration of the Megalithic culture. The Krishna Tungabhadra Valley is also a place for Megalithic culture in South India.
56. (d) The "classic period" of the Mughal empire started in 1556 with the ascension of Akbar the Great to the throne. Under the rule of Akbar and his son Jahangir, India enjoyed economic progress as well as religious harmony, and the monarchs were interested in local religious and cultural traditions.

57. (d) The Big Bang offers a comprehensive explanation for a broad range of observed phenomena, including the abundance of light elements, the cosmic microwave background, large scale structure, and the Hubble diagram. The core ideas of the Big Bang—the expansion, the early hot state, the formation of light elements, and the formation of galaxies—are derived from these and other observations.
58. (d) Babur's son Humayun succeeded him in 1530, but suffered reversals at the hands of the Pashtun Sher Shah Suri and lost most of the fledgling empire before it could grow beyond a minor regional state.
59. (d) The Mughal dynasty was founded when Babur, hailing from Ferghana (Modern Uzbekistan), invaded parts of northern India and defeated Ibrahim Shah Lodhi, the ruler of Delhi, at the First Battle of Panipat in 1526. The Mughal Empire superseded the Delhi Sultanate as rulers of northern India. In time, the state thus founded by Babur far exceeded the bounds of the Delhi Sultanate, eventually encompassing a major portion of India and earning the appellation of Empire.
60. (b) A trend of decreasing electron affinity going down the groups in the periodic table would be expected. The additional electron will be entering in an orbital farther away from the nucleus, and thus would experience a lesser effective nuclear charge. It is fairly obvious that the atoms get bigger as you go down group with the increase in atomic number. The reason is equally obvious you are adding extra layers of electrons.
61. (a) This is the first ever petro-chemical project in the entire North-East.
62. (a) The Large Magellanic Cloud (LMC) is a nearby galaxy, and a satellite of the Milky Way. At a distance of slightly less than 50 kiloparsecs ($\approx 163,000$ light-years), the LMC is the third closest galaxy to the Milky Way, with the Sagittarius Dwarf Spheroidal (~ 16 kiloparsecs) and the putative Canis Major Dwarf Galaxy (~ 12.9 kiloparsecs, though its status as a galaxy is under dispute) lying closer to the centre of the Milky Way.
63. (d) After the death of the Mughal Emperor Aurangzeb, the empire expanded greatly under the rule of the Peshwas. The empire at its peak stretched from Tamil Nadu in the south, to Peshawar (modern-day Pakistan) on the Afghanistan border in the north, and Bengal and Andaman Islands in east.
64. (d) In 1758, the Marathas started their north-west conquest and expanded their boundary till Afghanistan. They defeated Afghan forces in what is now Pakistan as well as Kashmir. The Marathas massacred and looted thousands of Afghan soldiers and captured Lahore, Multan, Dera Ghazi Khan, Attock, Peshawar in the Punjab region and Kashmir.
65. (c) Electronic spamming is the use of electronic messaging systems to send unsolicited bulk messages (spam), especially advertising, indiscriminately. While the most widely recognized form of spam is e-mail spam, the term is applied to similar abuses in other media: instant messaging spam, Usenet newsgroup spam, Web search engine spam, spam in blogs, wiki spam, online classified ads spam, mobile phone messaging spam, Internet forum spam, junk fax transmissions, social spam, television advertising and file sharing spam. It is named after Spam, a luncheon meat, by way of a Monty Python sketch in which Spam is included in every dish.
66. (b) The Bhabha Atomic Research Centre (BARC); Bhābhā Paramānu Anusandhān Kendra) is India's premier nuclear research facility based in Trombay, Mumbai. BARC is a multi-disciplinary research centre with extensive infrastructure for advanced research and development covering the entire spectrum of nuclear science, engineering and related areas. BARC's core mandate is to sustain peaceful applications of nuclear energy, primarily for power generation. It manages all facets of nuclear power generation, from theoretical design of reactors, computerised modelling and simulation, risk analysis, development and testing of new reactor fuel materials, etc. It also conducts research in spent fuel processing, and safe disposal of nuclear waste. Its other research focus areas are applications for isotopes in industries, medicine, agriculture, etc. BARC operates a number of research reactors across the country.
67. (c) Vishakhadatta was an Indian Sanskrit poet and playwright. Although Vishakhadatta furnishes the names of his father and grandfather as Maharaja Bhaskaradatta and Maharaja Vateshvaradatta in his political drama Mudrārākhasa, we know little else about him. Only two of his plays, the Mudrārākhasa and the Devichandraguptam are known to us.
68. (d) The Arthashastra is an ancient Indian treatise on statecraft, economic policy and military strategy, written in Sanskrit. It identifies its author by the names 'Kautilya' and 'Vishnugupta', both names that are traditionally identified with Chānakya (c. 350–283 BC), who was a scholar at Takshashila and the teacher and guardian of Emperor Chandragupta Maurya, founder of the Mauryan Empire. The text was influential until the 12th century, when it disappeared. It was rediscovered in 1904 by R. Shamastry, who published it in 1909. The first English translation was published in 1915.
69. (a) Badami, formerly known as Vatapi, is a town and headquarters of a Taluk by the same name, in the Bagalkot district of Karnataka, India. It was the regal capital of the Badami Chalukyas from 540 to 757 AD.
70. (d) Kanhoji Angre was admiral of the Western coast of India from Bombay to Vingoria (now Vengurla) in the present day state of Maharashtra, except for Janjira which was affiliated with the Mughal Empire. He attacked English, Dutch and Portuguese ships which were moving to and from East Indies.
71. (c) Synthetic detergents are sodium salt of long chain sulphonic acid or alkyl hydrogen sulphate. Hardness in water is due to presence of chlorides, sulphates and nitrates salts of calcium and magnesium. Now detergents are capable of forming soluble salts even with the calcium and magnesium ions present in hard water and forms lather easily in hard water.
72. (d) Asokan stone pillars were meant to spread his Dhamma (not the part of architectural structure.) Dhamma in Buddhism can have the following meanings: The state of Nature as it is (yathā bhūta) The Laws of Nature considered both collectively and individually. The teaching of the Buddha as an exposition of the

- Natural Law applied to the problem of human suffering. A phenomenon and/or its properties.
73. (d) Vasco-de-Gama established a factory at Cochin in 1502. He was followed by Alfonso de Albuquerque in 1503. In 1505, the Portuguese decided to appoint a governor to look after their Indian affairs. Francisco de Almeida became the first governor. Albuquerque succeeded him in 1509. Albuquerque was the real founder of the Portuguese empire in the east.
74. (c) The main feature of the Dutch trade in India and South East Asia was their conflict with the Portuguese and the English merchants. Their rivalry with the English was influenced by two motives, first, to take advantage against the Portuguese who were the allies of the Spain, the enemy of the Portuguese, their first object was fulfilled and their second objective brought them in continued hostility with the English.
75. (d) The Kharosthi script is an ancient script used by the ancient Gandhara culture of South Asia primarily in modern-day Afghanistan and Pakistan to write the Gāndhārī language (a dialect of Prakrit) and the Sanskrit language. An alphasyllabary, it was in use from the middle of the 3rd century BCE until it died out in its homeland around the 3rd century CE.
76. (d) In 1693, the newly built French factory at Pondicherry was captured by the Dutch but by the Treaty of Ryswick between the European powers, there was restoration of mutual conquests and the Dutch returned Pondicherry to the French in 1697. During the first quarter of the eighteenth century, however, the French Company suffered serious setback for lack of resources and the factories at Surat, Masulipatam and Bantam had to be abandoned. This condition of the French Company continued till 1720.
77. (d) This company is commonly known as the English East India Company. For a few years, the English East India Company confined its activities to the spice trade with Java, Sumatra and the Moluccas. But in 1608, Captain William Hawkins came to the court of Jehangir with a letter from James I, king of England, requesting permission for the English merchants to establish in India.
78. (b) Both the statements are correct.
79. (c) The Katha Upanishad (Kathopanisad, also Kāthaka), also titled "Death as Teacher", is one of the Mukhya (primary) Upanishads commented upon by Shankara and Madhva. It is associated with the Cāraka-Katha school of the Black Yajurveda, and is grouped with the Sutra period of Vedic Sanskrit. It is a middle Upanishad. It contains passages that suggest contact with Buddhist ideas, so was likely composed after the fifth century BCE.
80. (d) An increase in food production, especially in underdeveloped and developing nations, through the introduction of high-yield crop varieties and application of modern agricultural techniques. The introduction of high-yielding varieties of seeds and the increased use of chemical fertilizers and irrigation are known collectively as the Green Revolution, which provided the increase in production needed to make India self-sufficient in food grains, thus improving agriculture in India.
81. (a) The system will be complete with police officials being equipped with Personal Digital Assistant (PDA) devices connected to a central processor, which stores records of more than two lakh criminals.
82. (c) Geomorphologists seek to understand why landscapes look the way they do, to understand landform history and dynamics and to predict changes through a combination of field observations, physical experiments and numerical modelling. Geomorphology is the study of landscapes. It entails the systematic description of landforms and the analysis of the processes that create them.
83. (c) Avalokiteśvara is a bodhisattva who embodies the compassion of all Buddhas. Portrayed in different cultures as either male or female. Avalokiteśvara is one of the more widely revered Bodhisattvas in mainstream Mahayana Buddhism, as well as unofficially in Theravada Buddhism. The original name for this Bodhisattva was Avalokitasvara.
84. (d) Landscape is the combined effect of numerous landforms, such as mountainous or desert terrain. In the long term, the above mentioned factors control structure, lithology, and process, the three dependent variables that landscapes reflect most closely. A common way of viewing landscape variables is outlined below as the interplay between energy, process, and resisting framework.
85. (d) Different landforms on the earth crust are caused by both endogenetic and exogenetic forces. Geologic processes include the uplift of mountain ranges, the growth of volcanoes, isostatic changes in land surface elevation and the formation of deep sedimentary basins where the surface of earth drops and is filled with material eroded from other parts of the landscape.
86. (d) The forces, which affect crust of the earth, are divided into two broad categories on the basis of their sources of origin, they are endogenetic and exogenetic forces. The endogenetic forces (diastroph forces, volcanic eruption, earthquake etc.) give rise to several vertical irregularities, which lead to the formation of numerous varieties of relief features on the earth surface (e.g. plateau, mountain, plain, lakes, faults, folds, etc).
87. (d) A manigramam is a large, influential guild of South Indian merchants. Tamil inscriptions record a tank construction by an important person and the tank is placed under the guard of the local Manigramam members. Manigramam guild was a localized merchant body which first appeared along the Kerala coast in the ninth century AD and gradually flourished in Tamil Nadu in the Pallava and Chola periods and then became supra-regional in character by being active in south-east Asia. On a Sivapuri temple wall, Tiruppattur Taluk, Ramanathapuram district, an inscription records the gift of some land by a merchant of the Manigramam guild for providing an offering to the temple deity.
88. (d) Especially during the Battle of Britain in 1940, Gandhi resisted calls for massive civil disobedience movements that came from within as well as outside his party, stating he did not seek India's independence out of the ashes of a destroyed Britain. In 1942, the Congress launched the Quit India movement. There was some

- violence but the Raj cracked down and arrested tens of thousands of Congress leaders, including all the main national and provincial figures. They were not released until the end of the war was in sight in 1945.
98. (d) All the other major parties rejected the Quit India plan, and most cooperated closely with the British, as did the princely states, the civil service and the police. The Muslim League supported the Raj and grew rapidly in membership, and in influence with the British. The entry of India into the war was strongly opposed by Subhas Chandra Bose, who had been elected President of the Congress in 1938 and 1939, but later removed from the presidency and expelled from the organization. Bose then founded the All India Forward Bloc.
99. (a) To force the British Raj to meet its demands and to obtain definitive word on total independence, the Congress took the decision to launch the Quit India Movement.
100. (c) However, almost the entire Congress leadership, and not merely at the national level, was put into confinement less than 24 hours after Gandhi's speech, and the greater number of the Congress khilans were to spend the rest of the war in jail.
101. (d) Barium and strontium are alkaline earth metals. They are quite reactive in nature, they do not occur in free state. Strontium is a relatively abundant element in the Earth's crust. The most common minerals containing strontium are celestine and strontianite.
102. (d) The Royal Indian Navy mutiny (also called the Bombay Mutiny) encompasses a total strike and subsequent mutiny by Indian sailors of the Royal Indian Navy on board ship and shore establishments at Bombay (Mumbai) harbour on 18 February 1946. From the initial flashpoint in Bombay, the mutiny spread and found support throughout British India, from Karachi to Calcutta and ultimately came to involve 78 ships, 20 shore establishments and 20,000 sailors.
103. (d) Patel took on the responsibility of bringing into the Indian Union 565 princely states, steering efforts by his "iron fist in a velvet glove" policies, exemplified by the use of military force to integrate Junagadh and Hyderabad state into India (Operation Polo). On the other hand, Pandit Jawahar Lal Nehru kept the issue of Kashmir in his hands.
104. (d) Following Independence in 1947, India remained in the Commonwealth of Nations, and relations between the UK and India have been friendly. There are many areas in which the two countries seek stronger ties for mutual benefit, and there are also strong cultural and social ties between the two nations.
105. (c) Glaciers are also depositional because their movement pushes rocks and other debris into new areas. The sediment created by the grinding down of rocks by glaciers is called glacial rock flour. As glaciers melt, they also drop their debris creating features, like eskers and moraines.
106. (d) Although there is a general movement of material from uplands to lowlands, erosion, transport, and deposition often occur in closely spaced tandem all across the landscape. The nature of the processes investigated by geomorphologists is strongly dependent on the landscape or landform under investigation and the time and length scales of interest.
107. (d) The above mentioned ridges divide the Indian Ocean into three distinct parts: (i) African part, (ii) Australian part, and (iii) the part adjoining the continent of Antarctica. Each one of these parts is further subdivided into a number of basins by ridges and submarine mountain chains, namely, Comoro and North Australian Basin extending up to 320 km. South Indian Basin and Australian- Antarctic Basin extend up to 9000 km. The Arab Basin is surrounded on all sides by ridges.
108. (b) Buddhacharita is an epic poem in the Sanskrit Mahakavya style on the life of Gautama Buddha by Aśvagho, composed in the early second century CE. Of the poem's 28 cantos, the first 14 are extant in Sanskrit complete (cantos 15 to 28 are in incomplete form). In 420, made a Chinese translation, and in the 7th or 8th century, a Tibetan version was made which "appears to be much closer to the original Sanskrit than the Chinese".
109. (d) They are most commonly found at shallow depths in tropical waters, but deep water and cold water corals also exist on smaller scales in other areas. Coral reefs deliver ecosystem services to tourism, fisheries and shoreline protection. The annual global economic value of coral reefs is estimated between US \$29.8–375 billion. However, coral reefs are fragile ecosystems, partly because they are very sensitive to water temperature. They are under threat from climate change, oceanic acidification, blast fishing, cyanide fishing for aquarium fish, overuse of reef resources, and harmful land-use practices, including urban and agricultural runoff and water pollution, which can harm reefs by encouraging excess algal growth.

PRACTICE SET - 2

Max. Marks : 200

Time : 2 hrs.

Directions (Qs. 1-7) : Read the following passages and answer the questions that follow. Your answer to these question should be based on.

PASSAGE-1

Surveys conducted in many of our primary schools reveal the enormous heterogeneity of the linguistic and cultural background of the children, contrary to the belief that they all come from Hindi-speaking backgrounds.

1. In the given context, the enormous heterogeneity of the linguistic and cultural background of the children implies that these children:
 - (a) speak different languages
 - (b) come from various states
 - (c) belong to different classes of society
 - (d) come from different cultural backgrounds

PASSAGE-2

In order to boost sales of toys at times other than the peak sale time – Christmas – manufacturers use many techniques-Character toys from movies or TV serials are promoted and all sets are ‘collectible’ by their young purchasers. Collections, however, never appear to be complete, because as soon as all the characters are acquired, the child then requires the ‘car’, the ‘phone’, the ‘mobile phone’, and even the ‘aeroplane’ to ensure a happy environment for the toys. Ultimately, the elusive final piece of the series is attained just as the manufacturer and promoter release the next series of ‘collectibles’.

2. The prime aim of the manufacturer and promoter is to ensure that :
 - (a) all children should be happy and no child can be happy without a complete series of toys.
 - (b) as soon as one set is complete or almost complete, then the next one arrives on the scene.
 - (c) Children should be encouraged to complete their collections of toys.
 - (d) sales need to be bolstered throughout the year

PASSAGE-3

Aspiration is nothing new. Neither is the debate over what the Indian middle class is, what it wants and what it buys. Since the mid - 80s, that has been the focus of the economic policy papers, so called pro and anti-poor budgets and marketing strategies that have successfully broken the barrier of urban selling and reached deeper into rural India with increasing income levels and aspirations.

3. Based on the above passage it can be inferred that
 - (a) The Indian middle class has been the focus of economic policies for a long time.
 - (b) The Indian middle class has graduated from being the ‘deprived’ middle class to the ‘pampered’ middle class
 - (c) Both (a) and (b)
 - (d) Neither (a) nor (b)

PASSAGE-4

Well, we cannot restrict meaning of life to our limited power of imagination, as life even exists there where we have no reach, even beyond the level of our imagination, even beyond the reach of modern science and scientists. Our knowledge is limited, we do not know everything about our surrounding, we do not know even about things we have with us or even about our own self.

4. Which of the following logically follows the argument given above?
 - (a) Given our limited understanding and abstruse circumstances it is not possible to give a universal definition of life, its meaning and its purpose.
 - (b) Our individual meaning of life is unique, even if we are not aware or have identified ways to express it.
 - (c) There are so many things that life consists of and hence meaning of life often changes from time to time.
 - (d) ‘Meaning’ is a creation of the mind and it is not ‘meaning’ which is foundation of life.

PASSAGE-5

Malnutrition most commonly occurs between the ages of six months and two years. This happens despite the child’s food requirements being less than that of an older child. Malnutrition is often attributed to poverty, but it has been found that even in households where adults eat adequate quantities of food, more than 50 per cent of children-under-five do not consume enough food. The child’s dependence on someone else to feed him/her is primarily responsible for the malnutrition. Very often the mother is working and the responsibility of feeding the young child is left to an older sibling. It is therefore crucial to increase awareness regarding the child’s food needs and how to satisfy them.

5. According to the author, poverty is not the main cause of malnutrition, but the fact that
 1. taking care of younger ones is not a priority for working mothers.
 2. awareness of nutritional needs is not propagated by the Public Health authorities.

Select the correct answer using the codes given below:

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

PASSAGE-6

6. Our school district should not spend its money on the new Verbal Advantage reading program. After all, our students get all the reading practice they need by studying history and science.

The argument above depends on which of the following assumptions?

- (a) The Verbal Advantage program would not help the students learn history and science.
- (b) Other reading programs are just as effective but less expensive than the Verbal Advantage program.
- (c) The Verbal Advantage program involves only reading practice.
- (d) Teaching students history and science is more important than teaching them reading skills.

PASSAGE-7

All good athletes want to win and all athletes who want to win, eat a well-balanced diet; therefore, all athletes who do not eat a well-balanced diet are bad athletes.

7. If assumptions of the argument above are true, then which of the following statements must be true?
 - (a) No athlete who does not eat a well-balanced diet is a good athlete.
 - (b) No bad athlete wants to win.
 - (c) Every athlete who eats a well-balanced diet is a good athlete.
 - (d) All athletes who want to win are good athletes.
8. Which of the following, if true, would refute the assumptions of the arguments above ?
 - (a) Bob, the accountant, eats a well-balanced diet, but he is not a good athlete.
 - (b) Ann wants to win, but she is not a good athlete.
 - (c) All the players on the Burros baseball team eat a well-balanced diet.
 - (d) Cindy, the basketball star, does not eat a well-balanced diet, but she is a good athlete.

Directions (Qs. 9 & 10) : Examine the information given below and answer the questions that follow.

The age in (in years) of each of seven sisters – Deepa, Gaya, Mamta, Neeta, Piya, Rita and Sarita is different and is among 4, 5, 6, 7, 8, 9 and 10. Also,

- I. Rita is one year younger than Sarita.
- II. Gaya is three years older than Deepa.
- III. Piya is neither the youngest nor the eldest and Neeta is younger than Deepa.
- IV. Mamta has as many sisters younger to her as elder to her.
9. Who is the youngest person?
 - (a) Neeta
 - (b) Rita
 - (c) Gaya
 - (d) Deepa
10. Who is the eldest person?
 - (a) Neeta
 - (b) Sarita
 - (c) Rita
 - (d) Gaya
11. There are some coins and rings of either gold or silver in a box. 60% of the objects are coins, 40% of the rings are of gold and 30% of the coins are of silver. What is the percentage of gold articles?
 - (a) 16%
 - (b) 27%
 - (c) 58%
 - (d) 70%

Directions (Q. 12) : Examine the information given below and answer the questions that follow. The letters A, B, C, D, E, F and G, not necessarily in that order, stand for seven consecutive integers from 1 to 10.

- I. D is less than A.
- II. B is the middle term.
- III. F is as much less than B as C is greater than D.
- IV. G is greater than F.

12. The greatest possible value of C is how much greater than the smallest possible value of D?
 - (a) 2
 - (b) 3
 - (c) 4
 - (d) 5
13. Raju was to go to the planetarium. So he walked 1.5 kms towards east from the place and then turned to right and walked 2.5 kms and then turned towards east walked 1 km. and turned to south and walked 4 kms and reached the place by walking 2.5 kms towards west. What distance is he from the starting point ?
 - (a) 6.5 kms
 - (b) 9.5 kms
 - (c) 10 kms
 - (d) 9 kms
14. A car travels along the four sides of a square at speeds v , $2v$, $3v$ and $4v$, respectively. If u is the average speed of the car in its travel around the square, then which one of the following is correct ?
 - (a) $u = 2.25 v$
 - (b) $u = 3 v$
 - (c) $v < u < 2 v$
 - (d) $3 v < u < 4 v$
15. Two vessels are full of milk with milk-water ratio 1 : 3 and 3 : 5 respectively. If both are mixed in the ratio 3 : 2, what is the ratio of milk and water in the new mixture ?
 - (a) 4 : 15
 - (b) 3 : 7
 - (c) 6 : 7
 - (d) 3 : 10
16. Anand and Meenu are husband and wife. They have two daughters Riya and Diya. Riya was born when Meenu was 18 yr. Diya was born when Anand was 27 yr. old. At present, sum of ages of Riya and Diya is equal to Meenu's present age and sum of ages of all the members of the family is 117 yr. Find the present age of Riya?
 - (a) 12 yr
 - (b) 15 yr
 - (c) 18 yr
 - (d) None of these
17. A zookeeper counted the heads of the animals in a zoo and found it is 60. When he counted the legs of the animals he found it is 200. If the zoo had either peacocks or tigers, how many tigers were there in the zoo?
 - (a) 30
 - (b) 45
 - (c) 20
 - (d) 40
18. In a cricket match, the number of runs scored by any team is equal to power of the number of batsmen playing in the team. Six batsmen played in team A and eleven batsmen played in team B. If team A won by 95 runs, then find the runs scored by team A.
 - (a) 216
 - (b) 220
 - (c) 210
 - (d) 230
19. Examine the following statement
 Poverty is increasing because the people, who are deciding how to tackle it, know absolutely nothing about the poor.
 Which of the following courses of action logically follows for pursuing?
 (a) The decision makers should go to the grass root levels.
 (b) The decision makers should come from the poorer sections of the society.
 (c) A new set of decision makers should replace the existing ones.
 (d) All of the above

20. Examine the following statement

Market trends are changing continuously and with increasing competitiveness, the consumer's demands with respect to the prices and quality are gradually increasing.

Assumptions

- The consumers did not care for the prices and quality earlier.
 - Market competitiveness is not favourable for the consumers.
- (a) Only assumption I is implicit
 - (b) Only assumption II is implicit
 - (c) Either assumption I or II is implicit
 - (d) Neither assumption I nor II is implicit

Directions (Qs. 21-28): Read the following passages and answer the questions that follow. Your answer to these questions should be used based on the passages only.

PASSAGE-1

But because the idea of private property has been permitted to override, with its selfishness, the common good of humanity, it does not follow that there are not limits within which that idea can function for the general convenience and advantage.

21. Which of the following is most likely to weaken the argument?
- (a) All the people of the society should progress at an equitable rate and there should be no disparities and private property does bring about a tremendous disparity.
 - (b) One should not strive for the common good of humanity at all, instead one should be concerned with maximising one's own wealth.
 - (c) One should learn from the experiences of former communist nations and should not repeat their mistakes at all.
 - (d) Even prosperous capitalist countries like the USA have their share of social problems.

PASSAGE-2

The benefits of psychotherapy result not only from the advice the therapist gives but also from the supportive relationship offered to the patient by the therapist. Even though this relationship may cost large amounts of money over many years, most patients interpret the therapist's concern for them as genuine and identify this caring relationship as the primary factor in improving their mental health. However, recent studies have found that only eight percent of therapist/patient relationships continue after the patient terminates formal paid visits.

22. Which of the following is in accordance with the ideas contained in the passage? Choose the best option.
- (a) Therapists are equally concerned with money making and their patients well-being.
 - (b) Reading published articles of reputed psychotherapists will hardly be beneficial.
 - (c) Therapists can always treat mental illness without the use of prescription drugs.
 - (d) Therapists who terminate relationship are likely to improve mental health of their patients.

PASSAGE-3

Local communities have often come in conflict with agents trying to exploit resources, at a faster pace for an expanding commercial-industrial economy. More often than not, such agents of resource-intensification are given preferential treatment by the state, through the grant of generous long leases over mineral or fish stocks, for example, of the provision of raw material at an enormously subsidized price. With the injustice so compounded, local communities at the receiving end of this process, have no resource except direct action, resisting both the state and outside exploiters through a variety of protest techniques. These struggles might perhaps be seen as a manifestation of a new kind of class conflict.

23. Choose the options that captures the essence of the passage.

- (a) Preferential treatment given by the state to agents of resource-intensification for an expanding commercial-industrial economy exacerbates injustice to local communities and leads to direct protests from them, resulting in a new type of class conflict.
- (b) The grant of long leases to agents of resource intensification for an expanding commercial industrial economy leads to direct protests from the local community, which sees it as unfair.
- (c) A new kind of class conflict arises from preferential treatment given to agents of resource intensification by the state , which the local community sees as unfair.
- (d) Local communities have no option but to protest against agents of resource- intensification and create a new type of class conflict when they are given raw material at subsidized prices for an expanding commercial-industrial economy.

PASSAGE-4

Ecological research over the last quarter of the century has established the deleterious effects of habitat fragmentation due to mining, highways and such other intrusions on forests. When a large block of forests gets fragmented into smaller bits, the edges of all these bits come into contact with human activities resulting in the degradation of the entire forests. Continuity of forested landscapes and corridors gets disrupted affecting several extinction-prone species of wildlife. Habitat fragmentation is therefore considered as the most serious threat to biodiversity conservation. Ad hoc grants of forest lands to mining companies coupled with rampant illegal mining is aggravating this threat.

24. What is the central focus of this passage ?
- (a) Illegal mining in forests
 - (b) Extinction of wildlife
 - (c) Conservation of nature
 - (d) Disruption of habitat
25. What is the purpose of maintaining the continuity of forested landscapes and corridors?
1. Preservation of biodiversity.
 2. Management of mineral resources.
 3. Grant of forest lands for human activities.

Select the correct answer using the codes given below.

- | | |
|-------------|----------------|
| (a) 1 only | (b) 1 and 2 |
| (c) 2 and 3 | (d) 1, 2 and 3 |

PASSAGE-5

India's sub standard performance in the farm sector are inadequate since India is placed favourably when compared to China in terms of quantity and quality of arable land, average farm size and farm mechanization. The reasons for China having out performed India are technological improvements accruing from research and development, investment in rural infrastructure research and an increasingly liberalized agricultural policy moving away from self-sufficiency to leveraging the competitive advantage with a focus on "efficiency as much as equity." Investment in rural infrastructure, roads, storage facilities, marketing facilities are also crucial but government support in India has mainly been through subsidies, not investment. Subsidies are against the market reforms and distort the market as well as reduce resource efficiency. In contrast, to the large number of applications for registration of new plant varieties in China over the past few years, data reveals that despite India having the largest number of agricultural scientists in the world, India's current research track is abysmal, equivalent to what China achieved in the 1980s.

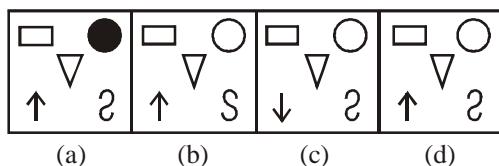
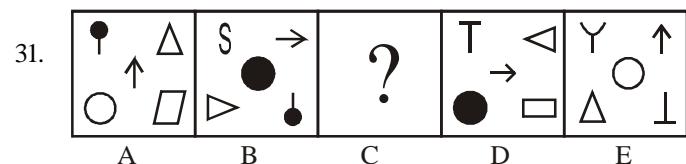
26. Which of the following is/are area/s in which China has outdone India?
 - I. Development of urban infrastructure.
 - II. Activities allied infrastructure.
 - III. Agriculture.
 - (a) Only I
 - (b) I and III
 - (c) All three
 - (d) Only III
27. The advantage that India holds over China with respect to the agricultural sector is
 - (a) lack of diversification of the agricultural sector
 - (b) superior technology and farming practices
 - (c) greater prevalence of farm mechanization
 - (d) abundant research in agriculture
28. What arguments has been posed against implementation of subsidies?
 - I. Subsidies sacrifice equity for efficiency.
 - II. Subsidies hamper efficient resource utilization.
 - III. Subsidies distort the market.
 - (a) I and II
 - (b) Only II
 - (c) II and III
 - (d) Only I
29. To an examination, a candidate needs 40% marks. All questions carry equal marks. A candidate just passed by getting 10 answers correct by attempting 15 of the total questions. How many questions are there in the examination?
 - (a) 25
 - (b) 30
 - (c) 40
 - (d) 45
30. The following table shows the percent change in the amount of sales (in rupees) at different retail stores in a given neighbourhood market in the period 1993 to 1995.

Retail store	Percent change	
	1993 to 1994	1994 to 1995
Anshu	+ 10	- 10
Borna	- 20	+ 9
Calpo	+ 5	+ 12
Dilip - 7	- 15	
Elegant	+ 17	- 8

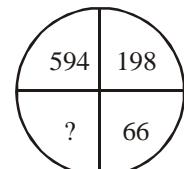
If the sales at Anshu store amounted to ` 8 lakh in 1993, then the amount of sales (in lakh rupees) at that store in 1995 was

- (a) 7.92
- (b) 8.00
- (c) 8.80
- (d) 9.68

Directions (Qs. 31) : In the following question, there is a set of four figures labelled A, B, C, D and E called the Problem Set followed by a set of four other figure labelled a, b, c and d called the Answer Set. Fig (C) contains a question mark. Select a suitable figure from the Answer Set which will substitute this question mark so that a series is formed by the figures A, B, C, D and E taken in order. The number of the selected figure to the answer.



32. What is the missing number on place of "?" in given below ?



- (a) 22
- (b) 33
- (c) 11
- (d) 44

33. What is the missing number 'X' if the series 8, 43, 11, 41, X, 39, 17 ?

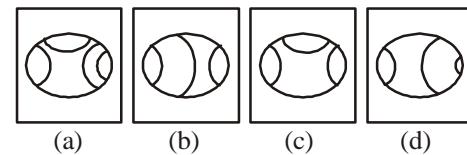
- (a) 12
- (b) 14
- (c) 16
- (d) None of these

34. Among the four answer figures, which figure can be formed from the cut - pieces given below in the question figure ?

Question figure :



Answer figures :



35. 'X' is twice as old as 'Y' 3 years ago, when 'X' was as old as 'Y' today. If the difference between their ages as present is 3 years, how old is 'X' at present?

- (a) 18 years
- (b) 12 years
- (c) 9 years
- (d) 8 years

Directions (Q. 37) : Examine the information given below and answer the question that follow :

A railway station, R, located in India has only two platforms, one for trains going from North to South and other those going from South to North. Details about the six daily trains – Shatabdi, Simadri, Gautami, Godavari, Rajdhani and Ratnachal at 'R' are known. These are the only trains that stop at station R, while going from South to North.

38 Examine the following statement.

Should all the profit making public sector units be sold to private companies?

Four arguments numbered I, II, III and IV are given. On the basis of the information, answer the question.

Arguments

- I. Yes. This will help the government to augment its resources for implementing the development programmes.
 - II. No. The private companies will not be able to run these units effectively.
 - III. Yes. There will be a significant improvement in the quality of services.
 - IV. No. There would not be job security for the employees at all the levels.
 - (a) II and III are strong
 - (b) All are strong
 - (c) III and IV are strong
 - (d) I, II and III are strong

39. Examine the following statement

Some engineers are bureaucrats. Some bureaucrats are honest. All honest persons are truthfull. Which of the following conclusions follow(s) the above statements?

40. Examine the following statement

This book is so prepared that even a layman can study CSAT in the absence of a teacher. Three assumption is implicit in the statement.

Assumptions

- I. A layman wishes to study science without a teacher.
II. A teacher may not always be available to teach science.
III. A layman generally finds it difficult to learn science on its own.

(a) I and II are implicit (b) II and III are implicit
(c) I and III are implicit (d) All are implicit

Directions (Qs. 41-46) : Read the following passages and answer the questions that follow:

PASSAGE-1

Whenever a major airplane accident occurs, there is a dramatic increase in the number of airplane mishaps reported in the media, a phenomenon that may last for as long as a few months after the accident. Airline officials assert that the publicity given the gruesomeness of major airplane accidents focuses media attention on the airline industry, and the increase in the number of reported accidents is caused by an increase in the number of news sources covering airline accidents, not by an increase in the number of accidents.

41. Which of the following if true, would seriously weaken the assertions of the airline officials?

 - (a) Airline accidents tend to occur far more often during certain peak travel months
 - (b) The publicity surrounding airline accidents is largely limited to the country in which the crash occurred
 - (c) News organisations do not have any guidelines to help them decide how severe an accident is
 - (d) Airplane accidents receive coverage by news sources only when the news sources find it advantageous to do so

PASSAGE-2

Various studies have shown that our forested and hilly regions, in general, are as where bloodthirsty as reflected in the variety of flora is high are places where poverty appears to be high. And these same areas are also the ones where educational performance seems to be poor. Therefore, it may be surmised that, even disregarding poverty status, richness in bloodthirstily goes hand in hand with educational backwardness.

42. Which one of the following statements, if true, can be said to best provide supporting evidence for the surmise mentioned in the passage

 - (a) In regions where there is little variety in flora, educational performance is seen to be as good as in regions with high variety in flora, when poverty levels are high.
 - (b) Regions which show high biodiversity also exhibit poor educational performance, at low levels of poverty.
 - (c) Regions which show high bloodthirsty reveal high levels of poverty and poor educational performance.
 - (d) In regions where there is low bloodthirstily, at all levels of poverty, educational performance is seen to be good.

PASSAGE-3

At the turn of the 20th century, a major educational curriculum redesign was initiated following the change of political regime at the centre. The subsequent development of college programme came under wide public scrutiny and debate. Issue of equity, inclusion and exclusion, learner medley religious identity and communalism gained considerable importance in the curriculum debates that followed. The curriculum failed to address the quality of education that students of under privileged and marginalized groups experience. Several critics described the revised curriculum as a retrogressive step in education that sought to impose the religious agenda in the garb of a national identify. The subsequent change of national government in 2004 led to the curriculum review in 2005, underlining a new political interest in the role of education in national development, its role in social transformation and mobilization directed specifically at questions of caste and gender asymmetry and minority empowerment. Deeper than these politically driven minority initiatives, the professional need for curriculum review emerges from the long ossification of a national education system that continues to view faculty as "dispensers of information" and students as "passive recipients" of an "education" sought to be delivered in four-walled classrooms with little scope to develop critical thinking and understanding.

43. Development of text books generated public debate on many issues except.
 - I. Making the curriculum student-centred.
 - II. Using teaching community as an agency to bring change.
 - (a) Only I
 - (b) Only II
 - (c) Both I and II
 - (d) None of these
44. What hampers the critical thinking ability of college going students?
 - (a) Lack of political will to develop these abilities
 - (b) Lack of proper tests of critical thinking ability
 - (c) Absence of focus while designing curriculum framework
 - (d) Ignoring the role of faculty and the students
45. Revamping of the text material was the main focus in
 - (a) early eighties
 - (b) late nineties
 - (c) 21st century
 - (d) evolving curriculum framework
46. Which of the following has been identified by the author as one of the factors to facilitate social transformation?
 - (a) A committed political ideology
 - (b) Support of the well-framed curriculum
 - (c) A strong administration system
 - (d) Carefully planned
47. An accurate clock shows 10 o'clock in the morning. Through how many degrees will the hour hand rotate when the clock shows 2 o'clock in the afternoon?
 - (a) 120
 - (b) 150
 - (c) 90
 - (d) 180
48. A person *P* started a business with a capital of ` 2525 and another person *Q* joined *P* after some months with a capital of ` 1200. Out of the total annual profit of ` 1644, *P*'s share was ` 1212. When did *Q* join as partners ?
 - (a) After 2 months
 - (b) After 3 months
 - (c) After 4 months
 - (d) After 5 months

49. A car travels the first one-third of a certain distance with a speed of 10 km/hr, the next one-third distance with a speed of 20 km/hr and the last one-third distance with a speed of 60 km/hr. The average speed of the car for the whole journey is
 - (a) 18 km/hr
 - (b) 24 km/hr
 - (c) 30 km/hr
 - (d) 36 km/hr
50. A person sold an article for ` 136 and got 15% loss. Had he sold it for ` *x*, he would have got a profit of 15%. Which one of the following is correct?
 - (a) $190 < x < 200$
 - (b) $180 < x < 190$
 - (c) $170 < x < 180$
 - (d) $160 < x < 170$
51. Prabhakar is a state level cricket player. His average runs per wicket were 11.5 and in an inning, he took 5 wickets for 22 runs and his new average became 11 runs per wicket. How many wickets had he taken before this innings?
 - (a) 22
 - (b) 33
 - (c) 66
 - (d) 132
52. Probability that Ram can solve a problem is $1/2$ and the probability that Shyam can solve a problem is $2/3$. If both attempt a question, the probability that the problem is solved is
 - (a) $1/2$
 - (b) $1/6$
 - (c) $2/3$
 - (d) $5/6$
53. In an examination, 52% candidates failed in English and 42% failed in Mathematics. If 17% candidates failed in both English and Mathematics, what percentage of candidates passed in both the subjects?
 - (a) 18%
 - (b) 21%
 - (c) 23%
 - (d) 25%

Directions (Q. 54) : Examine the information given below and answer the question that follow :

There are two married couples in a family of six persons — A, B, C, D, E and F. Each person in the family has different profession among Engineer, Officer, Professor, Chemist, Accountant and Technician. A is an engineer who is married to a lady Professor. B, the officer, is the daughter-in-law of A. C is a Technician and the brother of D. C is also the son of E, who is a Chemist.

54. How is E related to the accountant?
 - (a) Father
 - (b) Son
 - (c) Daughter
 - (d) Cannot be determined
55. In a chess competition involving some boys and girls of a school, every student had to play exactly one game with every other student. It was found that in 45 games both the players were girls and in 190 games both were boys. The number of games in which one player was a boy and the other was a girl is
 - (a) 200
 - (b) 216
 - (c) 235
 - (d) 256
56. There are 6 tasks and 6 persons. Task 1 cannot be assigned either to person 1 or to person 2; task 2 must be assigned to either person 3 or person 4. Every person is to be assigned one task. In how many ways can the assignment be done?
 - (a) 144
 - (b) 180
 - (c) 192
 - (d) 360

Directions (Q. 57) : Examine the information given below and answer the questions that follow:

- I. Kush, Ganesh and Hari are intelligent.
 - II. Kush, Ram and Jivan are hard working.
 - III. Ram, Hari and Jivan are honest.
 - IV. Kush, Ganesh and Jivan are ambitious.
57. Which of the following persons is neither hardworking nor ambitious?
- | | |
|----------|------------|
| (a) Kush | (b) Ganesh |
| (c) Hari | (d) Ram |
58. A vessel is filled with liquid, 4 parts of which are water and 7 parts syrup. How much of the mixture must be drawn off and replaced with water so that the mixture may be half water and half syrup?
- | | |
|-----------|-----------|
| (a) 14/33 | (b) 33/14 |
| (c) 3/14 | (d) 1/11 |
59. A person selling an article for ` 96 finds that his loss per cent is one-fourth of the amount of rupees that he paid for the article. What can be the cost price?
- | | |
|---------------------------|-----------------------------|
| (a) Only ` 160 | (b) Only ` 240 |
| (c) Either ` 160 or ` 240 | (d) Neither ` 160 nor ` 240 |
60. In an examination, 70% of the students passed in the Paper I, and 60% of the students passed in the Paper II. 15% of the students failed in both the papers while 270 students passed in both the papers. What is the total number of students?
- | | |
|---------|---------|
| (a) 600 | (b) 580 |
| (c) 560 | (d) 540 |

Directions (Qs. 61 & 62): Read the following passage and answer the questions that follow the passage. Your answers to these questions should be based on the passage only.

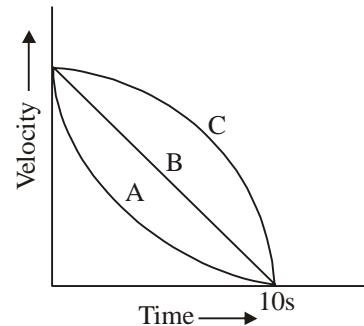
PASSAGE

Successfully adjusting to one's environment leads to happiness. War at a universal level destroys the weaker people, who are the most unable to adjust to their environment. Thus, war at the universal level puts weaklings out of their misery and allows more space for their predators to enjoy life in a better manner. As those actions have to be performed, which maximize the level of happiness of the greatest number, war at a universal level should take place.

61. What response would the author of the above discussion come up with, in the case of the / objection that the weaklings far exceed strong people?
- I. He would respond with the statement that the person making the objection is a weakling.
 - II. He would respond by saying that weaklings will be miserable no matter what happens.
 - III. He would respond with the statement that the strong would be frustrated if the weaklings are destroyed.
- | | |
|--------------|----------------|
| (a) Only I | (b) Only II |
| (c) Only III | (d) II and III |
62. The author's discussion would be greatly influenced if he agreed to which of the following?
- I. Technology could change the environment.
 - II. War at the universal level would be an integral part of the environment.
 - III. It is possible for the strong to survive without suppressing the weak.

63. Many patients suffering from malaria were administered anti-malarial drug for a week. Some of them did not respond to the traditional drug and their condition deteriorated after four days. Which of the following would weaken the findings mentioned in the above statement?
- | |
|--|
| (a) Those patients who responded to the traditional drugs and recovered were needed to be given additional doses as they reported relapse of symptoms. |
| (b) The mosquitoes carrying malaria are found to be resistant to traditional malarial drugs. |
| (c) Majority of the patients suffering from malaria responded well to the traditional malarial drugs and recovered from the illness. |
| (d) Many drug companies have stopped manufacturing traditional malarial drugs. |
64. "Monetary loss can be made good but any loss to the country's culture can never be filled." — A minister of country X
If the above statement is true, then which of the following has been assumed in the statement?
- | |
|---|
| (a) People hanker after money ignoring cultural values. |
| (b) One can't bear monetary loss. |
| (c) Traditional culture in country X is degrading day by day. |
| (d) Preserving culture is our utmost duty. |
65. When income tax rates are reduced, there is an increase in taxable income, and an increase in taxable income results in increased total income tax revenues for the government.
Which of the following is analogous to the argument above in terms of its logical features?
- | |
|--|
| (a) If the city municipal corporation increases taxes on property by 1%, it will raise tax revenues, which can further be used for garbage disposal management. |
| (b) The Leader of the opposition at the Parliament argued that a restriction on the import of Chinese manufacturing products will increase the sales of Indian manufacturing products. |
| (c) An advertisement using more than 25 words of text will not be read, and when an advertisement is not read, the product is not sold. Therefore, the fewer words an advertisement has, the more effective it will be in promoting its product. |
| (d) The balance of payment of a country will improve if the country reduces its imports and increases exports. |
66. A supplement of Vitamin A and Zinc may boost children's resistance to Malaria (Observation from one experiment conducted last year in a village 'X'). Which of the following, if true, would weaken the statement?
- | |
|--|
| (a) No adult in village 'X' has fallen sick because of Malaria. |
| (b) Last three years there is hardly any case of child affected by Malaria from village 'X'. |
| (c) The experiment with Vitamin A and Zinc is being duplicated in other nearby cities adjacent to village 'X'. |
| (d) Vitamin A and Zinc are readily available in village 'X'. |

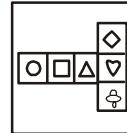
Directions (Q. 73) : Examine the information carefully and answer the question that follow. The graphs below show the velocity of 3 cars- A, B and C changing with time.



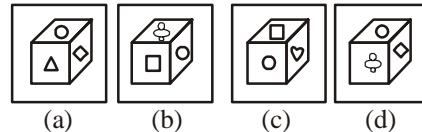
73. Which car will travel the least distance ?
(a) A
(b) B
(c) C
(d) All wil travel equal distance

74. Choose the cube that will be formed by folding the sheet of paper shown in the problam figure.

Question figure :



Answer figures :

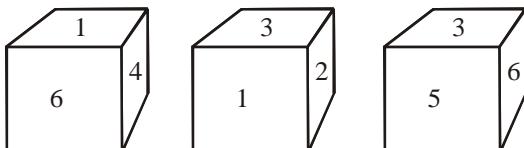


75. Examine the following statement
A large majority of the work force in India is unorganised.
Most of them earn either the minimum or uncertain wages while others are engaged in sundry jobs.
Two conclusions numbered I and II, are given below. You have to assume everything in the statement to be true, then consider the two conclusions together and decide which of them logically follows beyond a reasonable doubt from the information given in the statement.

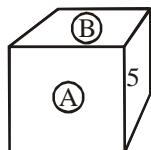
I. The workers in the organised sector get better facilities and stay longer in their jobs.
II. Some workers in the unorganised sector of the work force have a regular and fixed income.

(a) Only conclusion I follows
(b) Only conclusion II follows
(c) Either I or II follows
(d) Both I and II follow

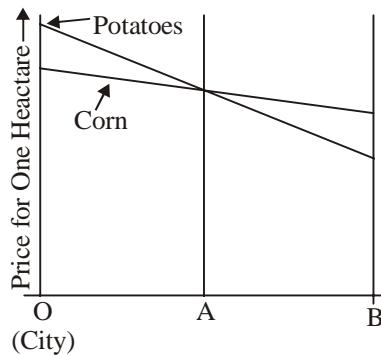
77. A cube has six numbers marked 1, 2, 3, 4, 5 and 6 on its faces. Three views of the cube are shown below:



What possible numbers can exist on the two faces marked **(A)** and **(B)**, respectively on the cube?



78. In the outskirts of a city, two crops corn and potatoes are to be grown. The curve given below represents 'Price earned by farmer for one hectare' on one axis and 'distance from city' on another axis. Which of the following statement / statements is / are correct.



- (a) Potatoes are more profitably grown between O and A
 - (b) Corn is more profitably grown between A and B
 - (c) Potatoes are less beneficial, if grown between A and B
 - (d) All of the above

Directions (Q. 79) : Examine the information and answer the question that follow.

Foods	Percentage of Protein	Percentage of Carbohydrate	Percentage of Fat	Cost per 100 g (in `)
Food A	10	20	30	1.80
Food B	20	15	10	3.00
Food C	20	10	40	2.75

79. If you purchase x gram of Food A, y of Food B and z of Food C, the cost will be

- (a) $\left(\frac{9}{5}x + 3y + \frac{11}{4}z \right)$ paisa

(b) $\sqrt{\left(\frac{9}{5}x + 3y + \frac{11}{4}z \right)}$

(c) $\sqrt{(1.8x + 3z + 2.75y)}$

(d) $(3y + 1.8z + 2.75z)$ paisa

Directions (Q. 80) : Examine the information carefully and answer the questions that follow.

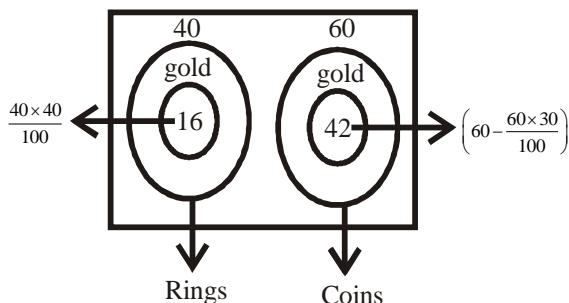
A, B, C, D, E, F, G and H are sitting around a circular table facing the centre. D is the neighbour of A but not of H. B is the neighbour of F and fourth to the left of D. E is the neighbour of H and third to the right of F. C is neither the neighbour of A nor of G.

80. Which of the following is correct?

 - (a) D is to be immediate left of G.
 - (b) A is between C and D.
 - (c) F is fourth to the right of D.
 - (d) None of the above

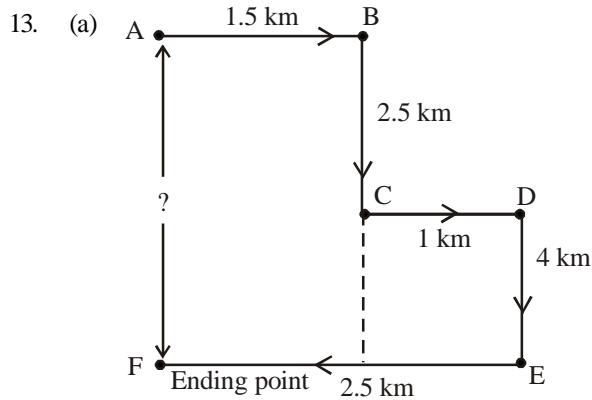
SOLUTIONS

1. (d) Language comes within culture. So cultural difference implies linguistic as well.
2. (d) All players of marketing have one and only aim—sales. Other aims can be part of this ultimate goal.
3. (a) The passage says that since the mid-80s, the focus has been on forming budgets or economic policies by keeping the middle class in mind, thus option (a) clearly seems right. Option (b) states that the middle class was ‘deprived’, but we cannot be certain of that from the information given in the passage. We don’t know the state of the middle class before the mid 80s. Hence, option (a) is correct.
4. (a) Refer to the argument—it deals with the idea of providing the ‘meaning of life’ despite our limited understanding. Hence only option (a) can be a valid conclusion. Option (b) and (d) can be eliminated as they contain elements like ‘uniqueness’ and ‘foundation of life’ which are not discussed in the argument. Option (c) can also be eliminated as it deals with the transient nature of life which is not the core idea.
5. (a) Taking care of a young child is often left to an older sibling by working mothers. Public health authorities do not find a mention in the passage hence (a) is correct.
6. (c) The argument boils down to the following, including the unstated assumption provided by (c):
 Premise : Students get enough reading practice already.
 Unstated assumption (c): The reading program provides only reading practice.
 Conclusion: The reading program is unnecessary.
- (a) is not a necessary assumption. The argument is not concerned with whether improved reading skills would help the students learn history and science. Rather, the argument involves whether the new program would help improve reading skills.
- (b) is not a necessary assumption. The argument is that no additional reading practice is needed, regardless of which program provides that practice.
- (d) is not a necessary assumption. The argument does not aim to compare the importance of one discipline over another.
7. (a) Clearly, (a) is a valid conclusion.
8. (d) Clearly (d) refused the arguments in the statement.
9. (a) Neeta is the youngest of all sisters.
10. (b) Sarita is the eldest of all sisters.
11. (c) Total articles = 100



$$\begin{aligned} \text{Total of gold articles} &= 42 + 16 = 58\% \text{ of gold articles} \\ &= \frac{58}{100} \times 100 = 58\% \end{aligned}$$

12. (d) If the seven integers all fall in the span from 1 to 10, then the highest possible value of C will occur if the seven letters represent the integers from 4–10. In this case, C = 8. The smallest possible value of D will occur. If the seven letters represent the integers from 1 to 7. So, in this case, D = 3 and $(8 - 3) = 5$.

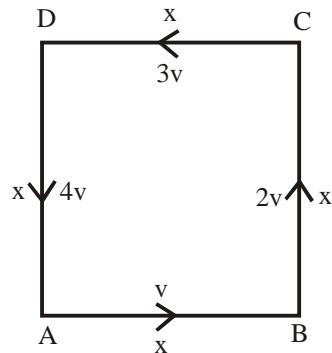


$$AF = DE + CB$$

$$AF = 4 + 2.5$$

$$AF = 6.5 \text{ kms}$$

14. (c) Let side of a square be x .

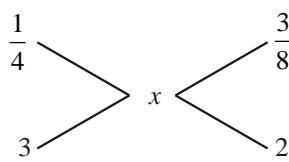


$$\therefore \text{Average speed } (u) = \frac{\text{Total Distance}}{\text{Total Time}}$$

$$= \frac{(x + x + x + x)}{\frac{x}{v} + \frac{x}{2v} + \frac{x}{3v} + \frac{x}{4v}} = \frac{4 \times v}{1 + \frac{1}{2} + \frac{1}{3} + \frac{1}{4}} = \frac{48v}{25} = 1.92v$$

Average speed lies between $v < u < 2v$

15. (d) By alligation method,



$$\therefore \frac{\frac{3}{8} - x}{x - \frac{1}{4}} = \frac{3}{2}$$

$$\Rightarrow \frac{3}{4} - 2x = 3x - \frac{3}{4}$$

$$\Rightarrow 5x = \frac{6}{4} = \frac{3}{2}$$

$$\therefore x = \frac{3}{10}$$

16. (c) Let the present age of Meenu = x

and the present age of Anand = y

$$\therefore \text{Riya's age} = (x - 18)$$

$$\text{and Diya's age} = (y - 27)$$

Sum of ages of Riya and Diya

$$\Rightarrow (x - 18) + (y - 27) = x$$

$$\Rightarrow y = 45$$

$$\therefore \text{Diya's age} = 45 - 27 = 18 \text{ yr}$$

Sum of ages of the members

$$\Rightarrow x + 45 + 18 + (x - 18) = 117$$

$$\Rightarrow 2x = 72$$

$$\Rightarrow x = 36$$

$$\therefore \text{Meenu's age} = 36 \text{ yr}$$

$$\text{and Riya's age} = 36 - 18 = 18 \text{ yr}$$

17. (d) Let the number of tigers be x and the number of peacocks be y, then:

$$x + y = 60 \text{ and } 4x + 2y = 200$$

$$\text{So, } x = 40 \text{ and } y = 20$$

18. (a) Let the power of the terms be x and y.

$$6^x - 11^y = 95$$

Put x = 3, y = 2 (By trial and error)

$$6^3 - 11^2 = 95$$

Hence satisfied.

$$\text{Score of team A} = 63 = 216$$

19. (a) The statement indirectly asserts that the decision makers can work effectively to eliminate poverty, only if they get to know the basic problems afflicting the poor people through interaction with them. So, only (a) follows.

20. (d) The statement talks of 'increasing demands' of consumers. It does not imply that consumers were indifferent to price and quality earlier. So, statement I is not implicit. Besides, the statement I mentions that increasing competitiveness has made available to consumers a wide variety of options which had led suit their requirements and budget. They are thus getting better 'value for their money'. So, statement II is also not implicit.

21. (a) The idea of the passage is that, the idea of private property, within limits, can function for the general advantage. Option (a) would weaken the argument as it talks about equitable growth and says that private property brings disparity.

22. (a) Paragraph is saying that mental illness of patients improve more and more if therapist patient relationship continue which patients interpret good. They don't care much about large amounts they pay to therapists ever many years, as relationships reduce to eight percent after termination of formal paid visits.

23. (c) (c) is the most appropriate option. Option (a) doesn't talk about the expanding commercial-industrial economy. (b) does not explain the effect of the struggles i.e. 'a new conflict', (d) is not correct as it talks specifically only of raw materials for expanding economy. Further it says local communities are creating new type of conflict, which is wrong.

24. (d) The passage revolves around the problem of habitat fragmentation which poses a serious threat to biodiversity conservation.

25. (a) When forest lands get fragmented human activities start on the edges of these fragmented lands which results in degradation of entire forests. Therefore continuity of the forested landscapes and corridors should be maintained.

26. (c) China has outdone India in respect of development of urban infrastructure, activities allied infrastructure and Agriculture.

27. (c) The greater prevalence of farm mechanisation is the advantage that holds India over China.

28. (c) The threat posed against the implementation of subsidies, actually these hamper the efficient resource utilization and the subsidies distort the market.

29. (a) Let the number of questions in examination = x
By given condition, 40% of x = 10

$$\Rightarrow \frac{x \times 40}{100} = 10$$

$$\therefore \frac{1000}{40} = 25$$

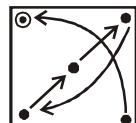
30. (a) If there are two changes of x % and y %,

$$\text{then net change} = x + y + \frac{xy}{100}$$

$$\text{Net change} = 10 - 10 + \frac{(10)(-10)}{100} = -1\%$$

$$\therefore \text{Amount of sales in 1995} = 8 \left(1 - \frac{1}{100}\right) = 7.92$$

31. (d) In each step, the elements move in the sequence



. The triangle rotates 90° CW in each step;

the arrow rotates 90° CW and 90° ACW alternately and the circle changes colour (turns black if initially white and vice versa) in each step. Also, in each step, the element that reaches the lower-right corner gets vertically inverted and the elements that reaches the upper-left corner, gets replaced by a new element.

32. (a) $594 \div 198 = 3$
 $198 \div 66 = 3$
 $66 \div x = 3$
 $x = 22$
33. (b) This is a simple alternating addition and subtraction series. The first series begins with 8 and adds 3; the second begins with 43 and subtracts 2.
34. (d)
35. (c) Let present age of $X = x$ years
Present age of $Y = (x - 3)$ years
3 years ago, age of $X = (x - 3)$ years
Age of $Y = (x - 6)$ years
According to the question,
 $x - 3 = 2(x - 6)$
 $\Rightarrow x - 3 = 2x - 12$
 $\Rightarrow 12 - 3 = 2x - x$
 $x = 9$ years
36. (d) Let total no. of questions be x .
Now, Right questions = 12 = 60% of x .
 $0.6x = 12$
 $x = 20$

Sol. (Q. 37)

From information I and IV, we can deduce that Shatabdi is the first train and Rajdhani is the second train to arrive.

From III, Simadri should be the third or fourth or fifth train to arrive. If Simadri is the third train, then Ratnachal should be the fourth. Fifth and sixth would be either Godavari or Gautami.

But Godavari and Gautami cannot come immediately after one another as both their names start with the same alphabet 'G'. So, Simadri cannot be the third train.

Also, Simadri cannot be the fifth train to arrive as then Ratnachal would be the third trains to arrive as fourth and sixth will be either Godavari or Gautami and both Rajdhani and Ratnachal cannot arrive immediately one after the other.

So, Simadri is the fourth train to arrive and third and fifth are either Godavari or Gautami. Ratnachal is the last train to arrive at Station 'R'.

So, the order is

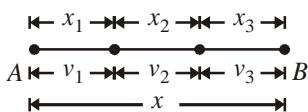
1. Shatabdi
 2. Rajdhani
 3. Godavari / Gautami
 4. Simadri
 5. Gautami / Godavari
 6. Ratnachal
37. (d) Ratnachal is the last train to arrive at the station.
38. (c) The government cannot sell off public sector units just to mop up funds for development. Besides, if it does so, these units shall be handed over to private companies which are fully equipped to run these units effectively. So, neither I nor II holds strong. Privatization shall surely ensure better services, but private companies adopt hire and fire policy and they were free to terminate the services of any employee as and when they wish to. Thus, both III and IV hold strong.
39. (a) All honest persons are truthful + All truthful persons are kind = A + A = All honest person are kind. So, conclusion I follows. Some bureaucrats are honest + All honest persons are truthfull = I + A = I – Some

bureaucrats are truthful + All conclusion II follows. Again, Some bureaucrats are truthful so, + All truthful persons are kind = I + A = I = Some bureaucrats are kind. So, conclusion III follows. Hence, all three follow.

40. (b) Clearly, the statement is made to impress the usefulness of the book. It does not mention the desire of a layman. So, I is not implicit. Also, the book is intended to guide one when a teacher is not available. So, both II and III are implicit.
41. (c) The airline officials asserts that the increase of the number of reported accidents is caused by an increase in the number of new sources covering airline accidents and not by an increase number of accidents. The above assertion weakens if (a) is true. There might be a situation when in some peak travel months lot of accidents have occurred and the media has reported the same because of which the number of reported accidents have increased.
42. (c) is the only correct choice, which can be inferred from the passage that high bloodthirstiness goes hand in hand with poverty and poor educational performance.
43. (c) The passage explicitly talks about the issue of equity, inclusion and exclusion, religious identity in major educational curriculum. This causes a generated public debate. But the passage does not talk about the debate which includes the making curriculum student-centred and using teaching community as an agency to bring change.
44. (c) The passage clearly mentions the absence of focus among students which ultimately hampers the critical thinking ability of students.
45. (c) In the passage it is cleared that the main focus in 21st century is the revamping of the text material in curriculum frame work.
46. (b) Education always plays a prominent role in national development, its role in social transformation and mobilisation. So, the support of well-framed curriculum is one of the factors to facilitate the desired transformation.
47. (a) Angle traced by the hour hand in 12 h = 360°
Angle traced by the hour hand in 4 h = $(360 \times 4)12 = 120$.
48. (b) Let Q join for x month.
 \therefore Ratio of capital = $2525 \times 12 : 1200 \times x$
 $= 2525 : 100x = 101 : 4x$
 $\therefore P$'s profit = $\frac{101}{101+4x} \times 1644$
 $\Rightarrow 1212 = \frac{101 \times 1644}{101+4x}$
 $\Rightarrow \frac{1212}{101 \times 1644} = \frac{1}{101+4x}$
 $\Rightarrow \frac{1}{137} = \frac{1}{101+4x}$
 $\Rightarrow 101+4x = 137 \Rightarrow 4x = 36$
 $\therefore x = 9$
 Q joined for 9 month i.e., he joined after 3 months.

49. (a) Let total distance = x km.

$$\text{Average speed} = \frac{\text{total distance}}{\text{total time}}$$



$$\frac{x}{t_1 + t_2 + t_3} = \frac{x}{\frac{x_1}{v_1} + \frac{x_2}{v_2} + \frac{x_3}{v_3}}$$

$$x_1 = \frac{x}{3}, x_2 = \frac{x}{3}, x_3 = \frac{x}{3}$$

$$= \frac{x}{3 \left(\frac{1}{10} + \frac{1}{20} + \frac{1}{60} \right)}$$

$$= \frac{3}{\left(\frac{6+3+1}{60} \right)} = \frac{3 \times 60}{10} = 18 \text{ km/h}$$

50. (b) Cost Price = $\frac{\text{Selling price}}{1 - \frac{\text{Loss \%}}{100}} = \frac{136}{1 - \frac{15}{100}}$

$$= \frac{136 \times 100}{85} = `160$$

$$\text{Selling price (x)} = \frac{160 \times (100+15)}{100} = \frac{160 \times 115}{100}$$

$$= `184$$

\therefore Hence, option (b) is correct because $180 < x < 190$.

51. (c) Let he had taken x wickets before this inning, then

$$\frac{[11.5(x) + 22]}{(x+5)} = 11$$

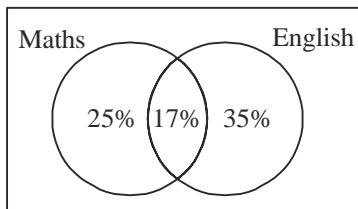
$$\Rightarrow 0.5x = 33$$

$$\Rightarrow x = 66$$

52. (d) There can be three cases: Ram solves and Shyam does not solve OR Ram does not solve and Shyam solves OR Ram solves & Shyam solves.

Hence, the probability that the problem is solved is $(1/2)(1/3) + (1/2)(2/3) + (1/2)(2/3) = 1/6 + 2/6 + 2/6 = 5/6$

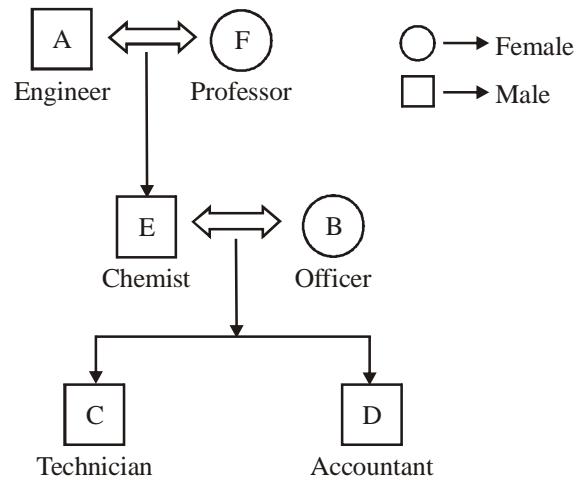
53. (c) Total number of candidates = 100%



Percentage of candidates passed in both the subjects
 $= \{100 - (25 + 17 + 35)\}\% = 23\%$

Sol. (Q. 54)

From the given information, the relation chart is as follows.



54. (a) E is the father of the accountant, D.

55. (a) Let number of girls = x and the number of boys = y
 45 games in which both the players were girls
 $\Rightarrow {}^x C_2 = 45$

$$\frac{x!}{2!(x-2)!} = x(x-1) = 90 \quad \therefore x = 10$$

190 games, where both the players were boys.

$${}^y C_2 = 190 \Rightarrow y(y-1) = 380 \quad \therefore y = 20$$

Hence the total number of games in which one player was a boy and the other was a girl = $10 \times 20 = 200$

56. (a) Task 1 can not be assigned to either person 1 or 2 i.e. there are 4 options.

Task 2 can be assigned to 3 or 4

So, there are only 2 options for task 2.

So required no. of ways = 2 options for task 2 \times 3 options for task 1 \times 4 options for task 3 \times 3 options for task 4 \times 2 options for task 5 \times 1 option for task 6.
 $= 2 \times 3 \times 4 \times 3 \times 2 \times 1 = 144$

Solutions (Q. 57)

Name/Qualities	Kush	Ganesh	Hari	Ram	Jivan
Intelligent	✓	✓	✓	-	-
Hardworking	✓	-	-	✓	✓
Honest	-	-	✓	✓	✓
Ambitious	✓	✓	-	-	✓

57. (c) Hari is neither hardworking nor ambitious.

58. (c) Suppose the vessel initially contains 11 L of liquid. Let, x L of this liquid be replaced with water.

$$\text{Quantity of water in new mixture} = \left(4 - \frac{4x}{11} + x \right) \text{L}$$

$$\text{Quantity of syrup in new mixture} = \left(7 - \frac{7x}{11} \right) \text{L}$$

$$4 - \frac{4x}{11} + x = 7 - \frac{7x}{11}$$

$$\Rightarrow \frac{14x}{11} = 3$$

$$\Rightarrow x = \frac{33}{14}$$

$$\text{So, part of the mixture replaced} = \left(\frac{33}{14} \times \frac{1}{11} \right) = \frac{3}{14}$$

59. (c) Let the cost price of an article = ` x

Selling price of an article = ` 96

According to the question,

$$\begin{aligned} \frac{x-96}{x} \times 100 &= \frac{1}{4} \times 100 \\ \Rightarrow x^2 - 400x + 38400 &= 0 \\ \Rightarrow x^2 - 160x - 240x + 38400 &= 0 \\ \Rightarrow x(x-160) - 240(x-160) &= 0 \\ \Rightarrow (x-160)(x-240) &= 0 \\ \therefore x &= 160 \text{ or } 240 \end{aligned}$$

Hence, the cost price of an article is ` 160 or ` 240.

60. (a) % of students failed in paper I = $100 - 70 = 30\%$
 % of students failed in paper II = $100 - 60 = 40\%$
 Total % of students who failed = $30 + 40 - 15 = 55\%$
 Total % of students who passed in both papers $100 - 55 = 45\%$

Let, total number of students be x .

Now, 45% of $x = 270$

$$\frac{45x}{100} = 270$$

$$x = 600$$

61. (d) In the case of the objection that the weaklings far exceed strong people, the author comes up with the response that the weaklings will be miserable no matter what happens and that the strong would be frustrated if the weaklings are destroyed.

62. (a) The role of technology is not talked about in the passage. So, if the effect of technology on environment is taken into account then the author's discussion would be greatly influenced.

63. (c) Since majority of the patients have responded well to the drug one wonders how some of them have witnessed deterioration in their condition.

64. (d)

65. (c) Option (d) is not analogous from any angle. Point of Chinese manufacturing is also not logical in option (b). Option (c) exhibits the analogous relationship. If number of words is high, the text will not be read and when an advertisement text is not read, the product is not sold. Hence, the correct answer is Option (c). Note the relationship is inverse in nature.

66. (b) Children are not being affected by malaria. This implies they are already resistant to the disease. Why then should we need the supplements?

67. (c) Part filled by pipe A in 1 min = $\frac{1}{10}$

$$\text{Part empty by pipe B in 1 min} = \frac{1}{15}$$

$$\therefore \text{Total tank filled in minutes} = \frac{1}{10} - \frac{1}{15} - \frac{3-2}{30} = \frac{1}{30}$$

Hence, the tank will be filled in 30 min.

68. (d) Total number of ways in which 9 balls occupy any of the 6 squares = ${}^9C_6 = 84$

Number of ways in which one row is not filled = 3

\therefore Number of ways in which at least one ball occupies each row = $84 - 3 = 81$

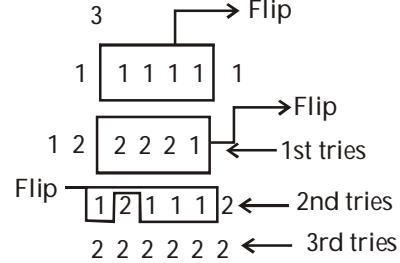
69. (a) On the first attempt four coins are overturned.
 Now, six coins are left.

In the next turn, four more are overturned. Now only two would be left. We take one more from the left over two coins and any three from the previously turned ones. Finally, the leftover coin and the three coins from the presiding step which have already been turned twice can be overturned. Thus, in four attempts, one can complete the process.

70. (c) 2 Women can occupy 2 chairs out of the first four chairs in 4P_2 ways. 3 men can be arranged in the remaining 6 chairs in 6P_3 ways.

Hence, total no. of ways = ${}^4P_2 \times {}^6P_3 = 1440$

71. (a)



72. (c) Two hands of clock are on one above between 8 to 9.
 12 to 8 $\Rightarrow 40$ min

$$40 \text{ min} \Rightarrow \frac{60}{55} \times 40 = \frac{480}{11} \text{ min past 8.}$$

two hands of clock are on one above between 9 to 10.
 12 to 9 $\Rightarrow 45$ min

$$45 \text{ min} \Rightarrow \frac{60}{55} \times 45 = \frac{540}{11} \text{ min past 9.}$$

So two hands be lying one above the other =

$$60 - \frac{480}{11} + \frac{540}{11}$$

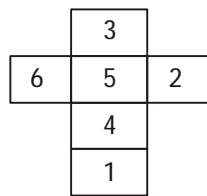
$$= \frac{660 + 540 - 480}{11} = \frac{720}{11} = 65.4$$

73. (a) Distance travelled = Area under the velocity – Time graph.

Here, Area under the curve A is smallest, so car 'A' will travel the least distance.

74. (b)

75. (b) The workers in the organized sector are not being talked about in the statement. So, I does not follow. It is mentioned that some workers in the unorganized sector are engaged in sundry jobs. This means that they have fixed income. So, II follows.
76. (a) All graduates are students + All students are laborious
 $= A + A = A = \text{All graduates are laborious}$, which on conversion gives "Some laborious are graduates." So, Conclusion I follows. But, the last two statements of the arguments are of I type and do not lead to any results. So, only Conclusion I follows.
77. (a) When we opened the cube

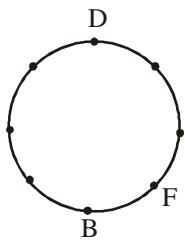


Now, (A) and (B), two possible number can exist on two faces are 2 and 3.

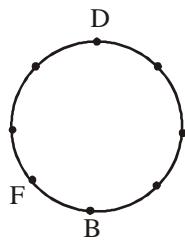
78. (d) From the graph, it is clear that profit earned per hectare for potatoes is more from O to A and it is more for corn from A to B. So, growing of potatoes is more profitable from O to A and growing of corn is more profitable from A to B. Similarly, growing of corn is less profitable between O and A and growing of potatoes are less profitable between A and B.
79. (a) The cost of Food A is ₹ 1.80 hundred grams or 1.8 paisa a gram.
 So, x gram of A + y gram of B + z gram of C will cost
 $= (1.8x + 3y + 2.75z)$ paisa

Sol. (Q. 80)

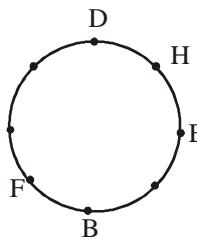
As it is given that B is the neighbour of F and fourth to the left of D. So, the arrangement is.



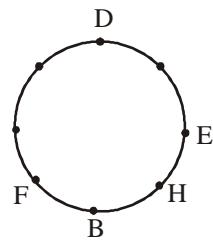
OR


Case I
Case II

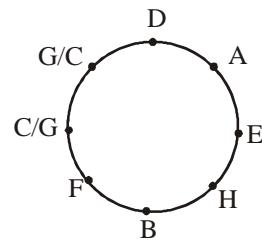
Now, E is third to the right of F. This information rejects the Case I. Also, it is given that E is the neighbour of H and third to the right of F, so the following two possibilities are there-



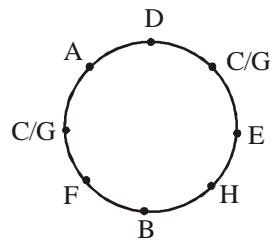
OR


Case II (a)
Case II (b)

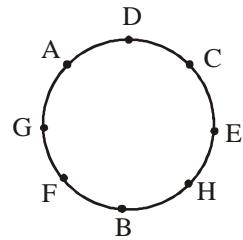
Now, from the information that D is the neighbour of A but not of H. Hence, Case II (a) can be rejected. So, the following two possibilities are there



OR


Case III (a)
Case III (b)

Also, it is given that, C is neither the neighbor of A nor of G, so Case III (a) can be rejected.
 Hence, the final seating arrangement will be as follows.



80. (d)

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PRACTICE SET - 1

Max. Marks : 200

Time : 2 hrs.

Directions (Qs. 1-8) : Read the following passages and answer the questions that follows. Your answer to these question should be based on passage only.

PASSAGE-1

"It was AC Milan's success in Europe in the sixties that introduced the 'libero' as the Italian default and, a quarter of a century later. It was AC Milan's success in Europe that killed it off."

1. Which of the following was not implied in the above sentence?
 - (a) AC Milan was successful in Europe in the sixties with the help of a 'libero'.
 - (b) AC Milan was successful in Europe in the late eighties without a 'libero'.
 - (c) The 'libero' was an Italian default for almost a quarter of a century.
 - (d) AC Milan was not successful in Europe for almost a quarter of a century.

PASSAGE-2

People must no longer ignore the scientific evidence that life begins at the moment of conception. Abortion is not as simple as removing a "blob of tissue" from a woman's body. Abortion is the destruction, dismembering and killing of a human life—an unborn baby. According to the medical community, research has shown that the fetus is a living and developing human being whose life begins at the moment of conception. Therefore, it is wrong to murder the innocent child in the womb.

2. Which one of the following accurately presents a rebuttal from an imaginary speaker?
 - (a) Human beings do not have the right to curtail the life of someone who was granted life by providence.
 - (b) Children are a gift of God and should be welcomed with open arms.
 - (c) Women undergoing an abortion are at high risk of medical complications and psychological trauma.
 - (d) It is the woman's informed decision to opt for an abortion while being fully aware of the medical risks involved in the process.

PASSAGE-3

Is it frivolous to make or talk about theatre while people are dying in Gaza? That was one of the issues raised at last weekend's Devoted and Disgruntled, particularly as Saturday's sessions coincided with the demonstration against Israel's actions in Gaza. As one disgruntled theatre-maker observed: "I want to feel useful, not decorative." As those of us who marched against the invasion of Iraq know all too well, demonstrating in a democracy often changes nothing.

3. It can be inferred from the above paragraph that
 - (a) Demonstrations are useless in a democracy.
 - (b) Talking about entertainment during a calamity does not appeal to some.

- (c) Theatre is an activity which is decorative.
- (d) Theatre people were up in arms against the Government during the Iraq invasion.

PASSAGE-4

The creation of VSLAs should please the Ugandan finance minister. Ugandans save barely 10% of the GDP, Ezra Suruma complained in his national budget speech in June last year, compared to 30% in other emerging economies. "I call upon all Ugandans to save a part of their income, no matter how small," the minister said. "Research all over the world has shown conclusively that poor people can, and do, save. Savings is the proven route to get out of poverty."

4. The assumption in Ezra's argument is that
 - (a) Even rich Ugandans do not save a part of their income.
 - (b) Ugandans do not save in spite of being aware of the benefits of savings.
 - (c) Even the poorest in Uganda have the capacity to save.
 - (d) the number of poor people in Uganda is more than the number of rich people.

PASSAGE-5

Whether you view nuclear power as the promise for a better tomorrow or a whopping down payment on a mutant-filled apocalypse, there's a good chance you won't be easily converted to the other side. After all, nuclear power boasts a number of advantages, as well as its share of downright depressing negatives. As far as positives go, nuclear power's biggest advantages are tied to the simple fact that it doesn't depend on fossil fuels. Coal and natural gas power plants emit carbon dioxide into the atmosphere, contributing to climate change. With nuclear power plants, CO₂ emissions are minimal.

5. The paragraph implies that
 - (a) nuclear power plants do not emit CO₂ and hence do not contribute to climate change.
 - (b) fossil fuel dependency is a huge problem confronting the developed world.
 - (c) fossil fuels are a problem, as we do not know when they would get depleted.
 - (d) nuclear power plants are less likely to pollute the environment as compared to coal power plants

PASSAGE-6

The human race is spread all over the world, from the polar regions to the tropics. The people of whom it is made up eat different kinds of food, partly according to the climate in which they live, and partly according to the kind of food which their country produces. In hot climates, meat and fat are not much needed; but in the Arctic regions they seem to be very necessary for keeping up the heat of the body. Thus, in India, people live chiefly on different kinds of grains, eggs, milk, or sometimes fish and meat. In Europe, people eat more meat and less grain. In the Arctic regions, where no grains and fruits are produced, the Eskimo and other races live almost entirely on meat and fish.

6. Which of the following is an apt summary for the above passage?
- Food eaten by people in different regions of the world depends on the climate and produce of the region, and varies from meat and fish in the Arctic to predominantly grains in the tropics.
 - Hot climates require people to eat grains while cold regions require people to eat meat and fish.
 - In hot countries people eat mainly grains while in the Arctic, they eat meat and fish because they cannot grow grains.
 - While people in Arctic regions like meat and fish and those in hot regions like India prefer mainly grains, they have to change what they eat depending on the local climate and the local produce.

PASSAGE-7

Despite advances in geothermal technology and equipment, experts rarely agree which method is the best indicator of a likely source of oil. Some believe the cycle of environmental changes determines the primary sources for crude oil, while others look to the evolution of organic matter as the most significant indicator. What they do agree on, however, is where oil won't be found. They agree that in areas that were scraped clean of organic sedimentary deposits by glaciers during the last million years or so, the biological "ingredients" that they believe are necessary for the formation of oil and gas are not present. That is, where glaciers have scoured a landmass, oil and gas will not be found.

7. If all of the information above is true, which one of the following can be reasonably inferred?
- Geologists understand some of the physical conditions necessary for the formation of deposits of oil.
 - Scientists leave open the possibility that oil may have been formed during the last million years in some regions that were covered by glaciers during the same period.
 - Geologists can, with a fairly high degree of accuracy, predict whether an area that meets the necessary preconditions for the formation of oil will, in fact, yield oil.
 - Geologists can, with a fairly high degree of accuracy, predict whether oil can be found in a particular landmass that was not scoured by glaciers.
8. Which one of the following, if true, would most seriously weaken the geologists' view?
- Relatively little of the Earth's surface is known to rest above the sort of organic sedimentary deposits described above.
 - Despite the existence of permanent glaciers, oil has been found at both the North and South Poles.
 - There are too many variables involved for experts to be able to identify what does and does not need to be present for the formation of oil.
 - Oil deposits exist below the crust of the entire Earth, and are brought nearer to the surface by cracks in the crust.

9. The child A is less intelligent than the child B. The child C is less intelligent than the child D. The child B is less intelligent than the child C and child A is more intelligent than child E. Which child is the most intelligent?
- A
 - B
 - D
 - E
10. In an examination, Raj got more marks than Mukesh but not as many as Priya. Priya got more marks than Gaurav and Kavita. Gaurav got less marks than Mukesh but his marks are not the lowest in the group. In this context, which of the following statement is not correct?
- Raj is second in descending order of marks.
 - Gaurav is second in ascending order of marks.
 - Kavita scores highest marks.
 - Priya scores highest marks.
11. An employer engaged a servant with free boarding and lodging for one year with the condition that the servant will be given ` 2500 and a uniform at the end of the year. The servant agreed but served the employer only for 10 months and thus received ` 2000 and a uniform. The price of the uniform is:
- ` 250
 - ` 350
 - ` 400
 - ` 500
12. Examine the following statements:
- Ashish is heavier than Govind.
 - Mohit is lighter than Jack.
 - Pawan is heavier than Jack but lighter than Govind.
- The conclusion that can be drawn from these statements is that
- Mohit is the heaviest of all.
 - Govind is the second heaviest person.
 - Ashish is the lightest of all.
 - Jack is the second heaviest person.
13. X and Y start moving towards each other from two places 200 m apart. After walking 60 m, Y turns left and goes 20 m, then he turns right and goes 40 m. He then turns right again and comes back to the road on which he had started walking. If A and B walk with the same speed, what is the distance between them now?
- 20m
 - 30m
 - 40m
 - 50m
14. Two cars A and B start simultaneously from a certain place at the speed of 30 km/h and 45 km/hr, respectively. The car B reaches the destination 2 h earlier than A. What is the distance between the starting point and destination?
- 90 km
 - 180 km
 - 270 km
 - 360 km
15. A milkman bought 15 kg of milk and mixed 3 kg of water in it. If the price per kg of the mixture becomes ` 22, what is cost price of the milk per kg?
- 28.00
 - 26.40
 - 24.00
 - 22.00

19. Examine the following statement

Monitoring has become an integral part in the planning of social development programmes. It is recommended that Management Information System be developed for all programmes. This is likely to give a feedback on the performance of the functionaries and the efficacy with which services are being delivered.

Two conclusions numbered I and II, are given below. You have to assume everything in the statement to be true, then consider the two conclusions together and decide which of them logically follows beyond a reasonable doubt from the information given in the statement.

Conclusions

- I. All are social development programmes should be evaluated.

II. There is a need to monitor the performance of workers.

(a) Only conclusion I follows

(b) Only conclusion II follows

(c) Either I or II follows

(d) Both I and II follow

20. While presenting a stage show recently, the famous actor declared that he has a practice or either taking full payment or none for his stage shows. Conclusions : I. The actor has taken full payment for his recent stage show II. The actor did not take any money for his recent stage show.

(a) If only conclusion I follows

(b) If only conclusion II follows

(c) If either I or II follows

(d) If neither I nor II follows

Directions (Qs. 21-28) : Read the following passages and answer the questions that follows. Your answer to these question should be based on passage only.

PASSAGE-1

Some decisions will be fairly obvious - “no-brainers.” Your bank account is low, but you have a two week vacation coming up and you want to get away to some place warm to relax with your

family. Will you accept your in-laws' offer of free use of their Florida beachfront condo? Sure. You like your employer and feel ready to move forward in your career. Will you step in for your boss for three weeks while she attends a professional development course? Of course.

21. Which of the following is an apt summary for the above passage?

 - (a) Some decisions are obvious under certain circumstances. You may, for example, readily accept a relative's offer of free holiday accommodation. Or step in for your boss when she is away.
 - (b) Some decisions are no brainers. You need not think when making them. Examples are condo offers from in-laws and job offers from bosses when your bank account is low or boss is away.
 - (c) Easy decisions are called "no-brainers" because they do not require any cerebral activity. Examples such as accepting free holiday accommodation abound in our lives.
 - (d) Accepting an offer from in-laws when you are short on funds and want a holiday is a no-brainer. Another no-brainer is taking the boss's job when she is away

PASSAGE-2

Modern bourgeois society, said Nietzsche, was decadent and enfeebled - a victim of the excessive development of the rational faculties at the expense of will and instinct. Against the liberal-rationalist stress on the intellect, Nietzsche urged recognition of the dark mysterious world of instinctual desires- the true forces of life. Smother the will with excessive intellectualizing and you destroy the spontaneity that sparks cultural creativity and ignites a zest for living. The critical and theoretical outlook destroyed the creative instincts. For man's manifold potential to be realized, he must forego relying on the intellect and nurture again the instinctual roots of human existence.

22. Which of the following is an apt summary for the above passage?

 - (a) Nietzsche urges the decadent and enfeebled modern society to forego intellect and give importance to creative instincts.
 - (b) Nietzsche urges the decadent and enfeebled modern society to smother the will with excessive intellectualising and ignite a zest for living.
 - (c) Nietzsche criticizes the intellectuals for enfeebling the modern bourgeois society by not nurturing man's creative instincts.
 - (d) Nietzsche blames excessive intellectualization for the decline of modern society and suggests nurturing creative instincts instead.

PASSAGE-3

Euthanasia continues to be an option for many pet owners who do not want their terminally-ill pet to suffer, or who may find the veterinary costs for continued treatment of their pet to be prohibitive. As an owner, the emotions one feels at this time often may make it hard to think, communicate, and make decisions. Therefore, it is often helpful to discuss the process of euthanasia with one's veterinarian.

23. Which of the following is a valid assumption?
- For owners, euthanizing a pet is emotionally a very difficult thing to do.
 - As hard as it is, the owner needs to consider the financial cost as well as the emotional cost of continuing to care for the ill pet.
 - A vet can suggest the treatment options, cost involved, possible outcomes, and chances of recovery if your pet is sick; hence, can help make an objective decision about euthanasia.
 - None of the above.

PASSAGE-4

British museums are different and that is their strength. The collection of Hans Sloane, which forms the basis of the British Museum, was left in trust to the nation. The British Museum was created for the people and enriched by the collections of its citizens; it is part of civic society. This sets it apart too, from major American institutions, created by the generosity of private philanthropists - but run as private institutions.

24. It can be logically inferred from the above paragraph that
- British Museums are entirely made by collections from the people.
 - American Museums would be more efficient than British Museums.
 - it is easier to run British Museums because of the support of the people.
 - British Museums are not run as private institutions.

PASSAGE-5

The human civilization stands on an edge of destiny. It lies today at the mercy of nuclear weapons, which have the power to destroy us completely least controlled wisely. In such a crisis situation, it is important to develop sensitivity towards the basic value of life. It includes an explicit realization that humans swim in an ocean, where they must swim together and sink together. At this juncture a sink rotten fish would damage the ocean as whole. Man cannot afford to tamper with his loyalty to peace and international understanding, which is the only way to deal with the situation. Anyone who does so dooms the entire past, present and the future of the human civilization.

25. Which of the following can be inferred from the given passage?
- Nuclear war, one day or the other, is poised to end the human civilization.
 - It is not possible for the countries to exist in unison regardless of what happens in other countries.
 - Unless all the nuclear weapons on Earth are destroyed, peace cannot be restored.
- Only I
 - Only II
 - II and III
 - I and III

PASSAGE-6

One of the most fateful errors of our age is the belief that 'the problem of production' has been solved. Things are not going as well as they ought to be going must be due to human wickedness. We must therefore construct a political system so perfect that human wickedness disappears and everybody behaves well. In fact, it is widely held that everybody is born good; if one turns into a criminal or an exploiter, this is the fault of 'the system'.

Modern man talks of a battle with nature, forgetting that, if he won the battle, he would find himself on the losing side. The illusion of unlimited powers, nourished by technological achievements, has produced the concurrent illusion of having solved the problem of production. The later illusion is based on the failure to distinguish between income and capital where this distinction matters most. Every economist and businessman is familiar with the distinction and applies it conscientiously to all economic affairs except the irreplaceable capital which man has not made but simply found and without which he can do nothing. For larger is the capital provided by nature and not by man and we do not even recognize it as such. This larger part is now being used up at an alarming rate and that it why it is an absurd and suicidal error to believe and act on the belief that the problem of production has been solved.

26. According to the author, the problem of production has not yet been solved because
- inspite of the huge and cry the world over, man is still exploiting his resource base (i.e., nature), to reduce the level of exploitation
 - of man's failure to realize that his economic activities are adversely affecting nature
 - technology is yet to be transferred to developing countries
 - the detrimental effect that the new technologies have when used for achieving economic goals
27. Identify the statement that cannot be attributed to the author with regard to the control of the systems of society.
- Faulty systems tend to breed wickedness
 - The problem of production is the real reason behind the evils or problems of society
 - All present day systems have a certain inbuilt error
 - A perfect political system would have all good citizens
28. Why would man find himself on the losing side if he were to conquer nature for economic progress?
- He is not destined to win this one-sided battle
 - The benefits of scientific and technological development are merely illusory
 - In conquering nature, he would be killing the goose that lays the golden eggs
 - He is handicapped by a faulty understanding of the issues related to income and capital
29. Situ and Meenu were walking on the road. Situ said, "I weigh 51kg. How much do you weigh? Meenu replied that she would not reveal her weight directly as she was overweight. But she said, I weigh 29 kg plus half of my weight. How much does Meenu weight ?
- 52 kg
 - 58 kg
 - 63 kg
 - 57 kg
30. Consider the following information regarding the performance of a class of 1000 students in four different tests:

Tests	I	II	III	IV
Average marks	60	60	70	80
Range of marks	30	45	20	0
	to 90	to 75	to 100	to 100

Directions (Qs. 41-46) : Read the following passages and answer the questions that follows. Your answer to these question should be based on passage only.

PASSAGE-1

Although almost all climate scientists agree that the Earth is gradually warming, they have long been of two minds about the process of rapid climate shifts within larger periods of change. Some have speculated that the process works like a giant oven or freezer, warming or cooling the whole planet at the same time. Others think that shifts occur on opposing schedules in the Northern and Southern Hemispheres, like exaggerated seasons. Recent research in Germany examining climate patterns in the Southern Hemisphere at the end of the last Ice Age strengthens the idea that warming and cooling occurs at alternate times in the two hemispheres. A more definitive answer to this debate will allow scientists to better predict when and how quickly the next climate shift will happen.

41 Which of the following is an apt summary for the above passage?

- (a) Scientists have been unsure whether rapid shifts in the Earth's climate happen all at once or on opposing schedules in different hemispheres; research will help find a definitive answer and better predict climate shifts in future.
- (b) Scientists have been unsure whether rapid shifts in the Earth's climate happen all at once or on opposing schedules in different hemispheres; finding a definitive answer will help them better predict climate shifts in future.
- (c) Research in Germany will help scientists find a definitive answer about warming and cooling of the Earth and predict climate shifts in the future in a better manner.
- (d) More research rather than debates on warming or cooling of the Earth and exaggerated seasons in its hemispheres will help scientists in Germany predict climate changes better in future.

PASSAGE-2

Local communities have often come in conflict with agents trying to exploit resources, at a faster pace, for an expanding commercial - industrial economy. More often than not, such agents of resource intensification are given preferential treatment by the state, through the grant of generous long leases over mineral or fish stocks, for example, or the provision of raw material at an enormously subsidized price. With the injustice so compounded, local communities at the receiving end of this process have no recourse except direct action, resisting both the state and outside exploiters through a variety of protest techniques. These struggles might perhaps be seen as a manifestation of a new kind of class conflict

42 Which of the following is an apt summary for the above passage?

- (a) A new kind of class conflict arises from preferential treatment given to agents of resource- intensification by the state which the local community sees as unfair.
- (b) The grant of long leases to agents of resource-intensification for an expanding commercial - industrial economy leads to direct protests from the local community, which sees it as unfair.

- (c) Preferential treatment given by the state to agents of resource- intensification for an expanding commercial - industrial economy exacerbates injustice to local communities and leads to direct protests from them, resulting in a new type of class conflict.
- (d) Local communities have no option but to protest against agents of resource-intensification and create a new type of class conflict when they are given raw material at subsidized prices for an expanding commercial industrial - economy.

PASSAGE-3

A study based on a year-long analysis of data from an extensive mobile phone network has produced interesting information that might be of use to epidemiologists and social scientists. The data, according to the researchers, might shed light e.g., how diseases and information (or rumours) are transmitted through social networks. Researchers ramped the like between a pair of phone users on the basis of the total time spent talking to each other.

'Strong' links exist between members of a close social group. 'Weak' links tend to be more long range and join individuals from different social groups.

The researchers observed a dramatically different effect when they removed links in the network in rank order, depending on whether they removed links starting with the strongest or with the weakest. To their surprise, removing the strong links first had little effect on the overall structure of the network. But removing weak links first split the network into a series of unconnected islands, with individual users linked to a small group of other phone users.

Thus, the researchers have hypothesized that the weak links (the more tenuous connections between individuals from different social groups) might be very important in maintaining wider social cohesion. If you lose contact with casual acquaintances you may fragment your social circle, but if you stop talking to your brother there might be less visible impact on the structure of your social network.

43. Consider the following statements with regard to the passage

- I. 'Weak' links are more important than 'strong' links.
- II. Some people believe that phone-network patterns could be useful to social scientists.
- III. Links between family members would be disrupted by terminating 'weak' links.
- IV. The 'strong' links are between geographically close individuals.

The passage supports which of the following conclusions?

- (a) II and IV
- (b) Only II
- (c) Only III
- (d) Only I

44. Which of the following can be inferred from the passage?

- (a) Information transmission through phone networks is essentially the same as information transmission through face-to-face contact
- (b) The phone-network studied had the same number of users throughout the study
- (c) The phone users were unaware of the study
- (d) The researchers had not anticipated the specific effects of removing weak links

45. Consider the following statements regarding the purpose of the last sentence of the passage
- To make the ideas more specific to improve the reader's understanding.
 - To provide a practical illustration of the meaning of a strong link.
 - To generalize the argument to make it more appealing.
 - To concretize an argument about the usefulness of the current research.
- Which of the above statements convey the author's intentions?
- Only I
 - II and III
 - I, II and III
 - I and II
46. What is the meaning of the phrase "series of unconnected islands" mentioned in the last sentence of the fourth paragraph?
- Individuals not able to talk to anybody else
 - Only relatives who were connected to each other
 - Small groups of people not able to communicate with other groups
 - None of the above
47. The age of a mother, before two years, was eight times the age of there daughter. After 1 year, mother's age will be five times the daughter's age. After how many years from now the mother's age will become three times the daughter's age?
- 6 years
 - 8 years
 - 10 years
 - 12 years
48. A clock is set right at 8 a.m. The clock gains 10 minutes in 24 hours will be the true time when the clock indicates 1 p.m. on the following day?
- 48 min. past 12
 - 46 min. past 12.
 - 45 min. past 12.
 - 47 min. past 12.
49. In how many ways is it possible to choose a white square and a black square on a chess board so that the squares must not lie in the same row or column?
- 56
 - 896
 - 60
 - 768
50. The wages of labourers in a factory has increased in the ratio 22 : 25 and their number decreased in the ratio 3 : 2. What was the original wages bill of the factory, if the present bill is ` 5000?
- ` 4000
 - ` 6000
 - ` 8000
 - ` 6600
51. A runs $1\frac{2}{3}$ times as fast as B. If A gives B a start of 80 m, how far must the winning post from the starting point be so that A and B might reach it at the same time ?
- 200 m
 - 300 m
 - 270 m
 - 160 m

Directions (Qs. 52 and 53) : Read the following passage to answer these questions:

Anita, Mahima, Rajan, Lata and Deepti are five cousins. Anita is twice as old as Mahima. Rajan is half the age of Mahima. Anita is half the age of Deepti and Rajan is twice the age of Lata.

52. Which of the following pairs of persons are of the same age?
- Mahima and Lata
 - Anita and Mahima
 - Mahima and Rajan
 - None of these
53. If Mahima is 16 years old, then what is the age of Lata?
- 4 years
 - 5 years
 - 7 years
 - 14 years
54. A refrigerator and a camera were sold for ` 12000 each. The refrigerator was sold at a loss of 20% of the cost and the camera at a gain of 20% of the cost. The entire transaction results in which one of the following?
- No loss or gain
 - Loss of ` 1000
 - Gain of ` 1000
 - Loss of ` 2000
- Directions (Qs. 55) :** Study the information given below and answer the questions that follow:
- A, B, C, D, E and F are cousins. No two cousins are of the same age, but all have birthdays on the same date. The youngest is 17 years old and the oldest E is 22. F is somewhere between B and D in age. A is older than B. C is older than D.
55. Which of the following is not possible?
- D is 20 years old.
 - F is 18 years old.
 - F is 19 years old
 - F is 20 years old.
56. Out of 105 students taking an examination English and Mathematics, 80 students pass in English, 75 students pass in Mathematics 10 students fail in both the subjects. How many students fail in only one subject?
- 26
 - 30
 - 35
 - 45
57. A boy has 3 library cards and 8 books of his interest in the library. Of these 8, he does not want to borrow chemistry part II unless Chemistry part I is also borrowed. In how many ways can he choose the three books to be borrowed?
- 56
 - 27
 - 26
 - 41
58. In a cricket season, India defeated Australia twice, West Indies defeated India twice, Australia defeated West Indies twice, India defeated New Zealand twice, and West Indies defeated New Zealand twice. Which country has lost most number of times?
- India
 - Australia
 - New Zealand
 - West Indies
59. In a class, 20% of the members own only two cars each, 40% of the remaining own three cars each and the remaining members own only one car each. Which of the following statements is definitely true from the given statements?
- Only 20% of the total members own three cars each.
 - 48% of the total members own only one car each.
 - 60% of the total members own at least two cars each.
 - 80% of the total members own at least one car.
60. A boy has enough money to buy 20 exercise books. If each book cost 25 paise less, he could buy two more books and still have 70 paise left. How much money had he originally?
- 45
 - 48
 - 50
 - 52
61. Sally overslept. Therefore, she did not eat breakfast. She realized that she was late for school, so she ran as fast as she could and did not see a hole in the ground which was in

her path. She tripped and broke her ankle. She was then taken to the hospital and while lying in bed was visited by her friend, who wanted to know why she had got up so late. Which of the following conclusions can be made from the above passage?

- (a) Sally's broken ankle meant she did not go to school that day.
- (b) Sally's friend visited her in the hospital because she wanted to know why she was late for school.
- (c) Sally did not notice the hole because she overslept.
- (d) Sally broke her ankle because she went to bed late the previous night.

Directions (Qs. 62-66) : Read the following passages and answer the questions that follows. Your answer to these question should be based on passage only.

PASSAGE-1

There are three main factors that control the risks of becoming dependent on drugs. These factors are the type of drug, the personality of the individual and the circumstances in which the drug is taken. Indeed, it could be said that the majority of the adult population have taken alcohol, yet few have become dependent on it. Also, many strong drugs that have been used for medical purposes have not caused the patient to become addicted. However, it can be demonstrated that people who have taken drugs for fun are more likely to become dependent on the drug. The dependence is not always physiological but may remain psychological, although the effects are still essentially the same. Those at greatest risk appear to be personalities that are psychopathic, immature, or otherwise unstable. Psychological dependence is very strong with heroin, morphine, cocaine and amphetamines. Physiological dependence is great with heroin and morphine, but less with amphetamines, barbiturates and alcohol.

62. Which of the following conclusions can be drawn from the text ?
- (a) One cannot become addicted to certain drugs if one has a strong personality.
 - (b) Taking drugs for "kicks" increases the possibility of becoming dependent on drugs.
 - (c) Psychological dependence is the greatest with heroin.
 - (d) Alcohol is a safe drug since very few people become dependent on it.

PASSAGE-2

The company encourages its managers to interact regularly, without a pre-set agenda, to discuss issues concerning the company and society. This idea has been borrowed from the ancient Indian concept of religious congregation, called satsang. Designations are forgotten during these meetings; hence, it is not uncommon in these meetings to find a sales engineer questioning the CEO on some corporate policy or on his knowledge of customers.

63. Based on the information provided in the above passage, it can be inferred that
- (a) The company is concerned about its reputation with its employees.
 - (b) The company believes in fostering the spirit of dialogue without degenerating it into a position-based debate.

- (c) The company has some inter-personnel problems in the past due to which it felt the need for these corporate satsangs.
- (d) All of the above

PASSAGE-3

On Monday, the Environmental Protection Agency released its list of counties, areas or tribal lands that are exceeding daily standards for fine particle pollution caused by emissions from vehicles, industry and wood stoves, among other sources. The pollutants in question are extremely small, measuring at one-thirtieth the diameter of a human hair. The particles can get deep into the lungs, even entering the bloodstream, and are blamed for respiratory problems, especially in children and elderly.

64. A logical conclusion from the above paragraph is that
- (a) the EPA would be imposing a heavy fine on countries that exceed the daily standards for fine particle pollution.
 - (b) tribals have been aware about the harm caused by fine particle pollution.
 - (c) vehicles that exceed the daily standards for fine particle pollution would be banned
 - (d) the EPA would want to bring to light, areas which exceed the daily standards for fine particle pollution.

PASSAGE-4

Corporate governance is based on principles such as conducting the business with all integrity and fairness, being transparent with regard to all transactions, making all the necessary disclosures and decisions, complying with all the laws of the land, accountability and responsibility towards the stakeholders and commitment to conducting business in an ethical manner. Another point which is highlighted on corporate governance is the need for those in control to be able to distinguish between what are personal and corporate funds while managing a company.

Fundamentally, there is a level of confidence that is associated with a company that is known to have good corporate governance. The presence of an active group of independent directors on the board contributes a great deal towards ensuring confidence in the market. Corporate governance is known to be one of the criteria that foreign institutional investors are increasingly depending on when deciding on which companies to invest in. It is also known to have a positive influence on the share price of the company. Having a clean image on the corporate governance front could also make it easier for companies to source capital at more reasonable costs. Unfortunately, corporate governance often becomes the centre of discussion only after the exposure of a large scam.

65. According to the passage, which of the following should be the practice/practices in good corporate governance?
1. Companies should always comply with labour and tax laws of the land.
 2. Every company in the country should have a government representative as one of the independent directors on the board to ensure transparency.
 3. The manager of a company should never invest his personal funds in the company.

Select the correct answer using the codes given below:

- | | |
|------------------|------------------|
| (a) 1 only | (b) 2 and 3 only |
| (c) 1 and 3 only | (d) 1, 2 and 3 |

66. According to the passage, which of the following is/are the major benefit/benefits of good corporate governance?

1. Good corporate governance leads to increase in share price of the company.
2. A company with good corporate governance always increases its business turnover rapidly.
3. Good corporate governance is the main criterion for foreign institutional investors when they decide to buy a company.

Select the correct answer using the codes given below:

- | | |
|------------------|------------------|
| (a) 1 only | (b) 2 and 3 only |
| (c) 1 and 3 only | (d) 1, 2 and 3 |

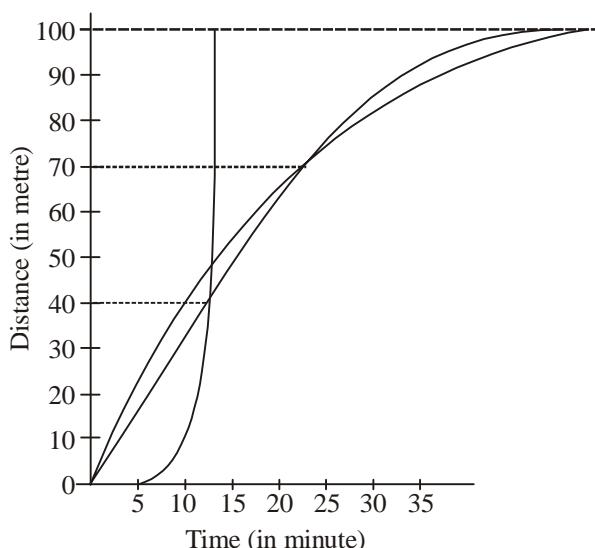
67. A dishonest dealer professes to sell his good at cost price but uses a false weight and thus gains 20%. For a kilogram he uses a weight of

- | | |
|-----------|-----------|
| (a) 700 g | (b) 750 g |
| (c) 800 g | (d) 850 g |

68. There are two taps *A* and *B* to fill up a water tank. The tank can be filled in 40 min, if both taps are on. The same tank can be filled in 60 min, if tap *A* alone is on. How much time will tap *B* alone take, to fill up the same tank?

- | | |
|------------|-------------|
| (a) 64 min | (b) 80 min |
| (c) 96 min | (d) 120 min |

69. A distance-time graph is shown below. The graph shows three boys—*A*, *B* and *C* running for a 100 m race.

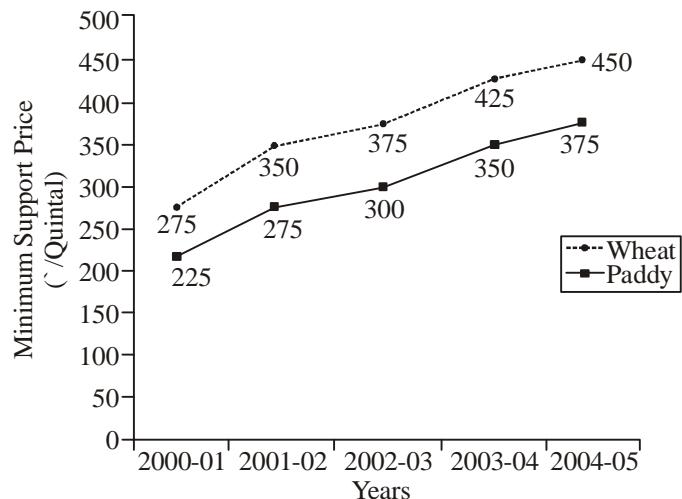


- I. The race was won by *C*.
 - II. *A* was ahead of *B* upto 70 m.
 - III. *C* is overtaking *B* at 40 m.
 - IV. *B* ran very slowly from the beginning.
- | | |
|-------------------|--------------------|
| (a) I and II | (b) I, II and III |
| (c) I, III and IV | (d) II, III and IV |

70. On a railway route between two places *A* and *B*, there are 20 stations on the way. If 4 new stations are to be added, how many types of new tickets will be required if each ticket is issued for a one way journey?

- | | |
|--------|---------|
| (a) 14 | (b) 48 |
| (c) 96 | (d) 108 |

Directions (Q. 71): Examine the graph given below and answer the question that follow:



71. During which year is the ratio of support price of wheat to that of paddy, the highest?

- | | |
|-------------|-------------|
| (a) 2000-01 | (b) 2002-03 |
| (c) 2001-02 | (d) 2004-05 |

72. In a plane, line *X* is perpendicular to line *Y* and parallel to line *Z*; line *U* is perpendicular to both lines *V* and *W*; line *X* is perpendicular to line *V*.

Which one of the following statements is correct?

- | |
|--|
| (a) <i>Z</i> , <i>U</i> and <i>W</i> are parallel. |
| (b) <i>X</i> , <i>V</i> and <i>Y</i> are parallel. |
| (c) <i>Z</i> , <i>V</i> and <i>U</i> are all perpendicular to <i>W</i> . |
| (d) <i>Y</i> , <i>V</i> and <i>W</i> are parallel. |

Directions (Q. 73): Examine the information and answer the question that follow.

Foods	Percentage of Protein	Percentage of Carbohydrate	Percentage of Fat	Cost per 100 g (in ₹)
Food A	10	20	30	1.80
Food B	20	15	10	3.00
Food C	20	10	40	2.75

73. Which of the following diets would supply the most grams of protein?

- | |
|---|
| (a) 500 of <i>A</i> |
| (b) 250 of <i>B</i> |
| (c) 350 of <i>C</i> |
| (d) 200 of <i>B</i> and 200 of <i>C</i> |

74. Each of two women and three men is to occupy one chair out of eight chairs, each of which numbered from 1 to 8. First, women are to occupy any two chairs from those numbered 1 to 4; and then the three men would occupy any three chairs out of the remaining six chairs. What is the maximum number of different ways in which this can be done?

- | | |
|----------|----------|
| (a) 40 | (b) 132 |
| (c) 1440 | (d) 3660 |

Directions (Qs. 75 and 76) : In each question below are given two statements followed by two conclusions numbered I and II. You have to take the given two statements to be true even if they seem to be at variance from commonly known facts. Read the conclusion and then decide which of the given conclusions logically follows from the two given statements, disregarding commonly known facts.

Give answer

- (a) if only conclusion I follows;
 - (b) if only conclusion II follows;
 - (c) if either conclusion I or II follows;
 - (d) if neither conclusion I nor II follows;

75. **Statement:** All hill stations have a sun-set point. X is a hill station.

Conclusions:

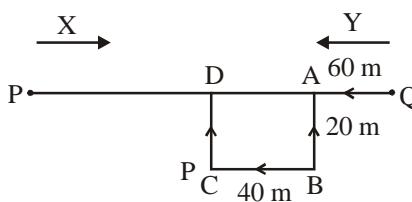
- I. X has a sun-set point.
 - II. Places other than hill stations do not have sun-set points.

76. **Statement:** The best evidence of India's glorious past is the growing popularity of Ayurvedic medicines in the West

Conclusions:

- I. Ayurvedic medicines are not popular in India.
 - II. Allopathic medicines are more popular in India.

SOLUTIONS

1. (d) The passage states that ‘libero’ was introduced in sixties, as a result of success of AC Milan but ‘libero’ got killed after a certain period. In the last sentence ‘it’ with kill is used for ‘libero’. Only option (d) is not implied in the passage.
2. (d) Options (a), (b) and (c) are against abortion on moral and religious grounds. These options are in line with the ideas presented in the paragraph. Option (d) argues in favour of abortions and refutes the reasons presented in the paragraph. Hence, option (d) is the correct choice.
3. (c) Option (b) cannot be inferred from the passage as it talks about only theatre and not all forms of entertainment. Option (a) cannot be sanctioned as the speaker opines “demonstrations are useless in a democracy.” There may be times when demonstration in a democracy works. Option (d) cannot be said to hold true for all theatre makers as only some staged a demonstration. Option(c) can be inferred from the line ... “I want to feel useful, not decorative.”
4. (c) Option (c) is assumed by Ezra when he calls upon even the poorest to save in Uganda. Option (a) cannot be sanctioned. The paragraph says that the savings rate in Uganda is low. We cannot say anything in specific terms about the rich people in Uganda. Options (d) require more data. Option (b) is an incorrect assumption as we do not know whether all Ugandans know about the benefit of savings.
5. (d) Option (d) is implied by the first line of the paragraph. Option (a) is incorrect as the paragraph says that CO₂ emissions by nuclear plants are minimal. Options (b) and (c) are beyond the scope of the discussion.
6. (a) The given passage explains that people live in varying climatic conditions depending on their region and it also affects the kind or type of food they eat. It says that the type of food they take in also depends on the food their country grows. Option (a) best summarizes the passage, whereas the rest of the options are inferences and are not directly mentioned in the passage.
7. (a) (a) This is nice and wishy-washy-they understand “some” of the conditions.
 (b) It cannot be inferred as they said that there shouldn’t be any.
 (c) We have no idea about their accuracy. They’re still arguing methodology.
 (d) Same problem as (c).
 Hence (a) is far our safest choice here.
8. (d) We should try to see which answer choice has the most negative impact on the conclusion (where glaciers have scoured a landmass, there will be no oil) of the argument. Remember to assume the hypothetical truth of each choice and apply it to the argument.
 (a) has no impact on the argument.
 (b) doesn’t say whether the glaciers have actually scoured the landmasses in these places.
- (c) has no impact as the geologists are trying to say what the conditions are for it not happening, not the other way around.
 (d) Oops-the geologists are boneheads because oil exists below the “entire earth.” Thus, there are no places it doesn’t exist, which totally destroys their argument. Hence it is the correct choice.
9. (c) We have sequence: A < B, C < D, B < C and E < A. So, the sequence becomes: E < A < B < C < D. Clearly, child D is the most intelligent.
10. (c) In terms of marks obtained.
 Mukesh < Raj, Raj < Priya, Gaurav < Priya, Kavita < Priya, Gaurav < Mukesh.
 Since Gaurav’s marks are not the lowest, so Kavita’s marks are the lowest.
 So, the sequence becomes:
 Kavita < Gaurav < Mukesh < Raj < Priya.
 Clearly, Kavita scores lowest marks.
11. (d) 12 months wages = ` 2500 + Uniform; and
 10 months wages = ` 2000 + Uniform
 \Rightarrow 2 months wages = ` 500
 12 months wages = ` 3000.
 \therefore Cost of the uniform = ` 500
12. (b) In terms of weight, we have
 Govind < Ashish, Mohit < Jack, Jack < Pawan, Pawan < Govind.
 Mohit < Jack < Pawan < Govind < Ashish.
 Clearly, Govind is the second heaviest person.
13. (c)
- 
- Clearly Y moves 60 m from Q upto A, then 20 m upto B, 40 m upto C and then upto D.
 So, AD – BC = 40 m.
 QD = (60 + 40)m = 100 m.
 Since X and Y travel with the same speed, A will travel the same speed along the horizontal as B travels in the same time. i.e. $(60 + 20 + 40 + 20) = 140$ m.
 So, X travels 140 m upto A.
 Distance between X and Y = AD – (100 – 60)m = 40 m.
14. (b) Let distance between starting and their destination be x km.
 $t_2 - t_1 = 2h$
 $\Rightarrow \frac{x}{30} - \frac{x}{45} = 2$
 $\Rightarrow \left(\frac{3x - 2x}{90} \right) = 2$
 $\Rightarrow \frac{x}{90} = 2$
 $\therefore x = 180$ km,

15. (b) Let cost price of milk ` x per kg.

Price of 15kg of milk = ` $15x$.

Now, mix 3kg of water, therefore quantity of mixture
 $= (15 + 3)$ kg = 18 kg

So, price of mixture is ` 22 per kg

According to question.

$$15x = 22 \times 18$$

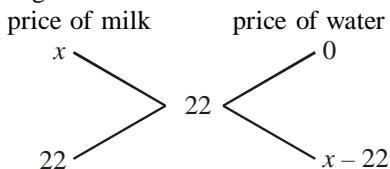
$$x = \frac{22 \times 18}{15}$$

$$= \frac{132}{5} = 26.40$$

Alternate Method :

Let CP of milk be ` x per kg.

By Alligation method



$$\therefore 22 : (x - 22) = 15 : 3$$

$$\Rightarrow \frac{22}{x - 22} = \frac{15}{3}$$

$$\Rightarrow \frac{22}{x - 22} = 5$$

$$\Rightarrow 22 = 5x - 110$$

$$\Rightarrow 22 = 132$$

$$\therefore x = ` 26.40$$

16. (a) Let the number of persons be x . Then,

$$\frac{96}{x-4} - \frac{96}{x} = 4 \Leftrightarrow \frac{1}{x-4} - \frac{1}{x} = \frac{4}{96} \Leftrightarrow \frac{x-(x-4)}{x(x-4)} = \frac{1}{24}$$

$$\Leftrightarrow x^2 - 4x - 96 = 0 \Leftrightarrow (x-12)(x+8) = 0 \Leftrightarrow x = 12.$$

So, required number = $x - 4 = 8$.

17. (b) Let d and s represent the number of daughters and sons respectively.

Then, we have,

$$d - 1 = s \text{ and } 2(s - 1) = d.$$

Solving these two equations, we get: $d = 4$, $s = 3$.

18. (b) Let there be w wide runs.

$$\text{Byes} = w + 8$$

$$\text{Runs scored by batsman} = 26w$$

$$\text{Total runs} = 232$$

According to question

$$w + w + 8 + 26w = 323$$

$$\Rightarrow w = \frac{224}{28} = 8$$

$$\text{Runs scored by Ram} = \frac{6}{13} \times 208 = 96$$

19. (d) According to the statement, monitoring and evaluation of social development programmes their function, performance and efficiency is absolutely essential. So, both I and II follow.

20. (c) As given in the condition in the statement, the actor either will take the full payment for his recent show or will not take any money for the same. Hence, either of the conclusions follows.

21. (a) The given passage states that some decisions are very easy to take under certain circumstances like if your bank account is low, then you'd readily accept an offer of free accommodation from your family members, or if you feel ready to move ahead in your career, then you'd be eager to step in for your boss who's going away for some time. Hence, the gist is that some decisions are obvious to make under some circumstances and this is what option (a) says. Whereas, other options do not talk about the existence of the circumstances which make those decisions easy to make. Option (b) is wordy and the first two sentences make it look like a standalone definition and not a summary. Option (c) is far-fetched with its "... abound in our lives" and option (d) is focusing on examples and not summarizing the passage.

22. (d) Nietzsche's views on the modern bourgeois society are mentioned in the passage (bourgeois is a person who belongs to the property owning class, or the rich, exploitative class). He describes the society as 'decadent' (culturally or morally weak) and 'enfeebled'. He says it is because the will and natural instincts are overlooked due to the importance given to intellectualization. He blames the rational faculties for bringing about such an approach or thinking. He suggests that people should not rely solely on the intellect and they should instead focus more on the natural instincts and the will which would lead to cultural creativity, and enthusiastic enjoyment for life. Option (d) is the best summary for this thought. Option (a) fails to put the blame on the excessive intellectualization, option (b) is against what has been mentioned in the passage, and option (c) narrows the blame to intellectuals, which is not according to the passage.

23. (c) The author concludes that the option of euthanasia must be discussed with one's vet. Hence the author assumes that a vet can help in considering various facets of the decision. Thus option c) is correct. Option a) and b) are already stated in the passage. Hence, they cannot be assumptions.

24. (d) Option (d) can be inferred from the paragraph which emphasizes that British museums are for the people and are different from Major American Institutions which are privately run. Option (b) cannot be inferred from the paragraph. Option (a) cannot be definitely inferred as the paragraph mentions "collections from people", but it does not say that that is the only constituent of British Museums. Option (c) cannot be inferred as the paragraph does not comment on the ease of running British Museums.

25. (a) Statement I follows from the first two sentences of the paragraph. Statement II is absurd. Statement III is not given in the passage.

26. (d) The last line of the passage states that "For larger is the capital provided by nature and not by man and we do not even recognize it as such", which confirms option (d).
27. (a) Refer to line of the passage "human wickedness disappears and everybody behaves well. In fact, it is widely held that everybody is born good", so, option (a) can be attributed to a widely held' belief not to the author.
28. (c) Refer to passage, we are using up the 'irreplaceable capital' and option (c) shows an irreplaceable loss.
29. (b) Let the weight of Meenu be x kg.

$$\text{Then, } \frac{x}{2} + 29 = x \quad \text{or} \quad x = 58 \text{ kg}$$

30. (b)

Tests	I	II	III	IV
Average marks	60	60	70	80
Range of marks	30 to 90	45 to 75	20 to 100	0 to 100

$$90 - 30 = 75, [75 - 45 = 30] 100 - 20 = 80 110 - 0 = 110$$

If a student scores 74 marks in each of the four tests, his performance would be the best comparatively in test II because there would be less numbers of the students in this range in test II only.

31. (c)
32. (b) In the first column, $12 \times 6 = 72$; $18 \div 6 = 3$
 In the third column, $16 \times 8 = 128$; $32 \div 8 = 4$
 In the second column, $14 \times 8 = 112$
 So, missing number $= 28 \div 8 = 3$
33. (b) Go on multiplying the given numbers by 3, 4, 5, 6, 7
34. (b)
35. (b) Number of questions attempted correctly
 $= (70\% \text{ of } 10 + 40\% \text{ of } 30 + 60\% \text{ of } 35)$
 $= (7 + 12 + 21) = 40$
 Questions to be answered correctly for 60% grade
 $= 60\% \text{ of } 75 = 45$.
 \therefore Required number of questions $= (45 - 40) = 5$.
36. (d) Given that:
1. The difference of age b/w R and Q = The difference of age b/w Q and T.
 2. Sum of age of R and T is 50 i.e. $(R + T) = 50$.
 $R - Q = Q - T$
 $(R + T) = 2Q$
 Now given that, $(R + T) = 50$
 So, $50 = 2Q$ and therefore $Q = 25$.
 Question is $(R - Q) = ?$
 Here we know the value(age) of Q (25), but we don't know the age of R.
 Therefore, $(R - Q)$ cannot be determined.
37. (c) Lalit is poorer than Hitesh.
 In terms of richness, we have:
 $Jaya < Hitesh, Pritam < Mohan, Lalit = Jaya, Hitesh < Amit$.

So, we have: Lalit = Jaya < Hitesh < Amit and Pritam < Mohan.

Clearly, Lalit is poorer than Hitesh.

38. (a) Arif is the father of Farha
 Farha - Farida - Arif means Farida is younger than Farha and Arif is younger than Farida.
 This means that Arif is younger than Farha. So, Arif cannot be the father of Farha.
39. (d) Clearly, the subordinate can attend the meeting as told by the Manager only when there is no inhibition. So, I is implicit. The subordinate is told to go only in case when the Manager is not well. This also shows the urgency to attend the meeting. So, II is also implicit.
40. (d) Clearly, the private sector banks have done so to attract more and more customers of public sector banks. Thus, public sector banks should either reduce the rate of interest to match with that of private sector banks or highlight those features which make them stand apart from private sector banks. So, either I or II follows.
41. (b) The passage states that scientists are divided in terms of the reason they give for the rapid climatic shifts; some believe this whole process works similarly to an oven or freezer which heats or cools the entire planet at the same time, while others believe that these shifts occur alternatively in the Northern Hemisphere and a research conducted in Germany strengthens this idea. In the end, the passage suggests that we should look for a 'definitive answer' via debates over which reason is correct and only then will we be able to predict how fast the next climatic shift will take place. Option (b) correctly summarizes the entire passage. Option (a) is wrong, as it puts emphasis on research in general to find a definitive answer, whereas the author stated that the importance should be given through the help that the definitive answer will provide. Option (c) focuses just on the research conducted in Germany, while option (d) is only focused on the German scientists. Hence, these options fail to capture the entire passage.
42. (c) The given passage explains a kind of class conflict which arises between the local communities and the agents who try to exploit natural resources for a quicker growth of the commercial-industrial economy. These agents are given benefit or preferential treatment in a number of ways which the local communities see as a big injustice. Option (c) has best summarized the given passage. Option (a) doesn't mention the commercial industrial economy, option (b) doesn't talk about the conflict because of the struggles, and option (d) talks specifically about the benefits given with respect to the raw materials, so this option doesn't capture the passage completely either.
43. (b) Statement II is clearly implied in the first paragraph. Statement I is incorrect because the words 'more important' in it cannot be justified. Statement III can be eliminated because weak links are less likely to be between family members. Also since geographical distances are not mentioned anywhere in the passage, statement IV is incorrect.

44. (d) There is no mention anywhere in the passage that the number of users was constant or that the users were aware that their network was being monitored; hence, statements (b) and (c) are incorrect. Also we can eliminate (a) because the words essentially the same' in it cannot be justified.
45. (b) The author is making a point clearer for the reader and so statement I is the correct choice. Statement II is too narrow as the author is doing more than just giving an illustration of a 'strong link.'
46. (b) This is made clear by the last phrase in the same sentence.
47. (b) Let present age of mother and daughter be x and y .
 2 years ago, $x - 2 = 8(y - 2)$
 $\Rightarrow x - 8y = -14 \quad \dots(i)$
 1 year after, $x + 1 = 5(y + 1)$
 $\Rightarrow x - 5y = 4 \quad \dots(ii)$
 On solving equations. (i) and (ii), we get
 $y = 6$ years and $x = 34$ years
 Let after z years mother will be three times of her daughter.
 $34 + z = 3(6 + z) \Rightarrow z = 8$ years
48. (a) Time from 8 a.m. on a day to 1 p.m. on the following day = 29 hours.
 24 hours 10 min. of this clock = 24 hours of the correct clock.
 $\frac{145}{6}$ hrs of this clock = 24 hours of the correct clock.
 29 hours of this clock = $\left(24 \times \frac{6}{145} \times 29\right)$ hrs of the correct clock = 28 hrs 48 min of the correct clock.
 Therefore, the correct time is 28 hrs 48 min. after 8 a.m.
 This is 48 min. past 12.
49. (d) There are 32 black & 32 white square on a chess board then No. of ways in choosing one white & one black square on the chess
 $= {}^{32}C_1 \times {}^{32}C_1 = 32 \times 32 = 1024$
 No. of ways in which square lies in the same row (white sq. = 4, black sq. = 4, No. of row = 8)
 $= {}^4C_1 \times {}^4C_1 \times 8$
 $= 128$
 No. of ways in which sq. lie on the same column
 $= {}^4C_1 \times {}^4C_1 \times 8 = 128$
 Total ways in which squares lie on the same row or same column = $128 + 128 = 256$
 Hence required no. of ways = $1024 - 256 = 768$
50. (d) Let initial salary = ` $22x$
 Final salary = ` $25x$
 Let initial number of employees = $3y$
 Final number of employees = $2y$
 \therefore Present bill = Final salary \times Final number of employees

$$\Rightarrow 5000 = 25x \times 2y$$

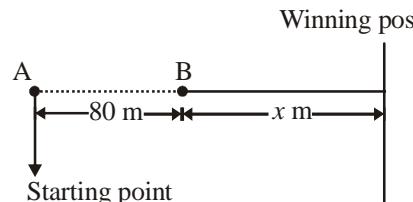
$$\Rightarrow \frac{5000}{50} = xy$$

$$\Rightarrow xy = 100$$

$$\therefore \text{Original bill} = \text{Initial salary} \times \text{Initial number of employees} = 22x \times 3y$$

$$= 66xy = 66 \times 100 = ` 6600$$

51. (a) Let speed of B = V

$$\text{Then speed of A} = \frac{5}{3}$$


Time taken by B to reach winning post = $\frac{x}{v}$... (i)

Time taken by A to reach winning post = $\frac{x+80}{v}$... (ii)

Now, from eqs (i) and (ii)

$$\Rightarrow \frac{x}{v} \pm \frac{x+80}{\frac{5v}{3}}$$

$$\Rightarrow 5x = 3x + 240$$

$$x = 120 \text{ km}$$

Distance from starting point = $x + 80$

Sol. (52 and 53)

Let Mahima's age = x . Then, Anita's age = $2x$; Rajan's age = $\frac{x}{2}$; Deepti's age = $4x$; Lata's age = $\frac{x}{4}$. So, the descending order of ages is: Deepti > Anita > Mahima > Rajan > Lata.

52. (d) Clearly, no two persons in the group have the same age.

53. (a) Mahima's age = 16 years $\Rightarrow x = 16$

$$\therefore \text{Lata's age} = \frac{x}{4} = 4 \text{ years.}$$

54. (b) $x + y + \frac{xy}{100}$

$$= +20 - 20 - \frac{20 \times 20}{100} = -4\%$$

Total selling price of a refrigerator and a camera = $12000 + 12000 = ` 24000$

Now, loss is 4%

$$\text{CP} \times \frac{96}{100} = 24000$$

$$\text{CP} = ` 25000$$

Loss amount = $(25000 - 24000) = ` 1000$

55. (d) Given: E is oldest, A > B, C > D.

Thus, we have the following possible arrangements.

22	21	20	19	18	17	
E >	A >	B >	F >	C >	D	...(i)
E >	A >	C >	B >	F >	D	...(ii)
E >	A >	B >	C >	F >	D	...(iii)
E >	A >	C >	D >	F >	B	...(iv)
E >	C >	D >	F >	A >	B	...(v)
E >	C >	D >	A >	F >	B	...(vi)
E >	C >	A >	B >	F >	D	...(vii)
E >	C >	A >	D >	F >	B	...(viii)

Clearly, D is 20 years old in (v) and (vi). So, (a) is possible. F is 18 years old in (ii), (iii), (iv), (vi), (vii), (viii). So, (b) is possible.

F is 19 years old in (i) and (v). So, (c) is possible.

But F is not 20 years old by any of the possibilities. So, (d) is not possible.

56. (d) Number of students failing in Mathematics

$$= 105 - 75 = 30$$

Number of students failing in English

$$= 105 - 80 = 25$$

∴ Number of students failing in 1 subject

$$= (25 + 30) - 10 = 45$$

57. (d) Two possibilities are there :

(i) Chemistry part I is available in 8 books with Chemistry part II.

or

(ii) Chemistry part II is available in 8 books but Chemistry part I is not available.

Total No. of ways

$$= 1 \times {}^6C_1 + {}^7C_3$$

$$= 6 + \frac{7 \times 6 \times 5}{3 \times 2} = 6 + 35 = 41$$

58. (c) Australia was defeated twice by Indies.

India was defeated twice by Indies.

West Indies was defeated twice by Australia.

New Zealand was defeated twice by India and twice by West Indies i.e., 4 times in all.

59. (b) Let, total number of members be 100.

Then, number of members owning only 2 cars = 20.

Number of members owning 3 cars = 40% of 80 = 32.

Number of members owning only 1 car = 100 - (20 + 32) = 48.

Thus, 48% of the total members own one car each.

60. (b) Let the original price of each book = Rs. x

$$\therefore 20x = 22(x - 0.25) + 0.70$$

$$\Rightarrow 2x = 4.8 \Rightarrow x = \text{`} 2.40$$

$$\therefore \text{He had } 20 \times 2.40 = \text{`} 48$$

61. (c) Here we have a chain of events where the conclusion of one argument becomes the premise for another. Only (c) can be concluded from the facts given in the passage that is, because Sally overslept she ran toward school and because she ran, she did not notice the hole. Choice (b) is not appropriate because there is no way to link Sally's friend to the events in the passage. Similarly, facts not included preclude (d) from being the

appropriate answer. Finally (a) not be inferred, as we do not know what Sally did later that day; she may have been released from the hospital and gone to school.

62. (b) Second last sentence mentions certain types of personalities but gives no clue about degree of strength in personality. So, (a) is ruled out. Sentence 4 indicates towards (b). Last sentence says psychological dependence is great with heroine and morphine, but doesn't specify which one has greater effect. hence (c) is ruled out. Safety doesn't mean lack of dependence only, so (d) is ruled out.

63. (b) The passage says that a company holds meetings between its employees which are like 'satsang', in which all the employees and managers have a meeting. They are all told to discuss their opinions without any preset agenda and irrespective of their position in the company. Option (b) is the only possible inference. There is no fact to support the claims mentioned in options (a) and (c). Clearly, to state something about the company's past, would require more information. Also, to say that the company is worried about its reputation in the eyes of the employees would be going so far as to say that the whole exercise is a subtle way of propaganda and nothing else. This is a strong statement and hence cannot be derived without proper backing.

64. (d) Option (d) is the correct conclusion from the paragraph. The list has been released to increase awareness as a first step. Other repercussions cannot be inferred. Options (a) and (c) are hence incorrect. Option (b) cannot be inferred as we do not know about the past.

65. (a) Statement 1 is correct as it can be inferred from the information given in the passage that companies shall comply with all the laws of land.

66. (a) Good corporate influence have positive influence on the share price of the company as mentioned in last few lines of paragraph. Corporate governance is one of criteria for the foreign institutional investors when they decide to buy a company.

67. (c) Let SP = CP = ` x

$$\text{Gain percentage} = x \times \frac{20}{100} = \frac{x}{5}$$

$$\text{Gain weight} = \frac{x}{5} \times 1000 = 200 \text{ g}$$

$$\text{Uses weight} = 1000 - 200 = 800 \text{ g}$$

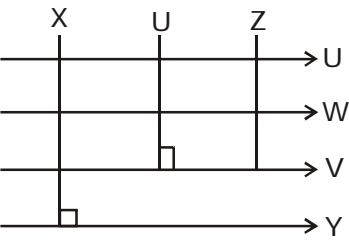
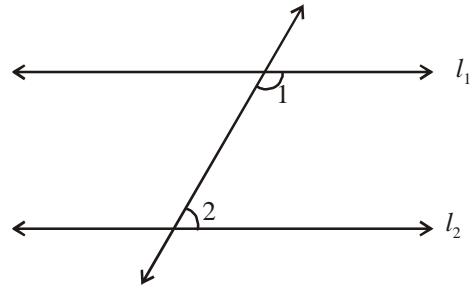
68. (d) Work done by tap B in 1 min

$$= \frac{1}{40} - \frac{1}{60} = \frac{3-2}{120} = \frac{1}{120}$$

Total time taken by the tap B to fill the tank is 120 min.

69. (b) Boy C has covered the maximum distance in minimum time. Also, he reached the 100 m mark in the shortest time. So, race was won by C.

A was ahead of B upto 70 m and then B overtake A at 70 m. Also, C is overtaking B at 40 m, where curve C crosses the curve B. So, statements I, II and III are correct.

- Boy B was running faster than C and he covered more distance than C, upto 40 m. So, it is not true that B ran very slowly from the beginning. Hence, the answer is option (b).
70. (d) For $(10 + A + B) = 12$ stations, no of tickets required, when 4 new stations are added for one way journey $= 12 \times 4 = 48$
 Also, each 4 new stations require $(16 - 1) = 15$ new tickets for one way journey.
 \therefore No. of tickets for 4 new stations $= 15 \times 4 = 60$
 Hence, total new tickets $= 60 + 48 = 108$
71. (c) Ratio of support price of wheat total that of paddy
 in 2000 - 01 $= \frac{275}{225} = \frac{11}{9} = 1.22$
 in 2001 - 02 $= \frac{350}{275} = \frac{14}{11} = 1.27$
 in 2002 - 03 $= \frac{375}{300} = \frac{15}{12} = 1.25$
 in 2003 - 04 $= \frac{425}{350} = \frac{17}{14} = 1.21$
 in 2004 - 05 $= \frac{450}{375} = \frac{18}{15} = \frac{6}{5} = 1.2$
 So, the ratio in 2001-02 is highest.
72. (d)
- 
- From above diagram, it is clear that Y, V and W are parallel.
73. (d) Since, Food A is 10% protein, 500 g of Food A will supply 50 g of protein. Similarly 250 g of Food B will supply 50 g of protein. 350 grams of Food C will supply 70 grms of protein. 200 g of Food B and 200 g of Food C will supply $40 + 40 = 80$ g of protein.
74. (c) 2 Women can occupy 2 chairs out of the first four chairs in 4P_2 ways. 3 men can be arranged in the remaining 6 chairs in 6P_3 ways.
 Hence, total no. of ways $= {}^4P_2 \times {}^6P_3 = 1440$
75. (a) Since both the premises are universal and affirmative, the conclusion must be universal affirmative and should not contain the middle term. So only I follows.
76. (d) The popularity of Ayurvedic or allopathic medicines in India is not being talked about in the statement. So, neither I nor II follows.
77. (b) l_1 and l_2 are two parallel lines and $\angle 1$ and $\angle 2$ are interior angles on the same side of the transversal.
- 
- $\angle 1 \neq \angle 2$
 $\angle 1 + \angle 2 = 180^\circ$.
 Therefore, these are supplementary angles or consecutive interior angles.
78. (c) Suppose three people have been given a, b and c number of items.
 Then, $a \times b \times c = 30$
 Now, There can be 5 cases :
Case I : When one of them is given 30 items and rest two 1 item each.
 So, number of ways for $(30 \times 1 \times 1) = \frac{3!}{2!} = 3$
 (As two of them have same number of items)
Case II : Similarly, number of ways for $(10 \times 3 \times 1) = 3! = 6$
Case III : Number of ways for $(15 \times 2 \times 1) = 3! = 6$
Case IV : Number of ways for $(6 \times 5 \times 1) = 3! = 6$
Case V : Number of ways for $(5 \times 3 \times 2) = 3! = 6$
 Here, either of these 5 cases are possible.
 Hence, total number of ways $= 3 + 6 + 6 + 6 + 6 = 27$
79. (b) Let us take books A and B as one i.e., they are always continuous.
 Now, number of books $= 4 - 2 + 1 = 3$
 These three books can be arranged in $3!$ ways and also A and B can be arranged in 2 ways among themselves.
 So, number of ways when books A and B are always continuous $= 2 \times 3!$
 Total number of ways of arrangement of A, B, C and D $= 4!$
 Hence, number of ways when A and B are never continuous $=$ Total number of ways – number of ways when A and B always continuous
 $= 4! - 2 \times 3! = 12$
 We have: E < A < B, A < D < B.
 Since C is the tallest, so we have: E < A < D < B < C.
 Clearly, D lies in the middle.

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ISBN : 9789385846656

Max. Marks : 40

No. of Qs. 20

Time : 20 min.

Date : / /

- 1.** Which of the following statements about food chains and energy flow through ecosystem is false?

 - a single organism can feed at several trophic levels
 - detrivores feed at all trophic levels except the producer level
 - the lower the trophic level at which an organism feeds,
 - those are not producers are consumers

2. Biomagnification refers to

 - absorption of a chemical from the media to concentrations in the organisms tissue that are greater than in surrounding environment
 - tendency of some chemicals to become increasingly concentrated at successively higher trophic levels in a food chain
 - the tendency for a compound to accumulate in an organisms tissue
 - all the statements are incorrect

3. Which of the following character make a species susceptible to extinction?

 - large population size
 - feeding at high trophic level in food chain
 - wide range of distributions
 - small body size

4. Choose the incorrect statement:

 - Nilgiri biosphere reserve is the 1st biosphere reserve in India
 - all land with tree cover of canopy density of between 10 to 40% is known as open forest
 - Western ghats and Eastern Himalayas are two hotspots in India
 - the Earth summit held in 1992 at Rio de Janeiro to prevent ozone depletion at stratosphere

5. At the earth summit held in Rio de Janeiro, a globalization plan was adopted with aim of integrating environmental imperatives and developmental aspirations. The Global Action Plan is known as

 - Agenda 22
 - Agenda 32
 - Agenda 21
 - Agenda 31

6. About 99% of all liquid fresh water on Earth is found in

 - lakes, including the Great Lakes of North America
 - rivers such as the Amazon, Nile, and Mississippi watersheds
 - underground aquifers
 - the upper few meters of topsoil

7. The realized niche of an organism is

 - the area a species can occupy in the face of exploitative competition
 - the habitat of a species within a community resulting from clumping
 - the habitat that exists in nature as opposed to the ideal

8. Consider the following pairs:

Protected area	Well-known for
1. Bhiterkanika, Orissa	— Salt Water Crocodile
2. Desert National Park,	— Great Indian Bustard
	Rajasthan
3. Eravikulam, Kerala	— Hoolak Gibbon

Which of the pairs given above is / are correctly matched ?

 - 1 only
 - 1 and 2
 - 2 only
 - 1, 2 and 3

9. How does National Biodiversity Authority (NBA) help in protecting the Indian agriculture?

 - NBA checks the biopiracy and protects the indigenous and traditional genetic resources.
 - NBA directly monitors and supervises the scientific research on genetic modification of crop plants.
 - Application for Intellectual Property Rights related to genetic/biological resources cannot be made without the approval of NBA.

Which of the statements given above is /are correct?

 - 1 only
 - 2 and 3
 - 1 and 3
 - 1, 2 and 3

10. Three of the following criteria have contributed to the recognition of Western Ghats , Sri Lanka and Indo Burma regions as hotspots of biodiversity

 - Species richness
 - Vegetation density
 - Endemism
 - Ethno-botanical importance
 - Threat perception
 - Adaption of flora and fauna to warm and humid conditions

Which three of the above are correct criteria in this context?

 - 1, 2 and 6
 - 2, 4 and 6
 - 1, 3 and 5
 - 3, 4 and 6

11. Biodiversity forms the basis for human existence in the following ways

 - Soil formation
 - Prevention of soil erosion
 - Recycling of waste
 - Pollination of crops

Select the correct answer using the codes given below:

 - 1, 2 and 3
 - 2, 3 and 4
 - 1 and 4
 - 1, 2, 3 and 4

12. Which of the following can be threats to the biodiversity of a geographical area?

 - Global warming
 - Fragmentation of habitat
 - Invasion of alien species
 - Promotion of vegetarianism

Select the correct answer using the codes given below :

 - 1, 2 and 3
 - 2 and 3
 - 1 and 4
 - 1, 2, 3 and 4

HINTS & EXPLANATIONS

1. **(b)** In ecology, energy flow, also called the calorific flow, refers to the flow of energy through a food chain. In an ecosystem, ecologists seek to quantify the relative importance of different component species and feeding relationships.
2. **(b)** Biomagnification, also known as bioamplification or biological magnification, occurs when the concentration of a substance, such as DDT or mercury, in an organism exceeds the background concentration of the substance in its diet. This increase can occur as a result of:
 - Persistence – where the substance can't be broken down by environmental processes
 - Food chain energetics – where the substance concentration increases progressively as it moves up a food chain
 - Low or non-existent rate of internal degradation or excretion of the substance – often due to water-insolubility.
3. **(b)** Feeding at high trophic level in food chain make species susceptible to extinction.
4. **(b)** All land with tree cover canopy density ranges between 10 % to 40 % is known as open forest.
5. **(c)** Agenda 21 is a non-binding, voluntarily implemented action plan of the United Nations with regard to sustainable development. It is a product of the UN Conference on Environment and Development (UNCED) held in Rio de Janeiro, Brazil, in 1992. It is an action agenda for the UN, other multilateral organizations, and individual governments around the world that can be executed at local, national, and global levels. The “21” in Agenda 21 refers to the 21st Century. It has been affirmed and modified at subsequent UN conferences.
6. **(c)** An underground aquifer is a body of saturated rock through which water can easily move. Aquifers must be both permeable and porous and include such rock types as sandstone, conglomerate, fractured limestone and unconsolidated sand and gravel. Fractured volcanic rocks such as columnar basalts also make good aquifers. The rubble zones between volcanic flows are generally both porous and permeable and make excellent aquifers.
7. **(d)** The realized niche of an organism is the life pattern that the organism actually assumes.
8. **(b)**
 - Bhiterkanika, Orissa is a protected area for salt water crocodile, where breeding is the main purpose of that protected area.
 - Great Indian Bustard is protected in desert area of Rajasthan.
9. **(d)** National Biodiversity Authority (NBA) checks the biopiracy and protects the indigenous and traditional genetic resources. It directly monitors and supervises the scientific research on genetic modification of crop plants application for intellectual property Rights related to genetic biological resources cannot be made without the approval of NBA.
10. **(c)** To qualify as a hotspot, a region must meet two strict criteria: it must contain at least 1,500 species of vascular plants (> 0.5 percent of the world's total) as endemics, and it has to have lost at least 70 percent of its original habitat. So we choose Species richness as well as Endemism. Along with this Threat perception is necessary to take, because it makes the base of this concept. Adaptation of flora is an arbitrary option, Ethno-botanical importance does nothing with the Biodiversity Hotspot selection criteria, vegetation Density is also discarded.
11. **(d)** Biological diversity helps in the formation and maintenance of soil structure and the retention of moisture and nutrient levels. Biodiversity supports ecosystem services including air quality, climate water purification, pollination, and prevention of erosion.
12. **(a)** Except promotion of vegetarianism all other acts are threats to the biodiversity of a geographical area.
13. **(c)** In ecology, climax community, or climatic climax community, is a historic term that expressed a biological community of plants and animals and fungi which, through the process of ecological succession — the development of vegetation in an area over time — had reached a steady state. This equilibrium was thought to occur because the climax community is composed of species best adapted to average conditions in that area.
14. **(b)** Since a community comprises all the species that occur at a particular location, one of the most important things about communities is how the species interact with one another. Four different types of interactions between different species (inter specific interactions) have been identified:
 - Competition** -Two organisms mutually harm one another
 - Predator-prey or parasite-host- One organism benefits, the other is harmed

Mutualism- Both organisms benefit

Commensalism- One organism benefits, the other is not affected

15. (c) 33%

16. (b) Green muffler are the barriers grown near noisy places to reduce the impact of noise. Normally 4 to 5 rows of green plants are grown near noisy places like highways or industrial area.

- 17. (a)** Ocean is considered to be the largest ecosystem among all the ecosystems on earth.
- 18. (b)** Periyar National Park is famous tiger reserve of India
- 19. (a)** Countries like China, Mexico and Brazil are way ahead of India in terms of their per capita contribution to the overall emissions.
- 20. (d)** All of the above statements are true.

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10 Full Mock TESTS

ISBN : 9789385846656

Max. Marks : 40

No. of Qs. 20

Time : 20 min.

Date :/...../.....

1. Consider the following statements:

1. FICCI is the largest and oldest apex business organization in India.
2. FICCI is established in 1957.

Which of the statements given above is/are in correct?

- | | |
|-------------|------------|
| (a) 1 only | (b) 2 only |
| (c) 1 and 2 | (d) None |

2. Which of the following best defines a floating-rate bond?

1. A bond with a fixed interest rate and has better yield than varying interest rate bond
2. A bond with a fixed interest rate and has lower yield than varying interest rate bond
3. A bond with a varying interest rate and has better yield than fixed interest rate bond
4. A bond with a varying interest rate and has lower yield than fixed interest rate bond

3. Consider the following statements:

1. Y. V. Reddy is the Chairman of the 14th Finance Commission.
2. Madhya Pradesh is the first state to pass the Food Security Act.

Which of the statements given above is/are correct?

- | | |
|-------------|------------|
| (a) 1 only | (b) 2 only |
| (c) 1 and 2 | (d) None |

4. Too much import of gold by India adversely affects:

1. Trade balance
2. Current account balance
3. Capital account balance

Choose the correct option from the codes given below:

- | | |
|----------------|-------------|
| (a) 1 and 2 | (b) 2 and 3 |
| (c) 1, 2 and 3 | (d) 1 and 3 |

5. Consider the following statements:

1. RBI has proposed setting up of a trade receivables and credit exchange (TCE) for financing micro, small and medium enterprises.
2. Libor is interest rate at which banks can borrow funds, in marketable size, from other banks in the London interbank market.

Which of the statements given above is/are correct?

- | | |
|-------------|------------|
| (a) 1 only | (b) 2 only |
| (c) 1 and 2 | (d) None |

6. Consider the following statements:

1. Jawahar Rozgar Yojana was launched in the seventh five-year plan.
2. Small-scale and food processing industries were given new impetus in seventh five-year plan.

Which of the statements given above is/are correct?

- | | |
|-------------|------------|
| (a) 1 only | (b) 2 only |
| (c) 1 and 2 | (d) None |

7. Match List I with List II and select the correct answer using the codes given below the lists.

List I

(Plan model)

A. Bombay plan

List II

(Proposer)

1. Jai Prakash Narayan

B. Gandhian plan

C. People's plan

D. Sarvodaya plan

2. M N Roy

3. Sriman Narayan

4. Birla and Tata Groups

Choose the correct option:

- | | | | |
|-------|---|---|---|
| A | B | C | D |
| (a) 2 | 4 | 3 | 1 |
| (b) 2 | 3 | 4 | 1 |
| (c) 4 | 2 | 3 | 1 |
| (d) 4 | 3 | 2 | 1 |

8. Consider the following statements:

1. The highest body for formulating policy matters in India is the Planning Commission of India.
2. The secretary of the Planning Commission of India is also the secretary of the National Development Council of India.

Which of the statements given above is/are correct?

- | | |
|-------------|------------|
| (a) 1 only | (b) 2 only |
| (c) 1 and 2 | (d) None |

9. Consider the following statements:

1. PURA model of economic model was advocated by Dr. APJ Abdul Kalam.
2. PURA model of economic development is mainly aimed to bridge the gap between rural-urban divide.

Which of the statements given above is/are correct?

- | | |
|-------------|------------|
| (a) 1 only | (b) 2 only |
| (c) 1 and 2 | (d) None |

10. Consider the following statements:

1. The state sets broad parameters and goals for the economy.
2. The targets to be achieved are broadly set by the state.
3. The plan is made for the specific time period of about 15 years.

Which of the statements given above is/are correct about the indicative planning?

- | | |
|----------------|-------------|
| (a) 1, 2 and 3 | (b) 1 and 2 |
| (c) 1 and 3 | (d) only 1 |

11. Consider the following statements about new corporate social responsibility rules:

1. They will apply to companies with at least ₹ 5 crores net profit, or ₹ 1,000 crores turnover or ₹ 500 crores net worth.
2. New CSR rules would come into effect from April 1, 2014.
3. The companies are required to spend 4% of their 3 years average annual net profit on CSR activities in each financial year.

Which of the statements given above is/are correct?

- | | |
|-------------|----------------|
| (a) 1 only | (b) 2 and 3 |
| (c) 1 and 2 | (d) 1, 2 and 3 |

12. As per the report released by the Union Ministry of Drinking Water and Sanitation, which Indian state became the only state in India to achieve 100% sanitation?

- | | |
|-------------|------------|
| (a) Mizoram | (b) Sikkim |
|-------------|------------|

HINTS & EXPLANATIONS

1. (a) FICCI is established in 1927.
2. (d) Floating rate bonds have variable interest rate and protect investors against a rise in interest rates (which have an inverse relationship with bond prices). They also carry lower yields than fixed notes of the same maturity.
3. (a) Y. V. Reddy is the Chairman of the 14th Finance Commission and Chhattisgarh is the first state to pass the food Security Act.
4. (a) Too much of gold imports affect balance of trade (exports less imports) and current account balance.
5. (c) Libor is the rate at which banks in London lend money to each other for the short-term in a particular currency. In other words, it is an interest rate at which banks can borrow funds, in marketable size, from other banks in the London interbank market. World's most widely used benchmark for short-term interest rates. RBI has proposed setting up of a trade receivables and credit exchange (TCE) for financing micro, small and medium enterprises.
6. (c) Jawahar Rozgar Yojna was launched on April 1, 1989 by merging National Rural Employment Programme (NREP) and Rural Landless Employment Guarantee Programme (RLEG) at the end of seventh five-year plan. In the seventh five-year plan, the small-scale and food processing industries were given new impetus as the plan laid stress on improving the productivity level of industries by upgrading of technology.
7. (d) The Bombay Plan is the name commonly given to a World War II-era set of proposals for the development of the post-independence economy of India. The plan, published in 1944/1945 by eight leading Indian industrialists including Tata & Birla Group. Shri Shriman Narayan was a renowned interpreter of Gandhian economic thought whose "Gandhian Plan for Economic Development for India" was published as early as 1944. In 1944, Roy published People's Plan for Economic Development of India. Sarvodaya plan was given by Jai Prakash Narayan for the upliftment of all people.
8. (b) The highest body of planning in India is not Planning Commission but Parliament followed by NDC. The secretary of the Planning Commission of India is also the secretary of the National Development Council of India.
9. (c) Provision of Urban Amenities to Rural Areas (PURA) is a strategy for rural development in India to bridge the gap between rural and urban India. This concept was given by former president Dr. A.P.J. Abdul Kalam. PURA proposes that urban infrastructure and services be provided in rural hubs to create economic opportunities outside of cities.
10. (b) Indicative planning is a form of economic planning implemented by a state in an effort to solve the problem of imperfect information in market and mixed economies in order to increase economic performance. Regarding to the indicative planning, state sets broad parameters and goal for the economy and the targets to be achieved are broadly set by the state.
11. (c) New CSR rules would come into effect from April 1, 2014. They will apply to companies with at least ₹ 5 crores net profit, or ₹ 1,000 crores turnover or ₹ 500 crores net worth. The companies are required to spend 2% of their 3 years average annual net profit on CSR activities in each financial year.
12. (b) As per the report released by the Union Ministry of Drinking Water and Sanitation, Sikkim became the only state in India to achieve 100% sanitation in rural and urban households, schools, sanitary complexes and Aanganwadi centres.
13. (a) Uttar Pradesh government launched "Samajwadi Pension Scheme" to benefit 40 lakh rural families living below poverty line. The new pension scheme will replace the Rani Laxmibai Pension Yojana.
14. (c) Janani Suraksha Yojana is centrally sponsored scheme launched on 12 April 2005. It aims to decrease the neonatal and maternal deaths happening in the country by promoting institutional delivery of babies.
15. (c) Under MNREGA, no. of workdays for tribals has increased from 100 to 150 days. Tribals who have received land rights under the Forest Rights Act, 2006 will be eligible for additional 50 days of wage employment. The beneficiaries would be those who have completed 100 workdays in that particular financial year. To distinguish this category from regular MGNREGA workers, they will be given a job card of a different colour.
16. (d) Hedge funds invest in a diverse range of markets and use a wide variety of investment styles and financial instruments. Hedge funds are open only to certain types of investors in a country specified by the regulator and cannot be offered or sold to the general public. Legally, hedge funds are most often set up as private investment partnerships that are open to a limited number of investors and require a very large initial minimum investment.
17. (c) Zero-based budgeting is an approach to planning and decision-making which reverses the working process of traditional budgeting. In zero-based budgeting, every line item of the budget must be approved, rather than only changes. During the review process, no reference is made to the previous level of expenditure. Regarding zero Base Budgeting (ZBB) Existing Government programme can be discarded under ZBB if they are found to be outdated. Moreover ZBB is difficult to be applied to Human Development programmes as the outcome of such programmes is intangible in nature.
18. (a) "taxation over taxes" or "cascading-effect" of the taxes adds to the deadweight loss i.e. slump in total surplus of supply chain consisting of supplier, manufacturer, retailer and consumer. Due to cascading tax imposition leads to a disproportionate increase in prices by an extent more than the

- rise in the tax.
19. (b) Disinvestment is a process in which off-loading of government shares is done to private companies. A company or government organization will divest an asset or subsidiary as a strategic move for the company, planning to put the proceeds from the divestiture to better use that garners a higher return on investment.
20. (c) Navratna was the title given originally to 9 Public Sector Enterprises (PSEs) identified by the government in 1997 as public sector companies that have comparative advantages enjoying greater autonomy to compete in the global market so as to support in their drive to become global giants. However, the number of PSEs (Public Sector Enterprises) having Navaratna status is now more than 15 industries.

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GENERAL SCIENCE

MEASUREMENT

- Each base quantity is in terms of a certain basic, arbitrarily chosen but properly standardised reference standard called unit (such as metre, kilogram, second, ampere, kelvin, mole and candela). The units for the fundamental or base quantities are called fundamental or base units.
- **SI Base Units**

No.	Base quantity	SI units	Symbol
1	length	meter	m
2	mass	kilogram	kg
3	time	second	s
4	electric current	ampere	A
5	temperature	kelvin	K
6	amount of substance	mole	mol
7	luminous intensity	candela	cd

In addition there are two SI supplementary units the radian, the SI unit of the quantity plane angle; and the steradian, the SI unit of the quantity solid angle. Supplementary units are as follows:

SI Supplementary Units

No.	Supplementary quantity	Name	Symbol
8	plane angle	radian	rad
9	solid angle	steradian	sr

- **Angstrom:** An angstrom is a unit of length used to measure small things such as the wavelengths of light, atoms and molecules. Ten billion angstroms equal 1 meter $1 \text{ \AA} = 10^{-10} \text{ m}$.
- **Fermi:** A unit of length used to measure nuclear distances $= 10^{-15} \text{ meter}$.
- **Some SI Derived Units :**
 - (i) Velocity $\rightarrow \text{m/s}$
 - (ii) Acceleration $\rightarrow \text{m/s}^2$
 - (iii) Force $\rightarrow \text{kg m/s}^2$ (newton)
 - (iv) Work $\rightarrow \text{Nm}$ (Joule)
 - (v) Power $\rightarrow \text{Joule/s}$ (watt)
- By Newton's law of motion.
Weight = Mass \times Acceleration due to gravity
In space the acceleration due to gravity (g) is zero and hence, the weight of the body is zero.
- The degree of hotness or coldness is called temperature.
- Thermometer is the device to measure temperature.

- Clinical thermometer is used to measure the temperature of a human body.
- The SI unit of density is kg/m^3 . The density of gases and liquids varies with the change in temperature.
 $\text{Density of water} = 1 \text{ gm/cm}^3 = 1000 \text{ kg/m}^3$.
 $\text{Mercury} = 13.6 \text{ gm/cm}^3$.
- The relative density (R.D.) of a substance is defined as the ratio of the density of the substance to the density of water.
- The variations in the density of gases and liquids with temperature result in convection currents in liquids and gases.
- A hydrometer is a device to measure density of liquids.

WORK AND ENERGY

- **Work :** In physics work is defined if force applied on object displaces the object in direction of force. We define the work as Product of the force and displacement in the direction of applied force or Product of displacement and force in the direction of displacement.
 $W = \text{Force} \times \text{displacement}$
- **Unit of Work :** The SI unit of force is a newton and the unit of length is a metre (m). So the SI unit of work is newton-metre which is written as Nm. This unit (Nm) is also called joule (J), i.e. $1 \text{ joule} = 1 \text{ newton} \cdot 1 \text{ metre}$
Abbreviated, this is $1 \text{ J} = 1 \text{ Nm}$
When a force of 1 newton moves a body through a distance of 1 metre in its own direction the work done is 1 Joule.
- **Energy :** Anything which has the capacity to do work is said to possess energy. This implies that work can be done only at the expense (cost) of energy i.e., to do work, we need to spend energy, whatsoever be its form.
Unit of Energy : Same as that of work i.e., Joules(J)
Relation between kinetic energy and momentum:

$$p = \sqrt{2mk}$$

where p = momentum, k = kinetic energy, m = mass

(i) For same momentum :

K-energy varies inversely as the mass $K \propto \frac{1}{m}$

(ii) For same K-energy

Momentum varies directly as the square root of mass of the body. $p \propto \sqrt{m}$

- **Power :** The time rate of doing work is defined as power (P). If equal works are done in different times, power will be different. More quickly work is done, power will be more.

$$\text{Power} = \frac{\text{work}}{\text{time}}$$

- **Unit of Power :** The unit of power is the joule per second and this is called the watt (W). When large amounts of power are involved, a more convenient unit is the kilowatt (kW) where $1 \text{ kW} = 1000 \text{ W}$.

$$1 \text{ Megawatt} = 10^6 \text{ watt}$$

Power was also measured earlier in a unit called horse power. Even these days, the unit of horse power is in common use.

$$1 \text{ horse power} = 746 \text{ watt}$$

The unit kilowatt-hour means one kilowatt of power supplied for one hour. It is, therefore, the unit of energy.

$$1 \text{ KWh} = (1000 \text{ J/s}) \times 60 \times 60 \text{ s} = 3.6 \times 10^6 \text{ J}$$

MORE ABOUT SOLID, LIQUID AND GASES

- **Surface Tension :** A molecule of the liquid near the surface is attracted by fewer molecules of the liquid (there is only air on one side) than molecule deep inside. Therefore, the molecule of the free surface has less attractive force than the deeper one, and so it is energetically unfavourable for a liquid to have a surface. This property of liquid surface is called surface tension.
- When the water touches the glass, it ‘rises up’ the glass surface then forms a concave meniscus.
- Mercury behaves in a different manner. Mercury molecules are attracted more strongly to other mercury molecules than they are attracted to glass molecules. Here, the cohesive force is stronger than adhesive force. That is why, when mercury touches the glass surface, it ‘rises down’ the glass forming a convex meniscus.
- **Pascal Law :** When pressure is applied to an enclosed fluid, it is transmitted equally to all parts of the fluid. This is called Pascal’s law.
- Pascal’s law holds, both for liquid and gases.
- **Buoyancy :** Every liquid exerts an upwards force on objects immersed in it. This upward force is called Buoyant force and this phenomenon is called Buoyancy.
- **Archimedes’ Principle** states that the buoyant force is equal to the weight of this displaced liquid. The buoyant force exerted by a liquid, therefore, depends on the volume of the object immersed on it.
- When a body is wholly or partially immersed in a liquid, there is apparent loss in weight of the body, which is equal to the weight of the displaced liquid by the body.
- The rise or depression of liquids in small diameter tubes is called capillarity.
- The faster the air, the lower the pressure.
- **Different Temperature Scales :**

S.No.	Name of the scale	Symbol for each degree	Lower fixed point (LFP)	Upper fixed point (UFP)	Number of divisions on the scale
1	Celsius	°C	0°C	100°C	100
2	Fahrenheit	°F	32°F	212°F	180
3	Kelvin	K	273.15 K	373.15 K	100

- **Specific Heat Capacity :** The specific heat capacity of a substance is the amount of energy (in joule) that is needed to raise the temperature of 1 kg of the substance by 1°C.
 Sp. heat of water = 1 cal/gm °C = 4200 J/kg °C.
 Sp. heat of ice = 0.5 cal/gm °C.
 = 2100 J/kg °C.

- **Latent Heat :** The latent heat of a substance is that heat which changes the physical state of the substance but does not rise its temperature. Latent heat is of two types :
 1. Latent heat of melting 2. Latent heat of vaporisation
- The amount of thermal energy required to change the state of substance is given by the following formula :

$$Q = m \times L$$

where, m = mass of the substance

L = Latent heat of the substance

- The coefficient of linear expansion (α_ℓ), superficial area expansion and volume expansion (α_v) are defined by the

$$\text{relations : } \frac{\Delta\ell}{\ell} = \alpha_\ell \Delta T ; \frac{\Delta A}{A} = \beta \Delta T ; \frac{\Delta V}{V} = \alpha_v \Delta T$$

where $\Delta\ell$ and ΔV denote the change in length ℓ and volume V for a change of temperature ΔT . The relation between them is : $\alpha_v = 3 \alpha_\ell$; $\beta = 2 \alpha_\ell$

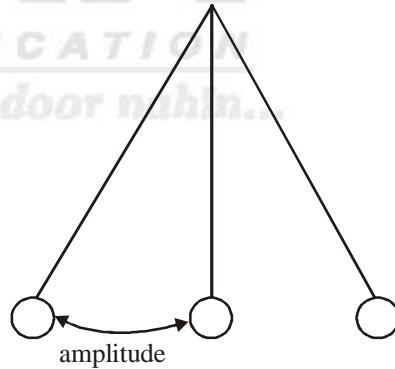
- Newton’s Law of Cooling says that the rate of cooling of a body is proportional to the excess temperature of the body over the surrounding.

SOUND

- **Sound :** Sound is a form of energy which produces a sensation of hearing in our ears.

Frequency : The frequency of an oscillating particle is the total number of oscillations made by the pendulum/particle in one second.

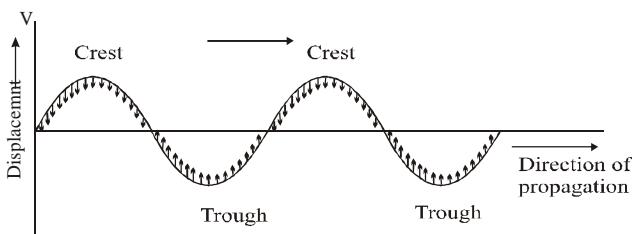
Amplitude : The maximum distance travelled by a pendulum towards any one side is from its initial position.



Sound is emitted by vibrating source and is transmitted through a material medium producing sensation of hearing in our ears. The motion of a vibrating source sets up waves in the surrounding medium.

- **Types of Waves :** On the basis of the requirement of medium, waves are of two types
 (i) Mechanical waves (ii) Electromagnetic waves
- **(i) Mechanical Waves :** A mechanical wave is a periodic disturbance which requires a material medium for its propagation. The properties of these waves depend on the medium so they are known as elastic waves, such as sound-waves, water waves, waves in stretched string. On the basis of motion of particles the mechanical waves are classified into two parts.
 (a) Transverse wave (b) Longitudinal wave
- **(a) Transverse wave :** As shown in figure, when the particles of the medium vibrate in a direction perpendicular to the direction of propagation of the wave, the wave is known as

the transverse wave. For example, waves produced in a stretched string, waves on the surface. These waves travel in form of crests and troughs. These waves can travel in solids and liquids only.



(b) Longitudinal wave : As shown in figure, when the particles of the medium vibrate along the direction of propagation of the wave then the wave is known as the longitudinal wave. For example sound wave in air, waves in a solid rod produced by scrabbing.

These waves travel in the form of compressions and rarefactions. These waves can travel in solids, liquids and gases.

- Amplitude (A) is defined as the maximum displacement.
- The frequency v of the wave is the reciprocal of its time

$$\text{period } T, \text{i.e., } v = \frac{1}{T}$$

Wave velocity can be defined as the distance covered by a wave in one time period. Therefore,

$$\begin{aligned} \text{Wave velocity} &= \frac{\text{Distance covered}}{\text{Time taken}} = \frac{\text{Wavelength}}{\text{Time taken}} \\ \text{or } V &= \lambda/T \end{aligned} \quad \dots\dots (i)$$

As $v = \frac{1}{T}$, eq. (i) connecting V and λ in terms of the frequency v can be written as

$$V = v\lambda \quad \dots\dots (ii)$$

or Wave velocity = Frequency \times Wavelength

Thus, the wave velocity is the product of frequency and wavelength. It holds true for any periodic wave, both for transverse or longitudinal waves.

ELECTROMAGNETIC WAVES

An accelerated charge produces a sinusoidal time varying magnetic field, which in turn produces a sinusoidal time varying electric field. The two fields so produced mutually perpendicular and are sources to each other. "The mutually perpendicular time varying electric and magnetic fields constitute electromagnetic waves which can propagate through empty space.

Characteristics of Electromagnetic waves

- (i) The electric and magnetic fields satisfy the following wave equations

$$\frac{\partial^2 E}{\partial x^2} = \mu_0 \epsilon_0 \frac{\partial^2 E}{\partial t^2} \text{ and } \frac{\partial^2 B}{\partial x^2} = \mu_0 \epsilon_0 \frac{\partial^2 B}{\partial t^2}$$

where E and B are electric and magnetic field respectively.

- (ii) Electromagnetic waves travel through vacuum with speed of light i.e. $c = 3 \times 10^8$ m/s.
- (iii) The electric and magnetic fields of an electromagnetic wave are perpendicular to each other and also perpendicular to the direction of wave propagation. Hence, these are **transverse waves**.

- (iv) The instantaneous magnitudes of \vec{E} and \vec{B} in an electromagnetic waves are related by the expression

$$\frac{\vec{E}}{\vec{B}} = C.$$

- (v) Electromagnetic waves carry energy. The rate of flow of energy crossing a unit area is described by the poynting vector \vec{S} , where $\vec{S} = \frac{1}{\mu_0} \vec{E} \times \vec{B}$.

- (vi) Electromagnetic waves obey the principle of superposition.

Radar : In this instrument radio waves of very short wavelength are used to locate the enemy aircraft or ship. A concave transmitter mounted on rotating platform sends radio waves in all directions. The radiowaves on striking the aircraft or ship are reflected back. The reflected radiowaves are received by concave receiver, which is mounted at a small angle with the transmitter. On receiving the radio waves, the position of enemy air-craft can be located on a monitor screen as a bright spot.

- **Applications of ultrasound :** The ultrasound is commonly used for medical diagnosis and therapy, and also as a surgical tool. It is also used in a wide variety of industrial applications and processes. Some creatures use ultrasound for information exchange and for the detection and location of objects. Also some bats are found to use ultrasound for navigation and to locate food in darkness or at a place where there is inadequate light for vision (method of search is called echolocation).

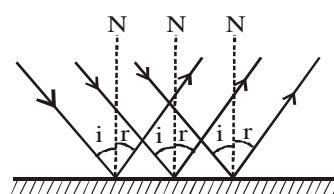
LIGHT

- Light is that form of energy which enables people to 'see' things. For a person to see any object, light energy must enter the eye. This energy is converted into a 'picture' in a very complex process, but a simplified version is as follows:

- (a) light enters the eye through a 'hole' in the iris, called the pupil,
- (b) the crystalline lens focusses the light to form a real, inverted image on the retina,
- (c) energy is collected by the rods and cones making up the retina.
- (d) this energy is transmitted as electrical impulses via the optic nerve to the brain,
- (e) the brain re-inverts the image and produces a 'picture'.

- **Reflection :** When light rays strike the boundary of two media such as air and glass, a part of light is turned back into the same direction. This is called reflection of light.

Reflection \rightarrow Specular reflection (on smooth surface)
 \rightarrow Diffuse reflection (on rough surface)



REFRACTION

Whenever a wave is bounced back into same medium at an interface reflection is said to have occurred. Transmission of a wave into the second medium at an interface is called refraction.

- Twinkling of stars, appearance of sun before actual sunrise and after actual sunset etc. are due to atmospheric refraction.
- **Rainbow :** Rainbows are generated through refraction and reflection of light in small rain drops. The sun is always behind you when you face a rainbow, and that the center of the circular arc of the rainbow is in the direction opposite to that of the sun. The rain, of course, is in the direction of the rainbow i.e. rain drops must be ahead of you and the angle between your line-of-sight and the sunlight will be $40^\circ - 42^\circ$.
- **Moon is seen red during total lunar eclipse**
Solar radiation will be refracted when passing through the earth's atmosphere. Therefore part of the sunlight can still reach the shadow of the earth. Besides, the earth atmosphere scatters most of the blue light, so there will be more red light reaching the moon. The red light will be reflected back to earth. That is the reason why you can see a red moon rather than total darkness.

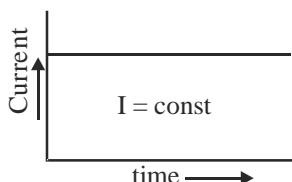
ELECTRICITY

- The electrical devices we encounter most often in modern life such as computers, lights and telephones involve moving charges which we call electric currents.
- **Electric Current :** We define the electric current, or simply the current, to be the net amount of positive charge passing per unit time across any section through the conductor in the sense from the positive toward the negative terminal.
- The SI unit of current is the ampere (A), where $1\text{A} = 1\text{C/s}$ that is, 1A of current is equivalent to 1C of charge passing through the surface in 1s . In practice, smaller units of current are often used, such as the milliampere ($1\text{mA} = 10^{-3}\text{ A}$) and the microampere ($1\mu\text{A} = 10^{-6}\text{ A}$)
- If the charge on an electron is e and n electrons pass through a point in time t then the total charge passing through that point will be $Q = ne$. Therefore the current

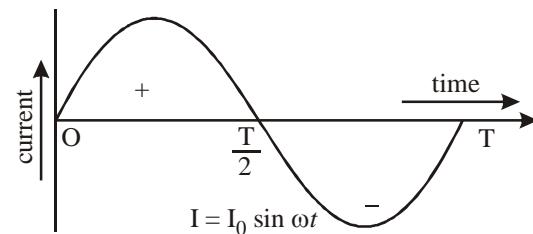
$$I = \frac{ne}{t} \quad \text{where, } e = 1.6 \times 10^{-19} \text{ coulomb.}$$

Types of Current

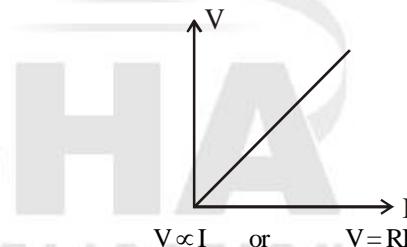
- (a) **Direct current :** The current whose magnitude and direction does not vary with time is called direct current (dc). The various sources are cells, battery, dc dynamo etc.



- (b) **Alternating current:** The current whose magnitude continuously changes with time and periodically changes its direction is called alternating current. It has constant amplitude and has alternate positive and negative halves. It is produced by ac dynamo. In India AC supply is at 50 Hz.



- **Resistance :** Opposition to electric current depends on the type of material, its cross-sectional area, and its temperature. It is technically known as resistance. (It can be said that conductors have low resistance and insulators have very high resistance.)
- **Ammeter :** Determines the value of current flowing in the circuit. The resistance of ammeter is small and it is used in series with the circuit.
- **Voltmeter :** Determines the potential difference between two points in the circuit. Its resistance is high and it is used in parallel with the resistance wire.
- **Ohm's law :** According to Ohm's law "The current passing through a conductor is directly proportional to the potential difference at its ends, provided the physical conditions of the conductor remain unchanged."



where R is a constant which is called resistance.

$$\text{Unit of resistance } R = \frac{V}{I} = \frac{\text{volt}}{\text{ampere}} = \text{ohm } (\Omega)$$

- **Fuse wire :** Fuse is a thin wire made an alloy of low melting point and low resistance. When the current exceeds the allowed limit in the circuit, the fuse wire melts due to the heating and the circuit gets disconnected, resulting into zero current in the circuit. Because of this the possibility of fire or accident is prevented.

Separate fuses are used for different circuits in the houses. Fuse wire is always connected to the phase wire. Once the fuse wire is damaged, it is replaced for normal flow of current.

CAPACITORS AND CAPACITANCE

A **capacitor** or **condenser** is a device that stores electrical energy. It generally consists of two conductors carrying equal but opposite charges.

The ability of a capacitor to hold a charge is measured by a quantity called the **capacitance**.

BINDING ENERGY

Binding energy of a nucleus is the energy with which nucleons are bound in the nucleus. It is measured by the work required to be done to separate the nucleons an infinite distance apart from the nucleus, so that they may not interact with one another.

NUCLEAR FORCE

It is the force acts in the nucleus between the nucleons and is responsible for binding the nucleon.

RADIOACTIVITY

It is the spontaneous disintegration of the heavy nucleus of an atom (It occurs without external provocation).

It is a process by which an unstable nuclei achieves stability.

NUCLEAR REACTION

Nuclear reaction obeys following conservation laws :

- (1) Charge conservation
- (2) Conservation of linear momentum
- (3) Conservation of angular momentum
- (4) Conservation of energy (Rest mass energy + K.E.)

Nuclear Reaction are of two types:-

(a) Nuclear Fission (By Otto Hans and Fstrassmann)

Nuclear fission is the disintegration of a heavy nucleus upon bombardment by a projectile, such that the heavy nucleus splits up into two or more segments of comparable masses with an enormous release of energy.

(b) Nuclear Fusion

Nuclear fusion is the fusion of two or more light nuclei to form a heavy nucleus with a release of huge amount of energy. The nuclear fusion reaction, which is the source of the energy of sun/star are proton-proton cycle.

USES OF ELECTROMAGNETIC WAVES

The following are some of the uses of electromagnetic waves

1. **Radio waves** are used in radio and T.V. communication systems.
2. **Microwaves** are used in microwave oven.
3. **Infrared radiations** are used (a) in revealing the secret writings on the ancient walls (b) in green houses to keep the plants warm (c) in warfare, for looking through haze, fog or mist as these radiations can pass through them.
4. **Ultraviolet radiations** are used in the detection of invisible writing, forged documents, finger prints in forensic laboratory and to preserve the food stuffs.
5. The **study of infrared, visible and ultraviolet radiations** help us to know through spectra, the structure of the molecules and arrangement of electrons in the external shells.
6. **X-rays** can pass through flesh and blood but not through bones. This property of X-rays is used in medical diagnosis, after X-rays photographs are made.
The study of X-rays has revealed the atomic structure and crystal structure.
7. The study of **γ -rays** provides us valuable information about the structure of the atomic nuclei.
8. **Super high frequency electromagnetic waves** (3000 to 30,000 MHz) are used in radar and satellite communication.
9. **Electromagnetic waves (frequency 50 to 60 Hz)** are used for lighting. These are weak waves having wavelength 5×10^6 to 6×10^6 m and can be produced from A.C. circuits.

EMISSION OF ELECTRON

Electrons from the metal surface are emitted by anyone of the following physical processes :

- (i) **Thermionic emission** : The emission of electrons by suitably heating the metal surface.
- (ii) **Field emission** : The emission of electrons by applying very strong field of the order of 10^8 Vm^{-1} to a metal.
- (iii) **Photo-electric emission** : The emission of electrons when light of suitable frequency illuminates metal surface.

PROPAGATION OF RADIO WAVES THROUGH THE ATMOSPHERE

It takes place in three ways :

- (i) Ground wave propagation,
- (ii) Sky wave propagation and
- (iii) Space wave propagation.

Ground wave propagation : When the radio wave travel directly from one point to another following the surface of the earth, it is called ground or surface wave. This type of transmission is possible only with waves of wavelengths above 200 m or frequencies below 1500 kHz.

Sky wave propagation : When a radiowave is directed towards the sky and is reflected by the ionosphere towards desired location on the earth, it is called sky wave. This method is useful for the transmission of waves of wavelengths less than 200 m or frequencies above 1500 kHz upto 30 MHz.

Space wave propagation : For the transmission of television signals (frequencies in the range 100-200 M Hz), space wave propagation method is used, in which the wave travels directly from a high transmitting antenna to the receiving antenna.

- Radio waves also known as electromagnetic waves which when radiated from transmitting antenna, travel through space to distant places where they are picked up by receiving antenna .

Different layers of atmosphere and their interaction with the propagating electromagnetic waves

Name of the stratum (layer) of atmosphere	Approximate height over earth's surface	Exists during	Frequencies most affected
Troposphere	10 km	Day and night	VHF (up to several GHz)
D (part of stratosphere)	65-75 km	Day only	Reflects LF, absorbs MF and HF to some degree
E (part of stratosphere)	100 km	Day only	Helps surface waves, reflects HF
F ₁ (part of mesosphere)	170-190 km	Daytime, merges with F ₂ at night	Partially absorbs HF waves yet allowing them to reach F ₂
F ₂ (thermosphere)	300 km at night, 250-400 km	Day and night	Efficiently reflects HF waves, particularly at

POLYMERS

- Have high molecular mass and formed by union of monomers.
- **Homopolymers** : Polymers made of same monomer.
- **Copolymers** : Polymers made of different types of monomers.

Classification of Polymers on the Basis of Source

- (a) **Natural polymers** : Proteins, cellulose, starch, resins and rubber.

- (b) **Semi-synthetic polymers :** Cellulose derivatives as cellulose acetate (rayon) and cellulose nitrate, etc.
- (c) **Synthetic polymers :** Plastic (polythene), synthetic fibres (nylon 6, 6) and synthetic rubbers (Buna – S).

Classification Based on Mode of Polymerisation

- (i) **Chain growth polymers or addition polymers :** They are formed by successive addition of monomers without loss of simple molecules like H_2O , NH_3 etc. e.g. polythene.
- (ii) **Condensation polymers :** They are formed by the condensation reactions between two monomers, each monomers having two functional groups, with the elimination of small molecules such as water, alcohol and ammonia, e.g., Nylon 66.

Classification Based on Molecular Forces

- (i) **Elastomers :** The strands of polymer are held together by weak inter molecular forces (van der waal's). e.g.- **vulcanised rubber**.
- (ii) **Fibres** are held together by hydrogen bonds. e.g.- **nylon, polyester, polyamide**.
- (iii) **Thermoplastics** can be easily moulded on heating. They don't have cross-links, e.g.- **polyethene**.
- (iv) **Thermosetting polymers** have cross links, cannot be remolded on heating. e.g.- **Bakelite**.
- (v) **Plastisizer** are high boiling esters which are added to plastic to make it soft and rubber like.

Natural Rubber

- It is cis 1, 4-polyisoprene. It is a linear 1,4-polymer of isoprene. It is manufactured from rubber latex which is a colloidal suspension of rubber in water.
- The process of heating a mixture of raw rubber and sulphur at 373 K to 415 K is known as **vulcanisation of rubber**. The process of vulcanisation is accelerated by adding additives such as ZnO .

Synthetic Rubbers

- These are either homopolymers of 1, 3-butadiene derivatives or are copolymers in which one of the monomers is 1, 3-butadiene or its derivatives. Examples are Buna – S, Buna – N, neoprene and butyl rubber.

PLASTIC

- 1. **Thermoplastics** are those plastics, which can be melted and moulded into any desired shape without any change in the chemical composition and mechanical properties.
 - They are hard at room temperature, become soft and viscous on heating and again become rigid on cooling.
 - Examples are polyethylene (polyethene), polyester, polyvinyl chloride (PVC) and polypropylene (polypropene).
 - These plastics can be moulded into toys, beads, buckets, telephone and television cases.
- 2. **Thermosetting Plastics** can be heated only once and, when set into a solid (a shape or a pattern), it is permanent, as these cannot be remelted or recast. For example, bakelite and teflon.

PETROLEUM AND COMBUSTION

- 1. **Types :** Coal comes in four main varieties.
 - **Peat :** This is a material in the first stage of coal formation. It contains about 60% carbon and is

considered to be the lowest grade of coal.

- **Lignite:** This variety of coal contains about 67% carbon. It has poor heating power. It is brown in colour but lustrous when dry.
- **Wituminous:** It is a soft coal containing about 88% carbon. It gives a large proportion of gas when heated and burns with a yellow, luminous flame.
- **Anthracite:** It is a hard coal and contains about 96% carbon. It is lustrous. It burns without smoke and gives much heat and little ash.

METAL & NON-METAL

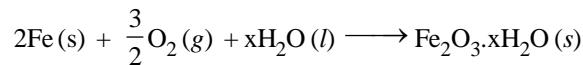
1. All the materials found in the earth's crust are made up of chemical elements.
2. All these elements can be broadly divided into two classes: **Metals and Non-metals**
3. **Note :** Out of 117 elements 83 are naturally occurring. Out of total 117 elements about 24 are non-metals and rest are metals.

Physical Properties of Metals

- Metals, in their pure state, possess a shining surface (metallic lustre). Freshly cut metals have a bright metallic lustre.
- Metals are solid at room temperature. Mercury is the only metal that is liquid at room temperature.
- Metals are generally hard and strong. But metals like sodium and potassium are exceptionally very soft and can be cut with a knife.
- Metals have high melting and boiling points. Sodium, potassium, gallium and mercury have low melting and boiling points.
- Metals are good conductors of heat. Silver, followed by copper and aluminium, is the best conductor of heat. These days, cooking vessels and other utensils are made up of copper and aluminium.
- Metals are also good conductors of electricity. Silver, followed by copper, gold and aluminium, is the best conductor of electricity. Copper and aluminium are used for making electrical wires.
- Metals are sonorous. They make a ringing sound when struck.
- Metals are usually malleable. They can be hammered into thin sheets and rolled into different shapes without breaking. Gold and silver are the most malleable metals.
- Metals are generally ductile. They can be easily drawn into wires. Gold and silver are most ductile metals. Copper wires are used for electrical purposes.
- Metals have high tensile strength, i.e. they can hold heavy loads without breaking.
- Metals have high densities i.e. they are heavy in nature. Sodium and potassium metals are exceptions as they have low densities and float on water.

Corrosion is the process of slowly eating away of metal due to attack of atmospheric gases and water on the surface of metal. The most common example of corrosion is the **rusting of iron**.

Rusting is the corrosion of iron on exposure to atmosphere



i.e., rust is hydrated iron (III) oxide

5. **Non-metals** are quite abundant in nature. They are main constituent of atmosphere.
- Oxygen, nitrogen and noble gases are present in the air.
 - Non-metals are also present in large amounts in oceans.
 - Hydrogen and oxygen are present as water and chlorine is present as chlorides in the oceans.
 - Oxygen, silicon, phosphorus and sulphur are present in the earth's crust.
6. **Physical Properties of Non-metals**
- Non-metals are either solids or gases at room temperature. Bromine is the only liquid non-metal at room temperature.
 - Non-metals are soft. Phosphorus is so soft that can be cut with a knife. Diamond, an allotrope of carbon, is the hardest known substance.
 - Non-metals have low tensile strength, i.e. they are not strong and break easily.
 - Non-metals are non-lustrous and have a dull appearance. Graphite, an allotrope of carbon and iodine have shining lustrous surfaces.
 - Non-metals are non-malleable and non-ductile. They cannot be hammered into sheets or drawn into wires. These are brittle solids. When non-metals like sulphur, are hammered or stretched, they break into pieces.
 - Non-metals are non-conductors or bad conductors of heat and electricity. Gas carbon and graphite are good conductors of heat and electricity.
 - Non-metals are non-sonorous i.e. do not make a ringing sound when struck.
 - Non-metals usually have low densities.

IMPORTANT ORES

Oxide Ore

ZnO	Zincite
MnO ₂	Pyrolusite
SnO ₂	Cassiterite
Cu ₂ O	Cuprite
Fe ₂ O ₃	Haematite
Al ₂ O ₃ .2H ₂ O	Bauxite
FeO.Cr ₂ O ₃	Chromite
Fe ₃ O ₄	Magnetite
Fe ₂ O ₃ .3H ₂ O	Limonite
3BeO.Al ₂ O ₃ .6SiO ₂	Beryl

Sulphide Ore

ZnS	Zinc blende
HgS	Cinnabar
PbS	Galena
Ag ₂ S	Argentite or Silver glance
FeS ₂	Iron pyrites
CuFeS ₂ .CuS.FeS	Copper pyrites
Cu ₂ S.Ag ₂ S	Copper silver glance
Ag ₂ S.Sb ₂ S ₃	Pyrargyrites, Ruby silver
FeAsS	Arsenickel Pyrites

Halide Ore

NaCl	Rock Salt
AgCl	Horn Silver

CaF ₂	Flour Spar
AlF ₃ .3NaF	Cryolite
KCl.MgCl ₂ .6H ₂ O	Camelite
Carbonate Ore	
MgCO ₃	Magnesite
CaCO ₃	Lime stone
MgCO ₃ .CaCO ₃	Dolomite
ZnCO ₃	Calamine
PbCO ₃	Cerussite
FeCO ₃	Siderite
CuCO ₃ .Cu(OH) ₂	Malachite
2CuCO ₃ .Cu(OH) ₂	Azurite
SrCO ₃	Strontianite
Sulphate Ore	
BaSO ₄	Barytes
PbSO ₄	Anglisite
CaSO ₄ .2H ₂ O	Gypsum
MgSO ₄ .7H ₂ O	Epsomite
SrSO ₄	Celestine
K ₂ SO ₄ .Al ₂ (SO ₄) ₃ .24H ₂ O	Alum
K ₂ SO ₄ .Al ₂ (SO ₄) ₃ .4Al(OH) ₃	Alunite or Alumstone
Silicate Ore	
LiAl(SiO ₃) ₂	Spodumene
KAlSi ₃ O ₈	Felspar
Al ₂ O ₃ .2SiO ₂ .2H ₂ O	Caolin (or China-Clay)
3BeO.Al ₂ O ₃ .6SiO ₂	Beryl
CaO.3MgO.4SiO ₂	Asbestos
K ₂ O.3Al ₂ O ₃ .6SiO ₂ .2H ₂ O	Mica
KH ₂ .Al ₃ (SiO ₃) ₄	
Nitrate Ore	
NaNO ₃	Chili-Salt Peter
KNO ₃	Salt peter or Indian salt peter
Phosphate Ore	
Ca ₃ (PO ₄) ₂	Rock Phosphate
Fe ₃ (PO ₄) ₂ .8H ₂ O	Vivianite
AlPO ₄ .Al(OH) ₃ .H ₂ O	Terguoise

FAMOUS PROCESSES AND RELATED METALS

Poling	Cu
Perkes Process	Ag
Pattinson process	Ag
Cupellation process	Ag
Baeyer's Process	Al
Serpek's process	Al
Hall's process	Al
Siemens Martin open hearth furnace	Fe
L.D. Process	Fe
Tempering	Fe

POLLUTANT

A pollutant is substance or energy introduced into the environment that has undesired effects, or adversely affects the usefulness of a resource. The pollutants may be inorganic, biological or radiological in nature.

Pollutants			
Primary Pollutants (H ₂ S, SO ₂ , CO, NO, HF, NH ₃ Smoke, Dust, Fumes)	Secondary Pollutants (SO ₃ , NO ₂ , CH ₄ , Aldehydes, Ketones, Nitrates, Sulphates)	Bio-degradable Pollutants (Domestic Waste)	Non-Biodegradable Pollutants (Mercuric salt, Lead compounds, Pesticides etc.)

AIR POLLUTION

Major Air Pollutants

The major air pollutants are following :

- (i) Carbon monoxide (CO)
- (ii) Sulphur dioxide (SO₂)
- (iii) Oxides of nitrogen (NO₂ and NO)
- (iv) Smoke, dust
- (v) Ammonia
- (vi) Chlorine and hydrogen chloride
- (vii) Chlorinated hydrocarbons
- (viii) Mercaptans
- (ix) Zn and Cd
- (x) Freon

Photochemical pollutants : The nitrogen dioxide by absorbing sunlight in blue and U. V. region decomposes into nitric oxide and atomic oxygen followed by a series of other reactions producing O₃, formaldehyde, acrolein and peroxyacylnitrates.

SMOG

It is a mixture of smoke and fog in suspended droplet form. It is of two types :

- (a) **London smog or classical smog :** It is coal smoke plus fog.
- (b) **Photochemical smog or Los Angeles smog :** The oxidised hydrocarbons and ozone in presence of humidity cause photochemical smog.

ACID RAIN

The oxides of C, N and S present in the atmosphere, dissolve in water and produce acids which lowers the pH of water below 5.5. The acids are toxic to vegetation, react with marble and damage buildings.

GREEN HOUSE EFFECT

The retention of heat by the earth and atmosphere from the sun and its prevention to escape into the outer space is known as green house effect. Global warming refers to an increase in average global temperature.

- (i) Global warming would result in rise in sea level due to increased rate of melting of glaciers and floods.
- (ii) Increase in infectious diseases like Malaria, Dengue etc.

OZONE LAYER AND ITS DEPLETION

The ozone layer, existing between 20 to 35 km above the earth's surface, shield the earth from the harmful U. V. radiations from the sun. The U. V. radiations cause skin cancer, cataract of eye, and are harmful to vegetation.

Depletion of ozone is caused by oxides of nitrogen

The presence of chlorofluorocarbons also increase the decomposition of O₃.

WATER POLLUTION

The contamination of water by foreign substances which would constitute a health hazard and make it harmful for all purposes

(domestic, industrial or agriculture etc.) is known as water pollution.

Sources of Water Pollution

- (i) Domestic sewage
- (ii) Industrial waters
- (iii) Suspended particles
- (iv) Wastes from fertilizer

Control of Water Pollution

- (i) Recycling of waste water
- (ii) Special techniques
- (iii) Waste-water reclamation

Aerobic and Anaerobic Oxidation

The oxidation of organic compounds present in sewage in presence of good amount of dissolved or free oxygen (approx. 8.5 ml/l) by aerobic bacteria is called *aerobic oxidation*. When dissolved or free oxygen is below a certain value the sewage is called *stale* anaerobic bacteria bring out purification producing H₂S, NH₃, CH₄, (NH₄)₂S etc. This type of oxidation is called *anaerobic* oxidation. The optimum value of D.O. for good quality of water is 4-6 ppm (4-6 mg/l). The lower the concentration of D.O., the more polluted is the water.

Biological Oxygen Demand (BOD)

It is defined as the amount of free oxygen required for biological oxidation of the organic matter by aerobic conditions at 20°C for a period of five days. Its unit is mg/l or ppm. An average sewage has BOD of 100 to 150 mg/l.

Chemical Oxygen Demand (COD)

It is a measure of all types of oxidisable impurities (biologically oxidisable and biologically inert organic matter such as cellulose) present in the sewage. COD values are higher than BOD values.

SOIL OR LAND POLLUTION

The addition of substances in an indefinite proportion changing the productivity of the soil is known as soil or land pollution.

Sources of Soil Pollution

- (i) Agricultural pollutants
- (ii) Domestic refuse
- (iii) Radioactive wastes
- (iv) Farm wastes

PESTICIDES

The chemical substances used to kill or stop the growth of unwanted organisms are called pesticides.

CHEMOTHERAPY

Branch of chemistry dealing with treatment of diseases by suitable chemicals.

Analgesics

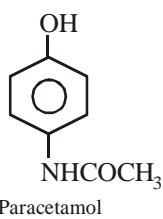
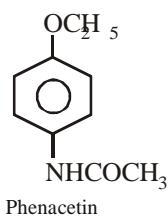
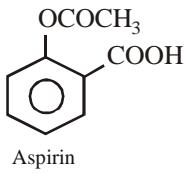
Drugs used for relieving pain.

- (a) Aspirin (2-acetoxy benzoic acid) is the most common analgesic. It has antipyretic (temperature lowering) properties also.

- (b) These days, aspirin is used for the prevention of heart attack as it prevents clotting of blood.
- (c) In case of severe pain, narcotics like morphine, codeine and heroin can also be used.

Antipyretics

It brings down body temperature during high fever. e.g.-



Antimalarials

These are drugs which cure malaria e.g. - **quinine, chloroquine**.

Antiseptics and Disinfectants

Antiseptics

- prevents growth of microorganisms or may even kill them.
- **Not harmful for humans**

Examples :

- (i) **Dettol (chlorohexenol (1% of solution of phenol + terpeneol)**
- (ii) **Bithional**
- (iii) **Salol**

Disinfectants

- kills and prevents growth of microorganisms.
- **Harmful for humans.**

Example :

excess acid and raise the pH to appropriate level in stomach. These are mainly weak bases.

Examples— Mg(OH)_2 , KHCO_3

Antifertility Drug

The drugs which are used to control the pregnancy are known as antifertility drugs or oral contraceptives. These are essentially a mixture of estrogen and progesterone derivatives.

Examples— Ormeloxifene, mix pristone

Artificial Sweeteners

The chemical compounds that are added to foods to make them sweet.

- (a) Saccharin is the first artificial sweetener used as it is water soluble sodium or calcium salt.
- (b) Nowadays aspartame is used as artificial sweetener, but it is unstable at cooking temperatures.
- (c) Alitame, another sweetener is more stable than aspartame at cooking temperature.

Food Preservatives

The chemical substances that are added to the food to prevent their decaying and to retain their nutritive value for long periods.

- Sodium benzoate is the most commonly used preservative.

SOAPS AND DETERGENTS

Soaps

Sodium or potassium salts of long chain fatty acids, e.g., stearic oleic and palmitic acids. Soaps containing sodium salts are formed by heating fat (*i.e.*, glyceryl ester of fatty acid) with aqueous sodium hydroxide solution. This process is called **saponification**.

- Soaps do not work in hard water. Hard water contains Ca^{+2} and Mg^{+2} ions. These ions form insoluble calcium and magnesium soaps respectively when sodium or potassium soaps are dissolved in hard water. These insoluble soaps separate as scum in water and are useless as cleansing agent.

Synthetic Detergents

Sodium salts of alkylbenzene sulphonlic acids. They are better cleansing agents than soap. These are of three types:

- (a) **Anion detergents** are those detergent which contain large part of anion.
 - (i) For preparing anionic detergent, long chain alcohols are first treated with concentrated H_2S , giving alkyl hydrogen sulphates. These are neutralized with alkali to give anionic detergent.
 - (ii) They are also effective in slightly acidic solutions. In acidic solution, they form alkyl hydrogen sulphate which is soluble in water whereas soaps form insoluble fatty acids.
- (b) **Cationic detergents** are mostly acetates or chlorides of quaternary amines. These detergents have germicidal properties and are extensively used as germicides.
- (c) **Non-ionic detergents** are esters of high molecular mass.

CELL AND TISSUE

The cell is the basic living unit of all organisms. The simplest organisms consist of a single cell whereas humans are composed of trillions of cells.

The cell theory proposed by J.M. Schleiden and T. Schwann, states that organisms are composed of cells and cell is the basic unit of life. Rudolf Virchow proposed that all cells arise by division of preexisting cells.

Every cell is surrounded by a plasma membrane that forms a cytoplasmic compartment. The plasma membrane is selectively permeable and serves as a selective barrier between the cell and its surrounding environment.

Prokaryotic cells are bounded by a plasma membrane but have little or no internal membrane organization. They have a nuclear area rather than a membrane-bounded nucleus. Prokaryotes typically have a cell wall and ribosomes and may have propeller-like flagella. Prokaryotes lack membrane bound organelles. Thus cell organelles like mitochondria, golgi bodies, endoplasmic reticulum are all absent in prokaryotes.

Eukaryotic cells have a membrane-bounded nucleus and cytoplasm, which is organized into organelles; the fluid component of the cytoplasm is the cytosol.

- Plant cells differ from animal cells in that they have **rigid cell walls, plastids, and large vacuoles**; cells of most plants lack centrioles.
- Membranes divide the cell into membrane-bounded compartments; this allows cells to conduct specialized activities within small areas of the **cytoplasm**, concentrate molecules, and organize metabolic reactions. A system of interacting membranes forms the endomembrane system. The **nucleus** is the control center of the cell and contains genetic information coded in DNA.
- The nucleolus is a region in the nucleus that is the site of ribosomal RNA synthesis and ribosome assembly. The **endoplasmic reticulum** (ER) is a network of folded internal membranes in the cytosol.
- **Rough ER** is studded along its outer surface with ribosomes that manufacture proteins.
- **Smooth ER** is the site of lipid synthesis and detoxifying enzymes.

The **Golgi complex** consists of stacks of flattened membranous sacs called cisternae that process, sort, and modify proteins synthesized on the ER.

Lysosomes function in intracellular digestion; they contain enzymes that break down both worn-out cell structures and substances taken into cells.

Peroxisomes are membrane-bounded sacs containing enzymes that catalyze a variety of reactions in which hydrogen peroxide is formed as a byproduct.

Vacuoles are important in plant growth and development. Many protists have food vacuoles and contractile vacuoles. **Mitochondria**, the sites of aerobic respiration, are double membraned organelles in which the inner membrane is folded, forming cristae that increase the surface area of the membrane.

- Mitochondria contain DNA that codes for some of its proteins.

Cells of algae and plants contain plastids; **chloroplasts**, the sites of photosynthesis, are double-membraned plastids.

- Chlorophyll, the green pigment that traps light energy during photosynthesis, is found in the chloroplast. The cytoskeleton is a dynamic internal framework made of microtubules, microfilaments, and intermediate filaments. The cytoskeleton provides structural support and functions in various types of cell movement, including transport of materials in the cell.
- Cilia and flagella function in cell movement. Each consists of a 9 + 2 arrangement of microtubules.

FUNCTIONS OF THE CELL

- (i) The cell is the smallest part to which an organism can be reduced that still retains the characteristics of life.
- (ii) Cells produce and secrete various molecules that provide protection and support to the body.
- (iii) All the movements of the body occur because of specific cells called muscle cells.
- (iv) Cells produce and receive chemical and electrical signals that allow them to communicate with one another.
- (v) Each cell contains a copy of the genetic information of the individual within the nucleus. Specialized cells (gametic cells) are responsible for transmitting that genetic information to the next generation.

CELL WALL

In plant cells a dead layer is also present outside the cell membrane called as **cell wall**. It is made up of cellulose and is permeable to water, solutes and gases.

Functions of the cell wall

- (i) It helps in maintaining/determining cell shape.
- (ii) It provides support and mechanical strength to plants.
- (iii) It protects the cell against mechanical injury and pathogens.
- (iv) It helps in transport of various substances across it.
- (v) It helps the plant cells to withstand a lot of variations in the surrounding environment.
- (vi) It prevents bursting of cell on endosmosis.

Transport of substances across the membrane

The transport of substances across the plasma membrane can be of two types depending upon the expenditure of energy.

1. **Passive transport** : The transport of substances across the membrane which does not require expenditure of energy is called passive transport. It is of two types-

- (i) **Diffusion** : The process of movement of substances from the region of higher concentration to the region of lower concentration so as to spread the substance uniformly in the given space is known as diffusion.

For example: Transport of CO_2 and O_2 across the membrane.

- (ii) **Osmosis**: Diffusion of water from a region of higher concentration to a region of lower concentration across the semipermeable membrane is called osmosis.

For example : Movement of water across selectively permeable membrane.

Types of osmosis :

- (a) **Endosmosis**: Movement of water inside a cell.
- (b) **Exosmosis**: Movement of water out of the cell.

2. **Active transport:** The process of transport of molecules across the plasma membrane against the concentration gradient requires energy and is known as active transport.
For example: The transport of glucose, amino acids and ions occurs through active transport.

TISSUES

- Group of cells having a common origin and performing similar functions are called tissues.
- A meristematic tissue is a group of similar cells that are in a continuous state of division. These tissues are in general called **meristems**.
- The meristematic cells when lose their power of division differentiate into **permanent tissues**. The cells of these tissues are either living or dead, thin walled or thick walled.

MICROORGANISMS

- Microorganisms are very tiny organisms which can be seen under microscope. Some example of microorganisms are **bacteria, virus, protozoa, fungi and algae**.
- Microorganisms range in size from $0.015\text{ }\mu$ to more than 100 micron.
- Microorganisms can be unicellular or multicellular. Bacteria, protozoans and some algae are unicellular while most of the algae and fungi are multicellular.
- Microorganisms can be autotrophic or heterotrophic. Some bacteria, few fungi and viruses are heterotrophes while algae and some fungi are autotrophes.
- Microorganisms can reproduce sexually, asexually or both.

VIRUSES

Viruses term is a latin word which means venom or poison.

Viruses are minute microorganisms much smaller than bacteria (size ranges from $0.015 - 0.2$ micron) and can be seen only with the help of an electron microscope.

M.W. Beijerinck (1898) demonstrated that the extract of infected plants of tobacco causes infection in healthy plants and called the fluid as *contagium vivum fluidum*.

W.M. Stanley (1935) showed that viruses could be crystallised and crystals consist of proteins.

Characteristics of Viruses

- They are not free living.
- They grow and multiply only inside other living cells.
- Outside a living system, a virus is like a non-living substance. It neither respires nor reproduces outside the host.
- They are a link between living and non-living things.
- A virus is a nucleoprotein and the genetic material is infectious.
- The protein coat is called capsid that protects the DNA/RNA.
- Antibiotics have no effect on viruses as they do not have a metabolism of their own.
- Viruses found in plants are known as plant viruses. Similarly, they are categorised as animal viruses or bacterial viruses or *bacteriophages*.

Disease Causing Viruses (Harmful Viruses)

Many human diseases like influenza, common cold, measles, mumps, chicken pox, rabies, etc., are caused by viruses. One of the most fatal disease caused by a **HIV** (Human Immunodeficiency Virus) virus is **AIDS** (Acquired Immuno Deficiency Syndrome). It spreads through sexual contact with an infected person.

In 1971, T.O. Diener discovered very simple smallest infections agents called viroids. They contain only RNA, capsid is absent.

BACTERIA

- Bacteria have Autotrophic as well as Heterotrophic nutrition.
- Bacteria show both aerobic and anaerobic respiration.
- Saprophytic bacteria obtain their food from organic remains such as corpses; animal excreta, fallen leaves etc. e.g. *Pseudomonas*.
- Symbiotic bacteria form mutually beneficial association with other organisms. E.g. *Rhizobium* forms association with different legumes.
- *Escherichia coli* lives in human intestine and synthesises vitamin *B* and *K*.
- Parasitic bacteria draw their nourishment from other living organisms called hosts eg. *Vibrio cholerae* (causes cholera) *Salmonella typhi* (causes typhoid) etc.
- Bacteria reproduce asexually by binary fission under favourable conditions. The cell division is of simple type called amitosis. During unfavourable conditions, bacteria reproduce by endospore formation.
- Bacteria reproduces sexually by conjugation. It was first discovered by Lederburg and Tatum in *Escherichia coli*.
- Bacteria *Rhizobium* help in N_2 fixation in soil, they occur in root nodules of leguminous plants.

Cyano bacteria

- They are also known as blue green algae. They made the earth's atmosphere oxygenic. They are autotrophs and many of them fix atmospheric nitrogen as Ammonia with the help of structure called heterocyst.
- Representatives of this group are *Anabaena, Oscillatoria, Nostoc, Spirulina* etc.
- Bacteria are not only harmful to us or to plants but these are very useful for human beings, animals and plant life.
- 1. Antibiotics are prepared from bacteria like streptomycin is prepared from *Streptomyces grisiens*. Chloromycin is prepared from *S. venezuelae*. Terramycin is prepared from *S. rimosus*. Penicillin was the first antibiotic discovered by Alexander Fleming in 1929.
- 2. Some bacteria are called nitrifying bacteria as they convert nitrogen of ammonia (NH_3) into nitrates.
- 3. Bacterium lactic acid (*Lactobacillus sp*) are found in milk, which convert lactose sugar of milk into lactic acid, because of which milk becomes sour.
- 4. Bacteria are useful in vinegar industry. Vinegar is made from sugar solution in the presence of *Acetobacter aceti*.
- 5. In Gobar Gas plants cow-dung as well as other excreta are collected and subjected to bacterial action. The bacterial degradation of cellulose releases inflammable gases consisting mainly of methane. The gas is used for domestic cooking.

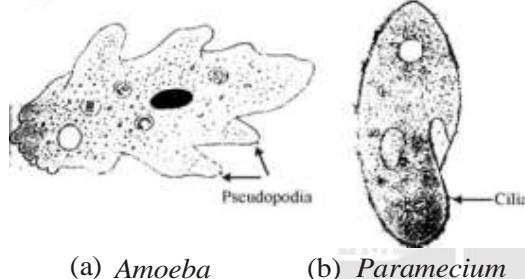
MYCOPLASMA

Simplest and smallest known microbes, next to virus, are the *Mycoplasmas*. Mycoplasmas are bacteria that lack cell wall. Due to absence of cell wall they are not affected by many common antibiotics. They do not have any particular shape and grow as saprophytes or parasites causing diseases in plants and animals.

- Mycoplasmas are known to cause *pleuro-pneumonia* in cattle and *witch's broom* in plants.

PROTOZOA

- Protozoa are a group of single celled eukaryotic organisms which are classified as animals. The mode of nutrition is heterotrophic and show motility. Some examples are : *Amoeba*, *Paramecium*, *Trypanosoma*, *Entamoeba* and *Plasmodium*.



(a) Amoeba

(b) Paramecium

- Some protozoans like *Amoeba*, *Paramecium*, *Euglena* etc have contractile vacuoles for osmoregulation.
- Asexual reproduction is by binary fission (e.g *Amoeba*, *Paramecium*, *Euglena*) or by multiple fission (e.g *Plasmodium* and *Amoeba*)
- Paramecium* is known as slipper animalcule.
- Sir Ronald Ross (1896) was the first to observe oocytes of *Plasmodium* in female *Anopheles* (mosquito).
- Laveran (1880) discovered that malaria is caused by a protozoan parasite, *Plasmodium vivax*.

Useful effects of Protozoa

- Protozoa help considerably in the treatment of waste and sewage because they feed on fungi and bacteria which decompose organic matter.
- Being simplest animal they are used as laboratory animals for research.
- Entamoeba* lives in the large intestine of humans and feeds on the lining and causes amoebic dysentery (pain in the abdomen and repeated motions).
- Trypanosoma* lives in the blood stream of human beings, cattle and wild animals cause a disease known as sleeping sickness.

FUNGI

- Fungi are non-green hence **heterotrophic** in their mode of nutrition. They may be saprophytes (growing on dead organic matter) or parasites (drawing food from living plants and animals as their hosts) or a few are symbiotic (living with co-host in symbiosis), as in lichens.
- Fungi are eukaryotes with cell walls containing chitin. Most fungi reproduce both sexually and asexually by means of spores. When a fungal spore lands in a suitable spot, it germinates.

- Imperfect fungi (deuteromycetes) lack a sexual stage. Most reproduce asexually by forming conidia.
- A lichen is a symbiotic combination of a fungus and a phototroph (an alga or cyanobacterium).

Economic importance of fungi

- Mushrooms and Morels are edible fungi used as delicious vegetables all over the world. *Agaricus campestris* is common edible mushroom.
- Some medicines are prepared from fungi. These medicines are penicillin, ergot, chaetomin and griseoflavin.
- Alcohol and alcoholic drinks are produced by a process called fermentation of cereals by yeast *Saccharomyces*.
- Yeast (*Saccharomyces cerevisiae*) is used in making bread, cakes, idli and dosa, etc. Yeast is rich in vitamin B (Riboflavin) and protein.
- Some fungi are decomposers and are helpful in decomposing organic waste. This helps in recycling of nutrients in the biosphere.
 - Rhizopus stolonifer* is the common bread mould fungus.
 - Some parasitic fungi cause diseases in plants. For example. *Puccinia* causes rust diseases in wheat, *Ustilago* causes smut disease in wheat.
 - Albugo* causes white rust in mustard family.
 - Aspergillus* causes a disease called aspergillosis in humans.
 - Aspergillus flavus* produces a toxin aflatoxin which is carcinogenic and can potentially contaminate food such as nuts.

ALGAE

- Algae are water loving green plants found growing in almost all water places. The algal growth floats on water surface and looks like foam or soap lather. It is called water bloom : For example *Microcystis*, *Anabaena*, *Oscillatoria*, etc.

Green algae : Algae are plants because they have chlorophyll, cellulosic cell wall and contain chlorophyll a, b and starch as reserve food. Examples are *Chlamydomonas*, *Volvox*, *Spirogyra*.

Blue green algae (Cyanobacteria) : Contain phycocyanin (cyanin = blue) pigment in addition to chlorophyll. Examples are *Nostoc*, *Anabena*, *Oscillatoria*.

Red algae: Contain phycoerythrin (erythrin = red) pigment in addition to chlorophyll a and d and phycocyanin.

Example : *Polysiphonia*.

Brown algae: Include fucoxanthin, carotene and xanthophyll in addition to chlorophyll to give brown colour to the plants. Examples are *Fucus* and *Laminaria*. Brown algae yields iodine.

Diatoms: Contain a golden brown pigment called diatoxanthin in addition to chlorophyll a and c.

Unicellular algae may be oval, spherical or elongated in shape and are microscopic in size.

- Several algal forms grow on other plants (algae, angiosperms) as **epiphytes**. For example *Oedogonium*, *Cladophora*, *Vaucheria*, etc.

- Some blue-green algae grow as **endophytes** inside other plants. For example *Anabaena* growing inside the leaf of *Azolla* (fern), *Nostoc* inside the thallus of *Anthoceros* (hornwort) and *Anabaena*, *Nostoc* and *Oscillatoria* inside the coralloid root of *Cycas*.
 - Algae growing on the bodies of animals are described as **epizotic**. For example *Cladophora crispata* grows on snail shell.
 - Algae growing inside the body of animals are called **endozoic**. For example *Chlorella* grows within the tissue of *Hydra*.
 - *Cephaleuros virescens* grows as a parasite on tea leaves causing red rust disease of tea.

➤ **Useful Algae**

 1. Algae are major source of food for organisms. A popular vegetable of Japan is prepared from *Laminaria*. *Chlorella* is an alga which contains more protein than the egg. *Spirulina* is also a good source of protein.
 2. Agar is obtained from red algae. This product is used in laboratory for various experiments.
 - *Laminaria digitata* and *Fucus* sp. are largely known for extraction of iodine hence used to treat goitre.
 - Certain marine brown algae and red algae produce large amount of hydrocolloids (water holding substances). For example alginic acid extracted from *Laminaria*.

LIFE PROCESSES

Plants and animals both have important parts called organs that enable them to live. Organs are complex structures that have a specific function.

RESPIRATION

Respiration is a process where the body breaks down glucose with the help of oxygen. It is a part of metabolic process where energy molecule is released while carbon dioxide and water are produced.

Respiratory Disorders

Disease	Characteristic	Prevention and cure
1. Bronchitis	Inflammation of Bronchitis Hyperplasia of sero-mucous glands and goblet cells. Regular coughing with thick greenish yellow sputum.	Avoid exposure to smoke, chemicals and pollutants. Take suitable antibiotics
2. Bronchial Asthma	Hyper sensitivity of Bronchiole. Coughing and difficulty in expiration	Avoid exposure to allergens
3. Emphysema	Inflammation of Bronchioles Loss of elasticity of alveolar sac	Avoid exposure to pollutant and avoid smoking
4. Pneumonia	Infection by Bacteria (<i>Streptococcus pneumoniae</i>) or some other bacteria or fungi	Vaccination and Antibiotics
5. Occupational lung disease	Exposure to harmful substances such as gas, fires and dust, silica and asbestos	Minimise exposure to these chemicals. Use of protective wears and clothing by workers at workplace, working in chemical factories.

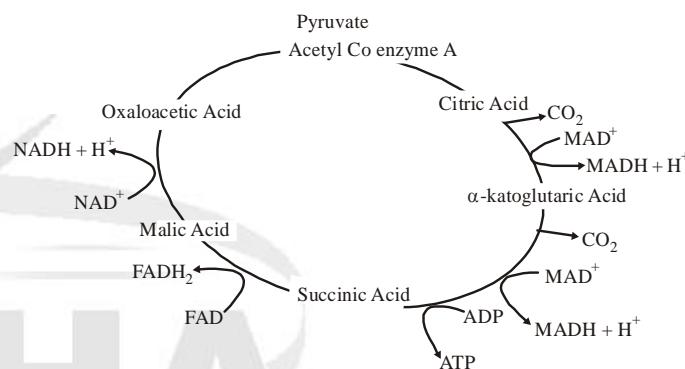
Energy contained in food is ‘unlocked’ or transferred to the organism by the process of respiration. Respiration takes place in the mitochondria of the cell.

Respiration may be divided into two categories :

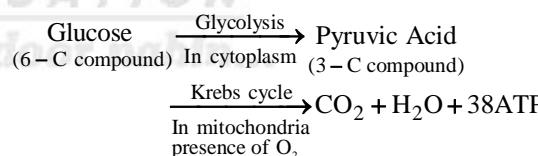
- (i) **Aerobic respiration:** It is a process of cellular respiration that uses oxygen in order to break down respiratory substrate which then releases energy.

Glycolysis occurs in cytoplasm of the cell. In this process, glucose undergoes partial oxidation to form two molecules of pyruvic acid.

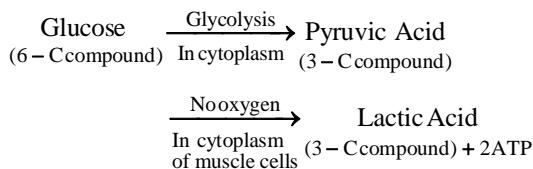
Krebs cycle or citric acid cycle : It was discovered by Hans krebs in 1937. This is also known as tricarboxylic acid cycle (TCA cycle).



This cycle takes place in mitochondria and only in presence of oxygen yielding NADH and FADH₂.



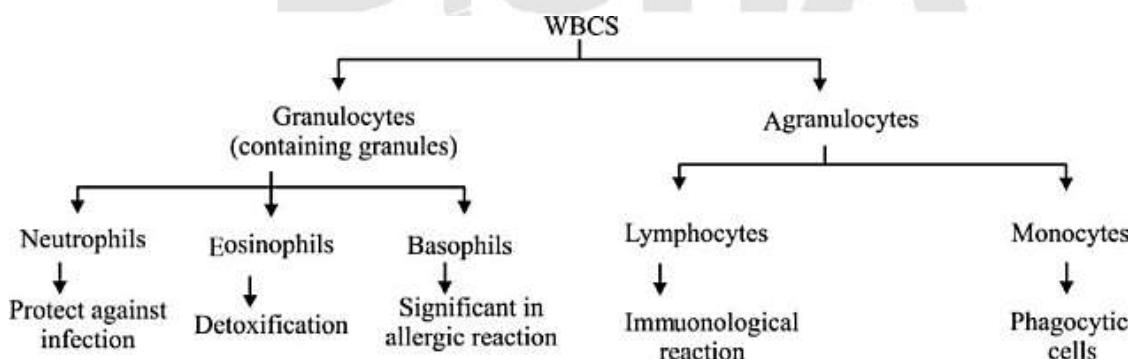
- (ii) **Anaerobic respiration:** It is a process of cellular respiration that takes place in absence of oxygen, there is incomplete breakdown of respiratory substrate and little energy is released.



Respiration in Animals

	Respiratory organs	Animals/Animal groups
I.	Skin	Earthworm, leech, frog.
II.	Gill or Bronchial or Ctenidia	"Annelids (Arenicola); Crustaceans (Prawn, Crab); Molluscs (Pila, Unio); Protochordates, Fishes, Amphibians."
III.	Tracheas	Insects, Arachnids
IV.	Bucco-pharynx	Frog
V.	Lungs	Ambhians, Reptiles, Birds and Mammals.

White Blood cells are categorised in the following types –



Blood Platelets : They facilitate blood clotting so as to prevent loss of body fluids.

HEART

The human heart is a muscular, cone shaped organ about the size of a fist. Heart is situated behind the sternum, between the lungs in the thoracic cavity. The human heart is four chambered. In human beings the blood circulation is called **double circulation** because the blood passes twice through the heart during one round of circulation.

Disorder of Circulatory System

Hypertension : Increase in the blood pressure. Normal b.p., must be 120/80 mm Hg. A continuous or sustained rise in the arterial blood pressure is known as hypertension

Atherosclerosis : It refers to the deposition of lipids (especially cholesterol) on the walls lining the lumen of large and medium sized arteries. This results in heart attack or stroke.

TRANSPORTATION

The coordinated process of carrying out proper distribution of materials as oxygen, water, minerals and organic food among the cells is called **transportation**.

Transportation in Animals

Transport system in animals is called the **circulatory system**.

Blood Circulatory System

There are two types of blood circulatory systems:

- (i) **Open circulatory system :** The blood enters and circulates in the interstitial spaces (space between the tissues). The blood vessels are open-ended as they open into the common cavities called the **haemocoel**, e.g. insects.
- (ii) **Closed circulatory System:** The blood always remains inside the blood vessels and never comes in direct contact with the cells.

BLOOD

Blood is liquid connective tissue.

Composition of Blood

Plasma : It is the pale yellowish fluid with a total volume of 2-3 litres in a normal adult. Its contents are 90% water and the rest 10% includes protein, inorganic ions and organic substances.

Red Blood Cells (Erythrocytes) : These are red in colour, due to the presence of haemoglobin. They do not have a nucleus.

White Blood Cells (Leucocytes). They are responsible for the defense system in the body. WBCs are colourless, without haemoglobin.

Arterio sclerosis : Calcium salts precipitate with cholesterol to harden the deposition and thickening of arteries. It may lead to rapture of wall, blood clot formation or thrombosis. Thrombosis may lead to heart attack and even death.

Heart failure : Loss in effective blood pumping by heart. It is also called congestive heart failure.

Cardiac arrest : Sudden damage of heart muscles, which cause stopping of heart beat. Also known as heart attack.

Angina : Also called Angina pectoris. It is caused due to unavailability of enough oxygen to the heart muscles.

NERVOUS SYSTEM

The nervous system is concerned with receiving stimuli from the external or internal environment of the body, interpreting the stimuli and producing the appropriate response to these stimuli.

Neuron. The unit of nervous system. The neuron is a special cell which can receive and conduct impulses.

ENDOCRINE SYSTEM IN HUMAN BEINGS

The chemical carrying the message is called hormone and the group of specialised cells which secrete these hormones is called endocrine glands.

Table-Endocrine System : Hormones and their actions

S. No.	Endocrine gland	Location	Hormone (GH)	Action
1.	Pituitary (Master glands)	Base of fore brain, pea shaped	Growth hormones (GH), Anti-Diuretic Hormone (ADH) Adenocorticotrophic Hormone (ACTH) Thyroid Stimulating Hormone (TSH) Lutinizing Hormone (LH) Follicle Stimulating Hormone (FSH)	Regulates the growth of the body. Controls the amount of water reabsorbed by the kidney. Stimulates the synthesis and secretion of steroid hormones. Stimulates the synthesis and secretion of thyroxine hormone from the thyroid gland, glucocorticoids. Stimulates ovulation of fully mature follicles. (Follicle stimulating hormone stimulates ovary to produce female hormone).
2.	Pineal	In the brain	Melatonin	Melatonin helps in maintaining the normal rhythm of sleep-wake cycle, body temperature and also influences metabolism, pigmentation, menstrual cycle and defense capability.
3.	Thyroid	Neck of the lower extremity of larynx, butterfly shaped	Thyroxine	Regulates rate of growth and metabolism. Controls the metabolism of carbohydrates, proteins and fats and influences maintenance of water and electrolyte balance.
4.	Thymus	Behind breast bone	Thymosin	Helps in production of antibodies and differentiation of T-lymphocytes.
5.	Adrenal	A pair of cap shaped organs above each kidney	Cortisol Adrenalin and Noradrenalin	Involved in carbohydrate metabolism. Stress hormones, increase heartbeat, the strength of heart contraction and rate of respiration.
6.	Pancreas	Below the stomach, heterocrine gland	Insulin	Regulates sugar metabolism. Too little insulin leads to high sugar level in blood and weakness (a condition called diabetes).
7.	Ovary	Lie on the lateral walls of the pelvis	Estrogen (Progesterone)	Development of secondary sexual characters e.g. development of breasts in female. Supports pregnancy.
8.	Testis	In the scrotum	Testosterone	Development of many masculine features such as growth of moustaches and beard.

HEALTH & HYGIENE

- According to World Health Organisation (WHO) health is defined as “a state of complete physical, mental and social well being and not merely the absence of disease.”
- **Hygiene is defined as the science and practice of maintaining good health.** It requires caring of one's own body and the immediate surroundings. The major aspects of personal hygiene are cleanliness, physical exercise, rest, sleep and healthy habits.
- **Community and Personal health :** Community health can be defined as “all the personal health along with the environmental services for the importance of health of community.”
- Disease may also be defined as morphological (structural), physiological (functional) or psychological disturbance in the body or body parts caused by some external agencies which may be non-parasitic (e.g. deficiency of nutrients) or may be parasitic (caused by viruses, bacteria, fungi, etc.). Disease causing micro-organisms are known as **pathogens**.

VITAMIN MALNUTRITION :

Vitamin form very little part of diet but are very important from functional point of view. Deficiency of one or more vitamins can be seen in the form of clear symptoms.

1. VITAMINS AND HEALTH

Vitamin	Function	Food sources	Deficiency symptoms
Water-Soluble Vitamins			
Thiamine (vitamin B ₁)	Growth, fertility, digestion,	Pork, beans, peas, nuts,	Beriberi (neurological disorder)
Riboflavin (vitamin B ₂)	Energy use	Leafy vegetables, dairy products	Hypersensitivity of eyes to light
Folic acid	Manufacture of red blood cells, metabolism	dark green vegetables	Anemia, cancer
Cyanocobalamin (vitamin B ₁₂)	Manufacture of red blood cell, growth, cell maintenance	Meat, organ meats, fish, shellfish, milk	Pernicious anemia
Ascorbic acid (vitamin C)	growth, tissue repair, bone and cartilage formation	Citrus fruits, tomatoes, strawberries	Weakness, gum bleeding (scurvy)
Fat-Soluble Vitamins			
Retinol (vitamin A)	Night vision, new cell growth	Dairy products, egg yolk, vegetables, fruit	Night blindness, rough dry skin
Cholecalciferol (vitamin D)	Bone formation	Fish-liver oil, milk	Skeletal deformation (rickets)
Tocopherol (vitamin E)	Prevents certain compounds from being oxidized	Vegetable oil, nuts, beans	Anemia in premature infants
Vitamin K	Blood clotting	Egg yolk, green vegetables	Bleeding, liver problem

2. BULK MINERALS IN THE HUMAN DIET

Mineral	Food sources	Functions in the human body
Calcium	Milk products, green leafy vegetables	Bone and tooth structure, blood clotting, hormone release, nerve transmission
Phosphorus	Meat, fish, eggs, poultry, whole grains	Bone and tooth structure
Sodium	Table salt, meat, fish, eggs, poultry, milk	Body fluid balance, nerve transmission, muscle contraction

3. TRACE MINERALS IMPORTANT TO HUMAN HEALTH

Mineral	Food sources	Functions in the human body
Fluorine	Water (in some areas)	Maintains dental health
Iodine	Seafood, iodized salt	Part of thyroid hormone
Iron	Meat, fish, shellfish, egg yolk, peas, beans, dried fruit, whole grains	Transport and use of oxygen (as part of haemoglobin and myoglobin), part of certain enzymes.
Zinc	Meat, fish, egg yolk, milk, nuts, some whole grains	Part of certain enzymes, nucleic acid synthesis

PROTEIN MALNUTRITION

Due to poverty, people can't include appropriate quantity of protein in their diets and suffer from malnutrition.

- Protein deficiency causes **Kwashiorkar** disease in children in which body swells due to inflammation. Patient does not feel hungry and becomes irritated. Skin becomes yellow, dry and fragile with black spots.

TYPES OF DISEASES

Diseases are broadly classified into two categories, congenital (genetic) and acquired.

- (i) **Congenital Diseases :** Congenital diseases are caused due to defective development of embryo or defective inheritance, e.g. haemophilia, colour blindness.
- (ii) **Acquired Diseases :** These diseases develop after birth. Acquired diseases are of two kinds, *infectious* and *noninfectious*.
- (a) **Infectious/Communicable diseases :** These diseases are caused by pathogens/infectious agents such as bacteria, viruses, fungi, protozoans, worms, etc. These diseases can spread from diseased person to healthy person by means of air (droplet method), water, food, insects, physical contact, etc. e.g., tuberculosis, malaria, diarrhoea, etc.
- (b) **Non-infectious/Non-communicable diseases :** They are diseases which remain confined to a person. They are neither present at birth nor spread from one person to another. The diseases are caused due to some specific factors. They may be caused due to **improper functioning of an organ** (short sightedness, hypertension, arthritis), hormonal imbalance (diabetes, dwarfism), allergy, cancer, inadequate diet (anaemia, goitre), etc.

MEANS OF SPREAD

Communicable diseases may be transmitted from the source of infection to susceptible individual in many different ways:

- (i) **Direct Transmission**
 - (a) **Direct contact :** Infection may be transmitted by direct contact from skin to skin, e.g., diseases transmitted by direct contact include leprosy, skin diseases and eye infections (like conjunctivitis)
 - (b) **Droplet infection :** Direct project of a spray of droplets of saliva during coughing, sneezing, speaking and spitting, e.g., whooping cough, tuberculosis, diphtheria, common cold.
- (ii) **Indirect Transmission**

This embraces a variety of mechanisms including the traditional five F's – flies, fingers, fomites, food and fluid.

 - (a) Transmission of micro-organism through water and food (vehicle-borne transmission), e.g., acute diarrhoea, typhoid, cholera, polio, hepatitis A, food poisoning and intestinal parasites all are transmitted by water and food.
 - (b) Fomites include contaminated inanimate object for example soiled clothes, towels, handkerchiefs, cups, spoons, toys. Diseases transmitted by fomites–diphtheria, eye and skin infection.

- (c) **Vector borne transmission** occurs when the infectious agent is conveyed by an insect to a susceptible host. Mechanical transmission of the infectious agent through an insect occurs by houseflies. In some cases the infectious agent multiples in the insect (biological transmissions) and then is transported to susceptible host. For example transmission of malaria by mosquito. Another way is dissemination of microbial agent by air to a suitable portal of entry, usually the respiratory tract. Dust is responsible for this kind of transmission.

GENERAL PREVENTIVE MEASURES

- (a) **Safe drinking water :** Drinking water should be filtered to remove suspended particles and boiled, ozonized and treated with chlorine before drinking to avoid water borne diseases like typhoid, cholera, hepatitis etc.
- (b) **Proper disposal of waste :** Garbage should not be dumped here and there rather it should be thrown in covered garbage cans and burnt or buried for disposal. Sewage carrying drains should be covered.
- (c) **Control of vectors :** Growth and breeding of animals like mosquitoes, rats, flies, cockroaches should be controlled by keeping surroundings clean, spraying insecticides, removing stagnant water from populated areas.

IMMUNITY

It involves circulatory system. It is the strongest of the body's defence mechanisms.

- (a) **Natural immunity :** Natural immunity can be acquired by recovering from the attack of a disease. Once the body has suffered an infection and has learned to make antibodies against it, the body retains this ability even though it ceases making the antibodies. Thus when infection occurs again, the body quickly resumes making antibodies against it.
- (b) **Acquired immunity :** Transmitting mild form of microbes of a disease to a healthy person is vaccination. It gives an artificially acquired form of active immunity. Vaccine acts as antigen which stimulates the inoculated person to produce antibodies which prevents healthy person from the disease against which he has been inoculated. The ability to make antibodies is retained for many years though not for life. Children are regularly vaccinated against diphtheria, tetanus, whooping cough, polio and small pox. Vaccines for cold, influenza, measles and rabies have been developed. All vaccines whether they contain germs or their toxins are antigens, their main purpose is to stimulate the body to produce antibodies.

VIRAL DISEASES

- (a) **Jaundice or hepatitis**
Hepatitis or liver inflammation is a disease related to liver. The cause of this disease is *hepatitis* virus, it propagates through **contaminated water, food or injected needle**. Hepatitis may be of A, B, C, D, E or G type but A and B are more infectious. Incubation period for this disease is 15 to 80 days. High fever, cold, headache, nausea, vomiting and weakness are the symptoms. Dark yellow urine and light yellow faeces are main symptoms of this disease.

- (b) **Rabies :** The cause of this disease is a *Rhabdo virus*. This disease propagates by **biting of infected dog, cat, wolf, monkey etc.** High fever, intense headache, contraction of throat and chest muscles with pain, excessive secretion of saliva and restlessness are the primary symptoms of the diseases. Since patient develops fear for water, the disease is also called as **Hydrophobia**.
- (c) **Polio :** The cause of this disease is a *Enterovirus*. It is propagated through contaminated food, milk and water. Polio or poliomyelitis is a dangerous disease of children. Child suffers paralysis due to damage of central nervous system. **Oral polio** vaccine is the best preventive measure of polio.
- (d) **Chicken pox :** The cause of this disease is a Virus, known as *Varicella zoster*. It propagates through contact with a patient or scab. Patient suffers fever, headache and loss of appetite. Dark red spots appear on back and chest, soon these spots get filled up with water and convert into blisters. Blisters dry after some days and scabbing get started. This is the infectious stage of the disease.
- (e) **Measles :** This is a highly infectious disease of children. It propagates through indirect contact or through air. The cause of this disease is *Rubella virus*. Patient gets sore throat due to cold. Red grains appear on face after 4-5 days and afterwards spread on entire body. For prevention **MMR vaccination** should be done.
- (f) **Dengue :** This is a dangerous disease caused by Dengue virus. It spreads by mosquito *Aedes aegypti*. Main symptoms are high fever, headache, soreness of eyes and joints and pain in stomach due to convulsions. On growing intensity of disease bleeding starts from nose, mouth, and gums. Patient may vomit with or without blood.
- (g) **Ebola virus disease:** Ebola is a severe and often deadly disease caused by a virus called Ebola virus. It can occur in humans and other primates (monkey, chimpanzee and gorillas). **Symptoms:** Fever, chills, severe headache, muscle pain, weakness, diarrhea, vomiting, bleeding and often death. **Occurrence:** Ebola was discovered in 1976 near the Ebola River in the Democratic Republic of the Congo. Since then several outbreaks have occurred in Africa. The 2014 outbreak is the largest. The countries affected in this recent outbreak include Guinea, Liberia, Sierra Leone. In 2014 (October) WHO declared both Nigeria and Senegal free of Ebola virus transmission. **Transmission:** Spread by direct contact with infected body fluids including but not limited to urine, saliva, sweat, feces, vomit, breast milk and semen. The virus can enter the body through a break in the skin or through mucous membranes, including the eyes, nose and mouth. It can also spread by contact with any surface, objects and materials that have been in contact with body fluids from a sick person such as clothing bandages, medical equipment, needles, syringes etc.

AIDS

Full name is **Acquired Immuno Deficiency Syndrome**. It is a severe, life threatening disease, first recognized in 1981. The causative organism of this disease is (HIV-1 and HIV-2). "Human immune deficiency virus" which is a '*Retro virus*'.

HIV attacks the immune system by destroying CD4⁺ T cells, a type of white blood cell that is vital to fighting off infection. The destruction of these cells makes people vulnerable to other diseases and infections and may ultimately lead to death of the patient.

A person is diagnosed with AIDS when the count of CD4⁺ T cells goes below 200 cells per ml³ of blood.

The virus is transmitted from an infected person to a healthy person mainly through sexual contact and exposure to blood or tissues, or transplacental transmission from an infected mother to the foetus.

1st case in 1981 America; 1st case in India 1986, Chennai.

Symptoms : Swollen lymph nodes, Decreased count of blood platelets causing hemorrhage and fever, severe damage to brain which may lead to loss of memory, ability to speak and even think.

Treatment: There is no specific treatment. Foetal infection can be reduced by using anti -HIV drug to reduce transmission of virus to the foetus of pregnant mothers.

Drugs used

- (1) AZT (Azido thymidine)
- (2) DDI (Dideoxyinosine)

These drugs inhibit the enzyme reverse transcriptase of HIV.

DISEASES CAUSED BY BACTERIA

- (a) **Tuberculosis (T.B.) :** Tuberculosis (T.B.) was first discovered by Robert Koch in 1882. It is an infectious disease which is communicated from one human being to another directly or indirectly. Tuberculosis may also be contracted from animals. It is caused by a bacterium-called *Mycobacterium tuberculosis*. The bacterium releases a toxin called **tuberculin**. In T.B., the patient feels sick and weak. There is a loss of appetite and weight. Typical fever pattern and night sweats are also common.

Child must be vaccinated for B.C.G. within few hours after birth. Antituberculosis (ATT) and DOTS treatment methods are available.

- (b) **Typhoid :** Typhoid is caused by the bacteria *Salmonella typhi* commonly found in intestine of man. Human infection is direct and the bacteria are spread through faecal matter by house flies, etc.

Symptom of this disease is continuous increase in body temperature for a week. Second week temperature remains constant. Meanwhile red grains appear on stomach. Body temperature decreases during 3rd and 4th weeks.

TAB-vaccination provides immunity for three years. **Oral Typhoid Vaccine (OTV)** is also available. Patient can take antibiotics drugs on advice of a doctor.

- (c) **Tetanus** : It is fatal disease caused by bacterium *Clostridium tetani*. These bacteria grow on fertile soil, dung etc. and enter human body through wounds or cuts on body. The cause of the disease is a toxic secretion from bacteria known as *Tetanospasmin*.

Due to this cramps start on back, jaws and neck. In intense condition entire body contracts in shape of a bow. In the end patient can't respire due to cramps in neck muscles and dies painfully.

For prevention **D.P.T.** vaccine dose is given to infants. To save infants from infection mothers should be vaccinated compulsorily.

DISEASE CAUSED BY PROTOZOA

Malaria : Malaria is caused by a protozoan parasite *Plasmodium*. This spreads through the bite of an insect vector-female anopheles mosquito which feeds on human blood. (male anopheles mosquito feeds upon plant juices).

Headache, nausea, muscular pains and high fever are the main symptoms of malaria. Malaria may also secondarily cause enlargement of spleen and liver.

Larvivorous fishes like *Gambusia*, *Minnows*, *Trouts* should be kept in large water bodies. These fishes feed on mosquito larvae and help us. Mosquito repellents can also be used. Patient can be given drugs like *quinine*, *chloroquine*, *primaquine*, *peludrine* etc. on advice of a doctor.

Antibiotic

- Antibiotic is a substance produced by a living organisms which is toxic (poisonous) for other living organisms, specially for the germs (Bacteria). In the year 1928, Sir Alexander Fleming while studying bacteria in a culture being prepared in his laboratory found that bacteria did not grow around a green mould, *Penicillium notatum*, which was also

present in the culture. This was the first antibiotic discovered and extracted and named as penicillin.

- **Antiseptic** : Joseph Lister, an English surgeon found that pus formation in a wound is reduced or checked when it is immediately cleaned with carbolic acid. He named carbolic acid as antiseptic. He also introduced the system of boiling and washing surgical instruments with carbolic acid and cleaning hands with carbolic soap. This practice killed germs and it was termed as 'sterilization'. Later alcohol, chlorination and solution of potassium permanganate also came into use for sterilization.
- **Vaccine** : It was British Physician, Edward Jenner who noticed that milkmaids often contracted mild infection of 'cow pox' and also found that once a maid has suffered from cow pox gets immune to cowpox and small pox. Jenner collected cow-pox fluid from one patient and pushed it into the blood of a healthy cowboy. The infected cowboy got ill for 2 to 3 days only and had become immune to small pox for life. The fluid from cow-pox was termed as vaccine (vacca meaning cow in latin). The process of injecting vaccine in a healthy person is termed as vaccination. Resistance to disease for the future is called immunisation.

Types of vaccines

First generation vaccines: These vaccines are prepared by inactivating the whole pathogen. These vaccines have been effectively used to control a number of diseases.

For eggs : Influenza, measles, rubella, cholera, polio

Second generation vaccine: These vaccines use only the specific part (the antigen) of the pathogen. Antigenic polypeptides of pathogens are produced with recombinant DNA technology.

For Example Hapitites B

Third generation vaccines : These are the most recent vaccines called DNA vaccines in which either naked DNA is used directly or packaged in a recombinant virus or bacteria.

Vaccine	Protect against	Given at
5 in one vaccine	Diphtheria, tetanus, whooping cough Polio & Hib (<i>Haemophilum influenzae</i>)	2, 3, 4 months of age
Pneumococcal (PCV)	Pneumococcal infection	2, 4, & 12 - 13 months of age
Rotavirus	Rotavirus infection (childhood diarrhoea and sickness)	2 -3 months of age
Meningitis C (Men C)	Meningitis C	3, & 12-13 months of age and a teenage booster at 13-15 years
MMR	measles, mumps and rubella	12-13 months & 3 years 4 months of age
4 in one preschool booster	Diphtheria, tetanus, whooping cough and polio	3 years 4 months of age.

BIODIVERSITY

- Biodiversity is the term popularised by the sociobiologist Edward Wilson to describe the combined diversity at all the levels of biological organisation.
The most important of them are—
- (i) **Genetic diversity** : A single species might show high diversity at the genetic level over its distributional range. The genetic

variation shown by the medicinal plant *Rauwolfia vomitoria* growing in different Himalayan ranges might be in terms of the potency and concentration of the active chemical (reserpine) that the plant produces. India has more than 50,000 genetically different strains of rice, and 1,000 varieties of mango.

- (ii) **Species diversity:** The diversity at the species level. For example, the Western Ghats have a greater amphibian species diversity than the Eastern Ghats.
- (iii) **Ecological diversity:** At the ecosystem level, India, for instance, with its deserts, rain forests, mangroves, coral reefs, wetlands, estuaries, and alpine meadows has a greater ecosystem diversity than a Scandinavian country like Norway.

BIODIVERSITY CONSERVATION

Biodiversity conservation may be in situ as well as ex situ. In in situ conservation, the endangered species are protected in their natural habitat so that the entire ecosystem is protected. Recently, 34 'biodiversity hotspots' in the world have been proposed for intensive conservation efforts. Of these, three (Western Ghats-Sri Lanka, Himalaya and Indo-Burma) cover India's rich biodiversity regions. Our country's in situ conservation efforts are reflected in its 18 biosphere reserves, 112 national parks, > 515 wildlife sanctuaries and many sacred groves. Ex situ conservation methods include protective maintenance of threatened species in zoological parks and botanical gardens, in vitro fertilisation, tissue culture propagation and cryopreservation of gametes.

THREATENED SPECIES CONCEPT

The International Union for Conservation of Nature and Natural Resources (IUCN), have its head quarters at Morgis in Switzerland and maintains a Red Data Book that provide a record of animals and plants which are known to be in danger. In India the Wildlife (Protection) Act, 1972 provides four schedules categorising the fauna of India based on their conservation status. Schedule 1 lists the rare and endangered species which are afforded legal protection. For the purpose of conservation species are categorized as below:

Threatened (T) : The term is used in context with conservation of the species which can be anyone of the above 3 categories.

Threatened = Endangered + Vulnerable + Rare

1. **Endangered (E) :** Those species which are in the immediate danger of extinction and whose survival is unlikely, whose number have been reduced to a critical level, if the casual factors continue to be operating.
2. **Vulnerable (V) :** The species likely to move into the endangered category in the near future if the casual factors continue to operate. Their population is still abundant but are under threat throughout their range.
3. **Rare (R) :** These are species with small population in the world. These are not at present endangered and vulnerable, but are at risk due to their less number. These species are usually localised within restricted geographical areas or habitats.

BIOSPHERE RESERVES

It is a specified protected area in which multiple use of the lands are permitted.

There are 3 zones of biosphere reserve.

1. **Core zone :** It lies at the centre where no human activity is allowed.

2. **The Buffer zone :** Where limited human activity is allowed.
3. **Manipulating zone or Transition zone:** Where a large number of human activities would go on.

Note: In India following 18 sites have been identified as potential biosphere reserves together with their locations:

Biosphere Reserve	States
1. Nanda Devi	Uttaranchal
2. Nokrek	Meghalaya
3. Manas	Assam
4. Dibru Saikhowa	Assam
5. Dehang Debang	Arunachal Pradesh
6. Sunderbans	West Bengal
7. Gulf of Mannar	Tamil Nadu
8. Nilgiri	Kerala, Karnataka and Tamil Nadu
9. Great Nicobar	Andaman & Nicobar
10. Simlipal	Orissa
11. Kanchanjunga	Sikkim
12. Pachmarhi	Madhya Pradesh
13. Agasthyamalai	Kerala
14. Achankamar	Madhya Pradesh, Chattisgarh
15. Great Rann of Kutch (2008)	Gujarat
16. Cold desert (2009)	Himachal Pradesh
17. Seshachalam hills (2010)	Andhra Pradesh
18. Pauma (2011)	Madhya Pradesh

NATIONAL PARKS AND MAIN SANCTUARIES IN INDIA

National Parks : In national parks both plants and animals are protected. There are 112 National Parks which occupy about 1.21% of the country's total surface area.

Sanctuaries : There are 515 wildlife Sanctuaries.

India's Famous Tiger Reserve

- * Jim Corbett National Park – Nainital (Uttaranchal)
- * Dudhwa National Park – Lakhimpur Kheri (U.P.)
- * Kanha National Park – Mandala and Salghat (Madhya Pradesh)
- * Indrawati National Park – Chattishgarh
- * Simli National Park – Orissa

GENETICALLY MODIFIED CROPS

Plants, bacteria, fungi and animals whose genes have been altered by manipulation are called Genetically Modified Organisms (GMO).

A transgenic crop is a crop that contains and expresses a transgene (genetically modified gene). This crop is known as genetically modified crops or GM crops.

Two unique advantages :

- (i) Any gene (from any organism or a gene synthesised chemically) can be used for transfer, and
- (ii) The change in genotype can be precisely controlled since only the transgene is added into the crop genome. For example - Hirudin is a protein that prevents blood clotting. The gene encoding hirudin was chemically synthesized and transferred into *Brassica napus*, where hirudin accumulates in seeds. The hirudin is purified and used in medicine. A soil bacterium *Bacillus thuringiensis*, produces crystal [Cry] protein. This Cry protein is toxic to larvae of certain insects. The gene encoding cry protein is called cry gene. This Cry protein is isolated and transferred into several crops. A crop expressing a cry gene is usually resistant to the group of insects for which the concerned Cry protein is toxic.

BIOFERTILIZERS

Micro-organisms (bacteria, fungi and cyanobacteria) employed to enhance the availability of nutrients like nitrogen (N), and phosphorus (P) to crops are called biofertilisers. Several micro-organisms fix atmospheric nitrogen and make them available to plants.

Examples of nitrogen-fixing micro-organisms are bacteria and cyanobacteria (blue-green algae); some of these are free-living, while others form symbiotic association with plant roots. Rhizobia form root nodules in legume crops and some cyanobacteria (blue-green algae) form symbiotic association with the fern **Azolla**.

The fungus and plant root association is called mycorrhiza. Some of these fungi are present on root surface only, whereas others enter into the roots as well. These fungi solubilise phosphorus, produce plant growth promoting substances and protect host plants from soil pathogens.

Biofertilisers are a low-cost input and they do not pollute the environment. They also reduce the dependence on chemical fertilisers and also help to use organic farming.

ACHIEVEMENTS OF GENETIC ENGINEERING

The DNA recombinant technology or genetic engineering provides great benefits for advancement of science and society.

Applications of Recombinant DNA products

Medically useful recombinant products	Applications
Human insulin Human growth hormone Calcitonin Chorionic gonadotropin Blood clotting factor VIII/IX	Treatment of insulin - dependent diabetes Replacement of missing hormone in short stature people. Treatment of rickets. Treatment of infertility. Replacement of clotting factor missing in patients with Haemophilia A/B. Dissolving of blood clots after heart attacks and strokes. Stimulation of the formation of erythrocytes (RBCs) for
Tissue Plasminogen activator (TPA) Erythropoietin	

Platelet derived growth factor
Interferon
Interleukin
Vaccines

patients suffering from anaemia during dialysis or side effects of AIDS patients treated by drugs.
Stimulation of wound healing
Treatment of pathogenic viral infections and cancer
Enhancement of action of immune system
Prevention of infectious diseases such as hepatitis B, herpes, influenza, pertusis, meningitis, etc.

Application of Genetically Engineered Microbes

Microbes	Applications
<i>Escherichia coli</i> (gut bacterium)	Production of human insulin, human growth factor interferons, interleukin and so on.
<i>Bacillus thuringiensis</i> (soil bacterium)	Production of endotoxin (Bt toxin), highly potent, safe and biodegradable insecticide for plant protection.
<i>Rhizobium meliloti</i> (bacterium)	Nitrogen fixation by incorporating "nif" gene in cereal crops.
<i>Pseudomonas putida</i> (bacterium)	Scavenging of oil spills, by digesting hydrocarbons of crude oil.
Bacterial strains capable of accumulating heavy metal	Bioremediation (cleaning of pollutants in the environment).
<i>Trichoderma</i> (fungus)	Production of enzyme chitinase for biocontrol of fungal diseases in plants.

Transgenics and their potential applications

Transgenic	Useful applications
Bt Cotton	Pest resistance, herbicide tolerance, and high yield.
<i>Flavr Savr</i> (Tomato)	Increased shelf-life (delayed ripening) and better nutrient quality
Golden Rice	Vitamin A and Fe - rich
Cattles (Cow, sheep, goat)	Therapeutic human proteins in their milk
Pig	Organ transplantation without risk of rejection



EXERCISE



1. Mass is the measure of
 - (a) matter contained
 - (b) weight
 - (c) force
 - (d) none of these
2. The mass is measured by
 - (a) a beam balance
 - (b) a spring balance
 - (c) micro balance
 - (d) none of these
3. A hydrometer is used to measure –
 - (a) density
 - (b) mass
 - (c) weight
 - (d) R.D.
4. Among the following the derived quantity is
 - (a) mass
 - (b) length
 - (c) density
 - (d) time
5. The SI unit of current is
 - (a) kelvin
 - (b) ampere
 - (c) newton
 - (d) volt
6. One micron equals to
 - (a) 10^{-3} m
 - (b) 10^{-9} m
 - (c) 10^{-6} m
 - (d) 10^{-2} m
7. The SI unit of density
 - (a) gram/metre³
 - (b) kilogram/metre³
 - (c) gram/cm³
 - (d) kg/cm³
8. Which of the following is not a fundamental unit?
 - (a) newton
 - (b) kilogram
 - (c) metre
 - (d) second
9. The unit of is a derived unit –
 - (a) temperature
 - (b) length
 - (c) velocity
 - (d) luminous intensity
10. The SI unit of weight is :
 - (a) kilogram
 - (b) newton
 - (c) newton metre
 - (d) kilometre
11. When a substance is heated its density
 - (a) increases
 - (b) decreases
 - (c) remains same
 - (d) none of these
12. In SI units, candela is the unit of
 - (a) current
 - (b) temperature
 - (c) luminous intensity
 - (d) none of the above
13. Practical unit of heat is
 - (a) Calorie
 - (b) Horse power
 - (c) Joule
 - (d) Watt
14. If force and displacement of particle in direction of force are doubled. Work would be –
 - (a) Double
 - (b) 4 times
 - (c) Half
 - (d) 1/4 times
15. If velocity of a body is twice of previous velocity, then kinetic energy will become –
 - (a) 2 times
 - (b) 1/2 times
 - (c) 4 times
 - (d) 1 times
16. The unit of work is
 - (a) newton
 - (b) joule
 - (c) metre
 - (d) second
17. 1 kilowatt hour is equal to –
 - (a) 1 joule
 - (b) 100 joule
 - (c) 36 joule
 - (d) 3.6×10^3 kilo joule
18. When a stone is thrown upward to a certain height, it possesses –
 - (a) potential energy
 - (b) kinetic energy
 - (c) wind energy
 - (d) sound energy
19. Kilowatt hour is the unit of –
 - (a) time
 - (b) power
 - (c) energy
 - (d) force
20. A fast wind can turn the blades of a windmill because it possesses
 - (a) potential energy
 - (b) kinetic energy
 - (c) chemical energy
 - (d) heat energy
21. Splitting of Uranium nucleus releases
 - (a) kinetic energy
 - (b) potential energy
 - (c) nuclear energy
 - (d) chemical energy
22. A bullet fired from a gun possesses
 - (a) potential energy
 - (b) kinetic energy
 - (c) wind energy
 - (d) solar energy
23. Potential energy of your body is minimum when you –
 - (a) are standing
 - (b) are sitting on a chair
 - (c) are sitting on the ground
 - (d) lie down on the ground
24. Work is defined as
 - (a) Force per unit time
 - (b) Force over a distance
 - (c) Force per unit distance
 - (d) None of the above
25. The S.I. unit of energy is
 - (a) joule
 - (b) newton
 - (c) metre/second
 - (d) newton-metre
26. What is the sign of the work performed on an object in uniform circular motion?
 - (a) Zero
 - (b) Positive
 - (c) Negative
 - (d) Depends on the particular situation
27. What is the magnitude of the work done by a force acting on a particle instantaneously?
 - (a) Zero
 - (b) Positive
 - (c) Negative
 - (d) None of these
28. Energy is measured in the same units as
 - (a) Power
 - (b) Force
 - (c) Work
 - (d) None of the above
29. The units of power are defined as
 - (a) Joules
 - (b) Newtons
 - (c) Joules per meter
 - (d) Watts
30. The potential energy is always the same for an object with the same
 - (a) Velocity
 - (b) Speed
 - (c) Acceleration
 - (d) Position
31. The sum of potential and kinetic energy is always
 - (a) Zero
 - (b) Positive
 - (c) Negative
 - (d) None of the above

32. The sum of the change in kinetic and potential energy is always
 (a) Zero (b) Positive
 (c) Negative (d) None of the above

33. The potential energy of gravity is defined as
 (a) mg (b) mg/h
 (c) mgh (d) g/h

34. If the K.E. of a body is increased by 300%, its momentum will increase by –
 (a) 100% (b) 150%
 (c) $\sqrt{300}\%$ (d) 175%

35. Two masses m and $9m$ are moving with equal kinetic energies. The ratio of the magnitudes of their momenta is –
 (a) 1 : 1 (b) 1 : 3
 (c) 3 : 1 (d) 1 : 9

36. Kinetic energy is proportional to
 (a) v^2 (b) v
 (c) a (d) Work

37. When a gas is compressed, its pressure :
 (a) increases (b) decreases
 (c) remains the same (d) none of these

38. If the weight of a body is more than the weight of the liquid displaced by it, then the body may:
 (a) float
 (b) first floats and then sinks
 (c) sinks
 (d) neither floats nor sinks

39. The thrust is expressed in
 (a) Newton (b) Pascals
 (c) N/m^2 (d) none of these

40. When pressure exerted on an enclosed liquid or gas at rest, is transmitted equally in all the directions, is in accordance with:
 (a) Pascal's law (b) Boyle's law
 (c) Archimedes' principle (d) Principle of floatation

41. Purity of a metal can be determined with the help of
 (a) Pascal's law
 (b) Boyle's law
 (c) Archimedes principle
 (d) Conservation of mass principle

42. If both the mass and the velocity of a body is increased to twice of their magnitude, the kinetic energy will increase by
 (a) 2 times (b) 4 times
 (c) 8 times (d) 16 times

43. Two bodies kept at a certain distance feel a gravitational force F to each other. If the distance between them is made double the former distance, the force will be
 (a) $2F$ (b) $\frac{1}{2}F$
 (c) $4F$ (d) $\frac{1}{4}F$

44. Stationary wave is formed by
 (a) a transverse wave superposing a longitudinal wave
 (b) two waves of the same speed superposing
 (c) two waves of same frequency travelling in the same direction
 (d) two waves of same frequency travelling in the opposite direction

45. The force of attraction between the molecules is maximum:
 (a) in solids (b) in liquids
 (c) in gases
 (d) in all the three states of matter

46. The liquid used in a simple barometer is :
 (a) mercury (b) water
 (c) alcohol (d) kerosene

47. Surface tension is due to –
 (a) Frictional forces between molecules
 (b) Cohesive forces between molecules
 (c) Adhesive forces between molecules
 (d) Gravitational forces

48. When there is no external force, the shape of a liquid drop is determined by –
 (a) Surface tension of the liquid
 (b) Density of liquid
 (c) Viscosity of liquid
 (d) Temperature of air body

49. A pin or a needle floats on the surface of water, the reason for this is –
 (a) Surface tension (b) Less weight
 (c) Upthrust of liquid (d) None of the above

50. The volume of the certain mass of a gas, at constant temperature is :
 (a) directly proportional to pressure
 (b) inversely proportional to pressure
 (c) remains constant
 (d) none of these

51. Atmospheric pressure is measured by
 (a) thermometer (b) barometer
 (c) speedometer (d) (b) and (c)

52. Surface tension of a liquid is due to force of molecules of the liquid
 (a) cohesive (b) adhesive
 (c) gravitational (d) frictional

53. The S.I. unit of heat energy is
 (a) Joule (b) Calorie
 (c) Kilo calorie (d) none of these

54. 1 calorie equals to
 (a) 4.2 J (b) 0.42 J
 (c) 420 J (d) 4200 J

55. Heat capacity equal to
 (a) $\text{mass} \times \text{specific heat capacity}$
 (b) $\text{mass} / \text{specific heat capacity}$
 (c) $\text{specific heat capacity} / \text{mass}$
 (d) none of these

56. A and B are two bodies. The temperature of A is greater than that of B. The heat will flow
 (a) A to B (b) B to A
 (c) Will not flow (d) none of these

57. When water is heated from 0°C , its volume
 (a) increases
 (b) decreases till 4°C
 (c) remains the same
 (d) first increases then decreases

87. If a real object is placed inside the focal point of a concave mirror, the image is –
 (a) real and upright (b) real and inverted
 (c) virtual and upright (d) virtual and inverted
88. A person standing in front of a mirror finds his image smaller than himself and erect. This implies the mirror is –
 (a) plane (b) concave
 (c) convex (d) None of the above
89. A solar eclipse is caused when the
 (a) sun comes between the earth and the moon
 (b) moon comes between the sun and the earth
 (c) earth comes between the sun and the moon
 (d) none of these
90. A ray from air enters water, then through a thick layer of glass placed below water. After passing through glass, it again comes out in air medium. Then final emergent ray will –
 (a) Bend towards the normal
 (b) Bend away from the normal
 (c) Suffer lateral displacement
 (d) Have the same path as if it had not passed through glass and water.
91. A lens produces an enlarged, virtual image. What kind of lens is it?
 (a) converging
 (b) diverging
 (c) It could be either diverging or converging.
 (d) None
92. Virtual images of objects of the same size are formed by –
 (a) a concave mirror (b) a convex mirror
 (c) a plane mirror (d) all the above
93. The splitting of white light into several colours on passing through a glass prism is due to –
 (a) refraction (b) reflection
 (c) interference (d) diffraction
94. Rainbow is formed due to a combination of –
 (a) Refraction and absorption
 (b) Dispersion and focussing
 (c) Refraction and scattering
 (d) Dispersion and total internal reflection
95. If angle of incidence is 60° , then the angle of reflection will be
 (a) 30° (b) 60°
 (c) 120° (d) 90°
96. Myopia is due to –
 (a) elongation of eye ball
 (b) irregular change in focal length
 (c) shortening of eye ball
 (d) older age
97. Blue colour of sky is due to phenomenon of –
 (a) Reflection (b) Refraction
 (c) Scattering (d) Dispersion
98. The human eye can focus objects at different distances by adjusting the focal length of the eye lens. This is due to
 (a) presbyopia (b) accommodation
 (c) near-sightedness (d) far-sightedness
99. The change in focal length of an eye lens is caused by the action of the –
 (a) pupil (b) retina
 (c) ciliary muscles (d) iris
100. Rainbow is caused due to –
 (a) Reflection of sun light air
 (b) Dispersion of sun light from water drops
 (c) Refraction of sun light from water drops
 (d) Diffraction of sun rays from water drops
101. In the visible spectrum the colour having the shortest wavelength is –
 (a) Green (b) Red
 (c) Violet (d) Blue
102. On entering a glass prism, sun rays are –
 (a) Deviated but not dispersed
 (b) Deviated and dispersed
 (c) Dispersed but not deviated
 (d) Neither deviated nor dispersed.
103. In case of hypermetropia –
 (a) The image of near objects is formed in front of retina
 (b) The image of near objects is formed behind the retina
 (c) A concave lens should be used for correction
 (d) A convex lens cannot be used for correction
104. Astigmatism can be corrected by –
 (a) Bifocal lenses (b) Cylindrical lenses
 (c) Concave lenses (d) Planoconvex lenses
105. The phenomenon of light in which light that strikes to smooth surface and thrown back into the same medium is called
 (a) reflection (b) refraction
 (c) scattering (d) none of these
106. A man wearing glasses of focal length +1m cannot clearly see beyond one meter –
 (a) If he is far sighted (b) If he is near sighted
 (c) If his vision is normal (d) In each of these cases
107. The image formed by convex lens in a simple microscope
 (a) virtual and erect
 (b) real and inverted
 (c) equal in size with the object
 (d) none of these
108. The mirror used in motor vehicles near the driver's seat is a
 (a) concave mirror (b) convex mirror
 (c) plane mirror (d) none of these
109. Light waves –
 (a) Require air or another gas to travel through
 (b) Require an electric field to travel through
 (c) Require a magnetic field to travel through
 (d) Can travel through perfect vacuum
110. The image formed by a convex spherical mirror is –
 (a) sometimes real, sometimes virtual
 (b) sometimes erect, sometimes inverted
 (c) always real and inverted
 (d) always virtual and upright.

111. The term refraction of light is –
- The bending of light rays when they enter from one medium to another medium
 - Splitting of white light into seven colours when it passes through the prism
 - Bending of light round corners of obstacles and apertures
 - Coming back of light from a bright smooth surface
112. The absolute refractive index of a medium depends on –
- nature of the medium only
 - wavelength of light only
 - temperature of the medium only
 - all of the above
113. A real image is formed by a convex mirror when the object is placed at –
- infinite
 - between center of curvature and focus
 - between focus and pole
 - none of the above
114. Ability of the eye to see objects at all distances is called –
- Binocular vision
 - Myopia
 - Hypermetropia
 - Accommodation
115. The point where the rays from a point object meet after reflection through a lens is called the
- focus
 - centre of curvature
 - optical centre
 - image point
116. In the figure in previous question, the white screen is at the –
- centre of curvature of the concave mirror
 - principal focus of the concave mirror
 - pole of the concave mirror
 - none of above
117. The length of a wire is doubled and the radius is doubled. By what factor does the resistance change –
- 4 times as large
 - twice as large
 - unchanged
 - half as large
118. Kilowatt-hour is the unit of –
- potential difference
 - electric power
 - electrical energy
 - charge
119. An electric bulb is filled with –
- hydrogen
 - oxygen and hydrogen
 - ammonia
 - nitrogen and argon
120. The unit of resistivity is –
- ohm
 - ohm/m
 - ohm × m
 - mho
121. If a wire is stretched to make its length three times, its resistance will become –
- three times
 - one-third
 - nine times
 - one-ninth
122. The resistivity of a wire depends on –
- length
 - area of cross-section
 - material
 - all the above three factors
123. Which of the following statements does not represent Ohm's law
- current/potential difference = constant
 - potential difference/current = constant
 - potential difference = current × resistance
 - current = resistance × potential difference
124. Fleming's right hand rule is used to find the direction of the
- Alternate current
 - Direct current
 - Induced current
 - Actual current
125. The unit of electrical power is
- Volt
 - Watt
 - Kilowatt hour
 - Ampere
126. The resistance of the human body (dry condition) is of the order of
- 10^1 Ohm
 - 10^2 Ohm
 - 10^3 Ohm
 - 10^4 Ohm
127. Certain substances loose their electrical resistance completely at super low temperature. Such substances are called
- super conductors
 - semi conductors
 - dielectrics
 - perfect conductors
128. Fuse wire is made of –
- platinum
 - copper
 - aluminium
 - alloy in tin and lead
129. Which of the following terms does not represent electrical power in a circuit?
- I^2R
 - IR^2
 - VI
 - V^2/R
130. Ampere-second stands for the unit of –
- power
 - charge
 - emf
 - energy
131. Coulomb is equal to –
- $1 \text{ amp} \times 1 \text{ sec}$
 - $1 \text{ amp}/1 \text{ sec}$
 - $1 \text{ joule} \times 1 \text{ amp}$
 - $1 \text{ joule}/1 \text{ sec}$
132. The unit for specific resistance is –
- ohm × second
 - ohm × cm
 - ohm
 - ohm/cm
133. The unit for electric conductivity is –
- ohm per cm
 - ohm × cm
 - ohm per second
 - mho
134. The filament of an electric bulb is of tungsten because –
- Its resistance is negligible
 - It is cheaper
 - Its melting point is high
 - Filament is easily made
135. The resistance of a thin wire in comparison of a thick wire of the same material –
- is low
 - is equal
 - depends upon the metal of the wire
 - is high
136. The resistance of an ideal voltmeter is –
- zero
 - very low
 - very large
 - Infinite
137. The reciprocal of resistance is –
- Conductance
 - Resistivity
 - Voltage
 - None of the above

198. Zinc is
 (a) non-malleable. (b) brittle.
 (c) ductile. (d) (a) and (b).
199. The only non-metal that has luster is
 (a) Sulphur (b) Phosphorus
 (c) Silicon (d) Iodine
200. Which of the following is a liquid metal?
 (a) Mercury (b) Bromine
 (c) Water (d) Sodium
201. The property of metals to be hammered into their sheets is called
 (a) malleability (b) ductility
 (c) tensile strength (d) sonorous nature
202. Select the metal that is soft
 (a) Aluminium (b) Copper
 (c) Sodium (d) Lead
203. The process of protecting iron, from rusting, by coating with zinc is called
 (a) Rusting (b) Roasting
 (c) Smelting (d) Galvanizing
204. Graphite is a/an –
 (a) alloy (b) metal
 (c) metalloid (d) non metal
205. The white phosphorus is stored –
 (a) in air (b) under water
 (c) under kerosene (d) under CS_2
206. The chief ore of aluminium is –
 (a) bauxite (b) cryolite
 (c) alunite (d) feldspar
207. Which is the best variety of coal?
 (a) Peat (b) Lignite
 (c) Anthracite (d) Bituminous
208. Which is a fossil fuel?
 (a) Natural gas (b) Biogas
 (c) Producer gas (d) None of these
209. Which of the following cells do not have a nucleus ?
 (a) Brain cell (b) Cardiac muscle fibres
 (c) Paraecium (d) Mature human RBC
210. Which cell organelle is known as the control centre of the cell ?
 (a) Nucleus (b) Chloroplast
 (c) Mitochondria (d) Endoplasmic reticulum
211. Energy currency of the cell is –
 (a) AMP (b) GTP
 (c) ATP (d) All
212. Which of the following organelles are semiautonomous organelle ?
 (a) Mitochondria (b) Ribosomes
 (c) Chloroplast (d) Both (a) and (c)
213. In the mitochondrion energy is stored in the form of
 (a) adenosine triphosphate (ATP)
 (b) adenosine monophosphate (AMP)
 (c) citric acid
 (d) adenosine diphosphate (ADP)
214. The site of protein synthesis in plants is the
 (a) Chloroplast (b) Ribosomes
 (c) Pyrenoids (d) Mitochondria
215. Synthesis of any protein in a cell is determined by
 (a) type of ribosomes
 (b) mitochondria
 (c) sequence of nucleotides in DNA
 (d) sugar and phosphate of DNA
216. The plasma membrane is
 (a) permeable (b) semipermeable
 (c) differentially permeable (d) impermeable
217. A form of condensation that reduces visibility and causes breathing problems is
 (a) Dew (b) Frost
 (c) Smog (d) Mist
218. The total population divided by available arable land area is referred to as
 (a) Population density (b) Nutritional density
 (c) Agricultural density (d) Industrial density
219. Green glands are associated with
 (a) Reproduction (b) Excretion
 (c) Respiration (d) Digestion
220. During respiration, the gases enter into the blood and leave the same by the process of
 (a) Active transport
 (b) Diffusion
 (c) Diffusion and active transport
 (d) Osmosis
221. Heart is devoid of
 (a) Cardiac muscle (b) Involuntary muscle
 (c) Voluntary muscle (d) Smooth muscle
222. The soil salinity is measured by
 (a) Conductivity meter (b) Hygrometer
 (c) Psychrometer (d) Auxanometer
223. Which of the following is a fungal disease?
 (a) Leucoderma (b) Eczema
 (c) Ringworm (d) Elephantiasis
224. Chickenpox is caused by
 (a) DNA virus (b) Variola virus
 (c) Streptococcus (d) Vibrio cholerae
225. The stability of a pond ecosystem depends on
 (a) micro-organisms and fishes
 (b) micro-organisms and zoo plankton
 (c) fishes and reptiles
 (d) producers and consumers
226. The main factor which determines the balance of nature is
 (a) human activities (b) Rabbit and habitat
 (c) environmental conditions (d) availability of food
227. The golgi bodies are related to
 (a) Respiration (b) Excretion
 (c) Secretion (d) Circulation
228. The most abundant compound in cytoplasm is
 (a) fat (b) water
 (c) protein (d) carbohydrates
229. Mitochondria usually occur in
 (a) Vegetative cells
 (b) Reproductive cells
 (c) Both vegetative and reproductive cells
 (d) None of these

291. Pseudomycelium is formed in –
 (a) Yeast (b) *Rhizopus*
 (c) Mushroom (d) *Puccinia*

292. The fungal partner of lichens is known as –
 (a) Mycobiont (b) Phycobiont
 (c) Symbiont (d) Basidiomycetes

293. What are ‘Fungi Imperfecti’ ?
 (a) They are fungi that reproduce only sexually.
 (b) They are the fungi that reproduce exclusively by vegetatives and asexual methods.
 (c) They are the fungi which only show parasitic mode of nutrition.
 (d) None of the above.

294. Who invented vaccine for small pox ?
 (a) Robert Koch (b) Robert Hooke
 (c) Edward Jener (d) Louis Pasteur

295. Which of the following is a viral disease ?
 (a) Tetanus (b) Tuberculosis
 (c) Typhoid (d) AIDS

296. BCG stands for –
 (a) Bacillus Carol Gram
 (b) Bacillus Chalmette Guerin
 (c) Bacteria Chalmette Gram
 (d) None of the above

297. Which of the following diseases is also known as infantile paralysis?
 (a) Lock jaw (b) Rabies
 (c) Polio (d) Chicken pox

298. Which of the following is not a communicable disease ?
 (a) Typhoid (b) Malaria
 (c) AIDS (d) Goitre

299. Against which of the following does *interferon* act ?
 (a) Bacteria (b) Virus
 (c) Fungi (d) Snake venom

300. Which of the following disease is a hormonal disorder ?
 (a) Anaemia (b) Cholera
 (c) Diabetes (d) Goitre

301. AIDS is caused by –
 (a) Blood cancer (b) HTLV-III
 (c) Bacterium (d) TMV

302. Vaccines are prepared from immune –
 (a) Vitamins (b) Blood
 (c) Serum (d) Plasma

303. AIDS is a/an
 (a) Endemic disease (b) Epidermic disease
 (c) Sporadic disease (d) Pandemic disease

304. Which one of the following pairs of disease can spread through blood transfusion?
 (a) Cholera and hepatitis
 (b) Hepatitis and AIDS
 (c) Diabetes mellitus and malaria
 (d) Hay fever and AIDS

305. Which of the following diseases is caused by Protozoa ?
 (a) Chicken pox (b) Measles
 (c) Filariasis (d) Sleeping sickness

306. The term “antibiotic” was coined by –
 (a) Alexander Fleming (b) Edward Jenner
 (c) Louis Pasteur (d) Selman waksman

307. Antibodies are produced by –
 (a) Erythrocytes (b) Thrombocytes
 (c) Monocytes (d) Lymphocytes

308. B.C.G. vaccine is used against –
 (a) T.B. (b) Leprosy
 (c) Food poisoning (d) None of these

309. DPT vaccine is given for –
 (a) Tetanus, polio, plague
 (b) Diphteria, whooping cough and leprosy
 (c) Diphteria, pneumonia, tetanus
 (d) Diphteria, whooping cough, tetanus

310. Active immunity is obtained by –
 (a) Antibodies
 (b) Weakened germs infection
 (c) Natural resistance
 (d) None of these

311. Which is an autoimmune disease?
 (a) Cancer
 (b) Asthma
 (c) *Erythroblastosis foetalis*
 (d) *Rheumatoid arthritis*

312. ‘Polio’ is caused by –
 (a) A bacteriophage
 (b) A virus with single strand RNA
 (c) A virus with single strand DNA
 (d) A virus with double strand DNA

313. If the body rejects its own cells, it is called –
 (a) Autografting (b) Hormonal deficiency
 (c) Immuno deficiency (d) Auto immunity

314. The jaundice is a physiological liver disease. It is caused by a –
 (a) Bacterium (b) Virus
 (c) Protozoan (d) Helminth

315. Which of the disease is not transmitted by house flies?
 (a) Typhoid (b) Yellow fever
 (c) Cholera (d) Dysentery

316. Cholera is caused by –
 (a) Virus (b) Bacteria
 (c) Fungi (d) Protozoan

317. The malignant tertian malaria is caused by –
 (a) *Plasmodium vivax* (b) *Plasmodium falciparum*
 (c) *Plasmodium ovale* (d) *Plasmodium malariea*

318. All the diseases are spread by housefly except –
 (a) Leprosy (b) Dysentery
 (c) Typhoid (d) Sleeping sickness

319. Tobacco smoke contains carbon monoxide which –
 (a) Reduces the oxygen-carrying capacity of blood
 (b) Causes gastric ulcers
 (c) Raises blood pressure
 (d) Is carcinogenic

320. Group of viral borned disease is –
 (a) Hepatitis and typhoid (b) Polio and dengue
 (c) Rabies and tetanus (d) Measles and cholera

348. Estrogen is secreted by –
 (a) Liver (b) Spleen
 (c) Ovaries (d) Pituitary

349. Insulin by chemical nature is –
 (a) Carbohydrate (b) Protein
 (c) Steroid (d) Lipid

350. Melatonin is a hormone produced by –
 (a) Adrenal gland (b) Pituitary gland
 (c) Pineal gland (d) Thymus gland

351. Adrenaline hormone causes :
 (a) Increase in blood pressure
 (b) Increase in heart beat
 (c) Both of them
 (d) None of them

352. Cry protein is obtained from –
 (a) *Bacillus thuringiensis* (b) *Bacillus subtilis*
 (c) *Clostridium welchi* (d) *E. coli*

353. First transgenic plant –
 (a) Potato (b) Tomato
 (c) Tobacco (d) Maize

354. The bacteria generally used for genetic engineering is
 (a) *Agrobacterium* (b) *Bacillus*
 (c) *Pseudomonas* (d) *Clostridium*

355. *Bacillus thuringiensis* (Bt) strains have been used for designing novel –
 (a) Bio-metallurgical techniques
 (b) Bio-insecticidal plants
 (c) Bio-mineralization processes
 (d) Bio-fertilizers

356. The first antibiotic discovered was –
 (a) Penicillin (b) Chloromycetin
 (c) Cephalosporin (d) Streptomycin

357. Which of the following is false for Bt transgenic plant –
 (a) Disease resistance
 (b) Prepared by *Bacillus thuringiensis*
 (c) It is recombinant type
 (d) No such plant is known

358. First cloned animal is –
 (a) Dog (b) Molly
 (c) Dolly sheep (d) Polly sheep

359. Genetically engineered human insulin is prepared by using –
 (a) *E. coli* (b) *Rhizopus*
 (c) *Pseudomonas* (d) Yeast

360. Golden rice is a transgenic crop of the future with the following improved trait –
 (a) High lysine (essential amino acid) content
 (b) Insect resistance
 (c) High protein content
 (d) High vitamin-A content

361. Alpha diversity is present –
 (a) Within community (b) Between community
 (c) Ranges of communities (d) All the above

362. Biodiversity is determined by –
 (a) Number of individuals in an area
 (b) Species richness
 (c) Evenness
 (d) Both (b) and (c)

363. In which state "Periyar National park" is present –
 (a) Karnataka (b) Maharashtra
 (c) Madhya Pradesh (d) Kerala

364. Trishna sanctuary is located in –
 (a) U.P. (b) Tripura
 (c) West Bengal (d) J & K

365. Which Biosphere reserve is known as "Valley of Flower"
 (a) Nilgiri (b) Sunderbans
 (c) Uttarakhand (d) Nokrek

366. Which is preserved in National Park –
 (a) Flora (b) Fauna
 (c) Both (a) and (b) (d) None of these

367. Those species whose populations have been seriously depleted and whose ultimate security is not assured are known as –
 (a) Threatened species (b) Endangered species
 (c) Vulnerable species (d) Rare species

368. Which of the following has become extinct in India –
 (a) Lion (b) Tiger
 (c) Two horned Rhino (d) Dodo

369. Khaziranga wild life sanctuary is famous for –
 (a) Tiger (b) Musk deer
 (c) Elephant (d) Rhino

370. Which is the first national park established in India?
 (a) Bandipur national park (b) Corbett national park
 (c) Kanha national park (d) Periyar national park

371. The region which is greatly affected by air pollution is
 (a) Thermosphere (b) Stratosphere
 (c) Troposphere (d) Mesosphere

372. The substance which is a primary pollutant?
 (a) H_2SO_4 (b) CO
 (c) PAN (d) Aldehydes

373. Which of the following is most abundant hydrocarbon pollutant?
 (a) Butane (b) Ethane (c) Methane (d) Propane

374. Which of the following causes lung cancer?
 (a) Textiles (b) Asbestos
 (c) Silica (d) Paper

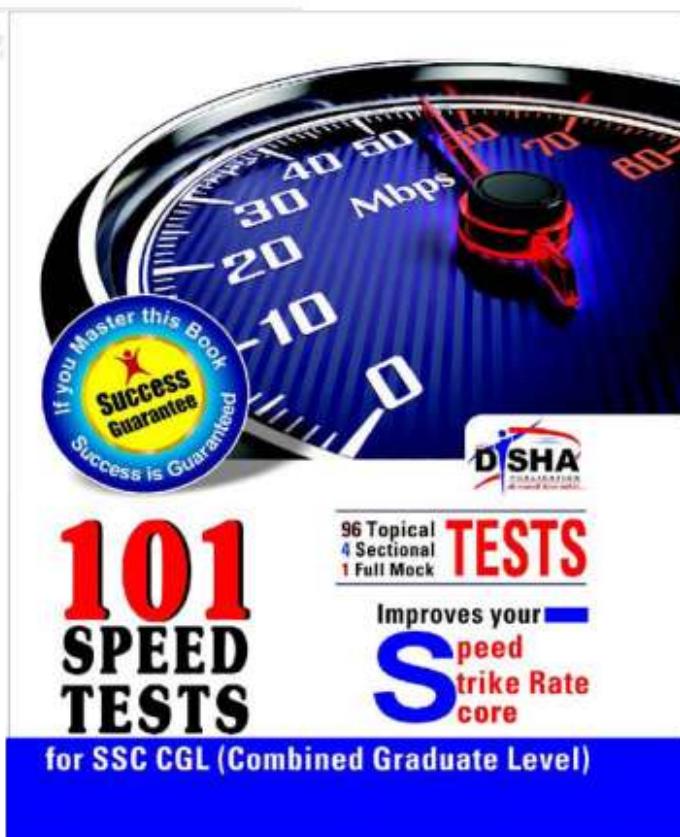
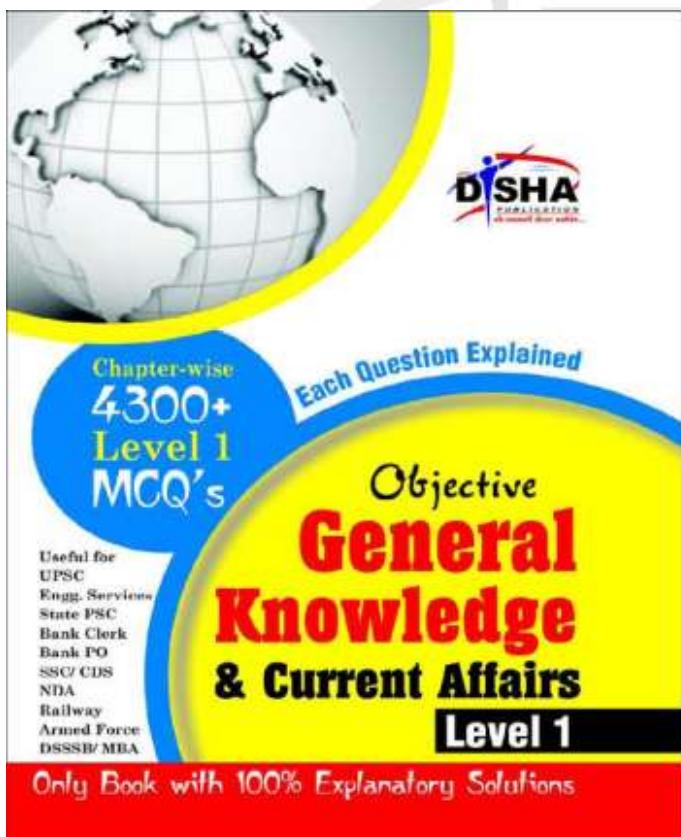
375. Which of the following statement is false?
 (a) London smog is oxidising in nature
 (b) Photochemical smog causes irritation in eyes
 (c) London smog is a mixture of smoke and fog
 (d) Photochemical smog results in the formation of PAN

376. Depletion of ozone layer causes
 (a) Breast cancer (b) Blood cancer
 (c) Lung cancer (d) Skin cancer

377. The gas responsible for ozone depletion :
 (a) NO and freons (b) SO_2
 (c) CO_2 (d) CO

378. Phosphate fertilizers when added to water leads to
 (a) increased growth of decomposers
 (b) reduced algal growth
 (c) increased algal growth
 (d) nutrient enrichment (eutrophication)

379. Pollution in large cities can be checked only by
 (a) shifting of factories out of the residential area
 (b) less use of insecticides
 (c) proper disposal of organic wastes, sewage and industrial effluents
 (d) All of the above
380. What causes death of fish in water bodies polluted by sewage?
 (a) Foul smell
 (b) Pathogens
 (c) Clogging of gills by silt
 (d) Decrease in D.O.
381. Which is the major air pollutant?
 (a) He (b) O₂ (c) CO₂ (d) CO
382. The ozone layer is present in
 (a) Stratosphere (b) Troposphere
 (c) Thermosphere (d) Mesosphere
383. Which is related to 'Green House Effect'?
 (a) Farming of green plants
 (b) Farming of vegetables in houses
 (c) Global warming
 (d) Biodegradable pollutant
384. Biochemical Oxygen Demand, (BOD) is a measure of organic material present in water. BOD value less than 5 ppm indicates a water sample to be _____.
 (a) rich in dissolved oxygen
 (b) poor in dissolved oxygen
 (c) highly polluted
 (d) not suitable for aquatic life
385. Green chemistry means such reactions which
 (a) produce colour during reactions
 (b) reduce the use and production of hazardous chemicals
 (c) are related to the depletion of ozone layer
 (d) study the reactions in plants
386. Identify the wrong statement in the following:
 (a) Chlorofluorocarbons are responsible for ozone layer depletion.
 (b) Greenhouse effect is responsible for global warming.
 (c) Acid rain is mostly because of oxides of nitrogen and sulphur.
 (d) Ozone layer does not permit infrared radiation from the sun to reach the earth.
387. The statement which is not correct about control of particulate pollution
 (a) In electrostatic precipitator, the particulates are made to acquire positive charge which are then attracted by the negative electrode and removed.
 (b) Gravity settling chamber removes larger particles from the air.
 (c) Cyclone collector removes fine particles in the diameter range 5-20 microns.
 (d) Wet scrubbers are used to wash away all types of particulates.
388. Minamata disease is due to pollution of
 (a) Arsenic into the atmosphere
 (b) Organic waste into drinking water
 (c) Oil spill in water
 (d) Industrial waste mercury into fishing water
389. BOD is connected with
 (a) microbes and organic matter
 (b) organic matter
 (c) microbes
 (d) None of the above
390. Which among the following statements is false?
 (a) Oil slick in sea water increases D.O. value.
 (b) The main reason for river water pollution is industrial and domestic sewage discharge.
 (c) Surface water contains a lot of organic matter mineral nutrients and radioactive materials.
 (d) Oil spill in sea water causes heavy damage to fishery.
391. When rain is accompanied by a thunderstorm, the collected rain water will have a pH value
 (a) Slightly lower than that of rain water without thunderstorm
 (b) Slightly higher than that when the thunderstorm is not there
 (c) Uninfluenced by occurrence of thunderstorm
 (d) Which depends upon the amount of dust in air
392. Thermal pollution affects mainly
 (a) vegetation (b) aquatic creature
 (c) rocks (d) air
393. Which of the following is/are the hazardous pollutant(s) present in automobile exhaust gases?
 (i) N₂ (ii) CO
 (iii) CH₄ (iv) Oxides of nitrogen
 (a) (ii) and (iii) (b) (i) and (ii)
 (c) (ii) and (iv) (d) (i) and (iii)
394. Which one of the following statement is not true ?
 (a) pH of drinking water should be between 5.5 – 9.5.
 (b) Concentration of DO below 6 ppm is good for the growth of fish.
 (c) Clean water would have a BOD value of less than 5 ppm.
 (d) Oxides of sulphur, nitrogen and carbon are the most widespread air pollutant.
395. Which one of the following is an ore of silver ?
 (a) Argentite (b) Stibnite
 (c) Haematite (d) Bauxite
396. Cinnabar is an ore of
 (a) Hg (b) Cu (c) Pb (d) Zn
397. Copper can be extracted from
 (a) Kupfernical (b) Dolomite (c) Malachite (d) Galena
398. An example of an oxide ore is
 (a) Bauxite (b) Malachite
 (c) Zinc blende (d) Feldspar
399. Which of the following is an ore of tin ?
 (a) Carborundum (b) Epsomite
 (c) Cassiterite (d) Spodumene
400. Which of the following is chalcopyrite?
 (a) CuFeS₂ (b) FeS₂
 (c) KMgCl₃.6H₂O (d) Al₂O₃.2H₂O
401. Haematite is the ore of :
 (a) Pb (b) Cu (c) Fe (d) Au
402. A metal which is refined by poling is
 (a) sodium (b) blister copper
 (c) zinc (d) silver



ANSWER KEY

1	(a)	46	(a)	91	(a)	136	(c)	181	(a)	226	(a)	271	(b)	316	(b)	361	(a)	406	(a)
2	(a)	47	(b)	92	(c)	137	(a)	182	(d)	227	(c)	272	(c)	317	(b)	362	(d)	407	(c)
3	(a)	48	(a)	93	(a)	138	(b)	183	(b)	228	(b)	273	(a)	318	(d)	363	(d)	408	(b)
4	(c)	49	(a)	94	(d)	139	(a)	184	(d)	229	(c)	274	(b)	319	(a)	364	(b)	409	(c)
5	(b)	50	(b)	95	(b)	140	(b)	185	(a)	230	(a)	275	(d)	320	(b)	365	(a)	410	(d)
6	(c)	51	(b)	96	(a)	141	(a)	186	(d)	231	(d)	276	(b)	321	(d)	366	(c)	411	(d)
7	(b)	52	(a)	97	(c)	142	(c)	187	(b)	232	(c)	277	(c)	322	(a)	367	(b)	412	(c)
8	(a)	53	(a)	98	(b)	143	(d)	188	(b)	233	(a)	278	(d)	323	(b)	368	(c)	413	(c)
9	(c)	54	(a)	99	(c)	144	(c)	189	(c)	234	(b)	279	(a)	324	(d)	369	(d)	414	(d)
10	(b)	55	(a)	100	(b)	145	(b)	190	(c)	235	(b)	280	(b)	325	(d)	370	(b)	415	(c)
11	(b)	56	(a)	101	(c)	146	(d)	191	(a)	236	(a)	281	(c)	326	(d)	371	(c)	416	(b)
12	(c)	57	(b)	102	(b)	147	(b)	192	(a)	237	(c)	282	(c)	327	(a)	372	(b)	417	(a)
13	(a)	58	(a)	103	(b)	148	(c)	193	(d)	238	(a)	283	(b)	328	(b)	373	(c)	418	(c)
14	(b)	59	(a)	104	(b)	149	(c)	194	(c)	239	(a)	284	(c)	329	(a)	374	(a)	419	(b)
15	(c)	60	(a)	105	(a)	150	(c)	195	(b)	240	(c)	285	(c)	330	(c)	375	(a)		
16	(b)	61	(a)	106	(a)	151	(d)	196	(b)	241	(c)	286	(d)	331	(a)	376	(d)		
17	(d)	62	(a)	107	(a)	152	(d)	197	(c)	242	(b)	287	(a)	332	(c)	377	(a)		
18	(a)	63	(d)	108	(b)	153	(c)	198	(d)	243	(c)	288	(a)	333	(b)	378	(d)		
19	(c)	64	(a)	109	(b)	154	(b)	199	(d)	244	(a)	289	(a)	334	(a)	379	(d)		
20	(a)	65	(c)	110	(d)	155	(d)	200	(a)	245	(b)	290	(c)	335	(a)	380	(d)		
21	(c)	66	(d)	111	(a)	156	(c)	201	(a)	246	(b)	291	(a)	336	(a)	381	(d)		
22	(b)	67	(a)	112	(d)	157	(a)	202	(c)	247	(d)	292	(a)	337	(a)	382	(a)		
23	(d)	68	(c)	113	(d)	158	(d)	203	(d)	248	(b)	293	(b)	338	(c)	383	(c)		
24	(b)	69	(a)	114	(d)	159	(b)	204	(a)	249	(b)	294	(c)	339	(a)	384	(a)		
25	(a)	70	(c)	115	(a)	160	(d)	205	(b)	250	(c)	295	(d)	340	(a)	385	(b)		
26	(a)	71	(a)	116	(b)	161	(d)	206	(a)	251	(c)	296	(b)	341	(c)	386	(d)		
27	(a)	72	(a)	117	(d)	162	(a)	207	(c)	252	(b)	297	(c)	342	(d)	387	(a)		
28	(c)	73	(b)	118	(c)	163	(d)	208	(a)	253	(a)	298	(d)	343	(d)	388	(d)		
29	(d)	74	(a)	119	(d)	164	(a)	209	(d)	254	(a)	299	(b)	344	(c)	389	(a)		
30	(d)	75	(a)	120	(c)	165	(c)	210	(a)	255	(d)	300	(c)	345	(a)	390	(a)		
31	(d)	76	(a)	121	(c)	166	(b)	211	(c)	256	(a)	301	(b)	346	(b)	391	(a)		
32	(a)	77	(b)	122	(c)	167	(d)	212	(d)	257	(b)	302	(c)	347	(a)	392	(b)		
33	(c)	78	(a)	123	(b)	168	(c)	213	(a)	258	(a)	303	(d)	348	(c)	393	(c)		
34	(a)	79	(c)	124	(c)	169	(a)	214	(b)	259	(d)	304	(b)	349	(b)	394	(b)		
35	(b)	80	(a)	125	(b)	170	(b)	215	(c)	260	(a)	305	(d)	350	(c)	395	(a)		
36	(a)	81	(b)	126	(d)	171	(d)	216	(b)	261	(b)	306	(d)	351	(c)	396	(a)		
37	(a)	82	(b)	127	(a)	172	(c)	217	(c)	262	(c)	307	(d)	352	(a)	397	(c)		
38	(a)	83	(d)	128	(d)	173	(c)	218	(a)	263	(d)	308	(a)	353	(c)	398	(a)		
39	(a)	84	(a)	129	(b)	174	(a)	219	(b)	264	(c)	309	(d)	354	(a)	399	(c)		
40	(a)	85	(b)	130	(d)	175	(b)	220	(b)	265	(d)	310	(b)	355	(b)	400	(a)		
41	(c)	86	(b)	131	(a)	176	(d)	221	(c)	266	(d)	311	(c)	356	(a)	401	(c)		
42	(c)	87	(c)	132	(b)	177	(b)	222	(a)	267	(d)	312	(b)	357	(d)	402	(b)		
43	(d)	88	(c)	133	(d)	178	(d)	223	(c)	268	(a)	313	(d)	358	(c)	403	(c)		
44	(d)	89	(c)	134	(c)	179	(d)	224	(b)	269	(b)	314	(a)	359	(a)	404	(d)		
45	(a)	90	(c)	135	(d)	180	(d)	225	(d)	270	(d)	315	(b)	360	(d)	405	(c)		



HINTS & EXPLANATIONS



14. (b) Work = Force × Displacement
If force and displacement both are doubled then work would be four times.
15. (c) Kinetic energy = $\frac{1}{2}mv^2 \quad \therefore K.E. \propto v^2$
If velocity is doubled then kinetic energy will become four times.
34. (a) Let initial kinetic energy, $E_1 = E$
Final kinetic energy, $E_2 = E + 300\% \text{ of } E = 4E$
As
- $$p \propto \sqrt{E} \Rightarrow \frac{p_2}{p_1} = \sqrt{\frac{E_2}{E_1}} = \sqrt{\frac{4E}{E}} = 2 \Rightarrow p_2 = 2p_1$$
- $$\Rightarrow p_2 = p_1 + 100\% \text{ of } p_1$$
- i.e. momentum will increase by 100%.
41. (c) Archimedes used the principle of buoyancy to find the purity of gold. According to which a body immersed in fluid experiences a buoyant force equal to the weight of the fluid it displaces. With the help of this principle, the density of the golden crown and solid gold was compared by balancing the crown on a scale with a reference piece, this set up is then immersed in water. If the crown is less dense than gold, it will displace more water, and thereby will experience a greater buoyant force than the reference piece.
42. (c) the kinetic energy of a non-rotating object of mass m traveling at a speed v is . If m and v are increased to twice its magnitude, then $K.E. = \frac{1}{2} \times 2m \times 2v \times 2v = (8) = 8$ times kinetic energy.
43. (d) The gravitational force is inversely proportional to the square of the distance: If you double the distance between the two bodies, the force of gravity is reduced to one-fourth its original value.
44. (d) Stationary wave can occur because the medium is moving in the opposite direction to the wave, or it can arise in a stationary medium as a result of interference between two waves travelling in opposite directions
66. (d) Speed of sound, doesn't depend on pressure and density of medium.
67. (a) In transverse waves medium particles vibrate perpendicular to the direction of propagation of wave.
106. (a) Spectacle lens is convex lens. Hence the defect in vision is of hypermetropia, far sighted.
124. (c) Fleming's right-hand rule (for generators) shows the direction of induced current when a conductor moves in a magnetic field. The right hand is held with the thumb, first finger and second finger mutually perpendicular to each other (at right angles).
125. (b) The watt (symbol: W) is a derived unit of power in the International System of Units (SI), named after the Scottish engineer James Watt (1736-1819).
126. (d) The NIOSH states "Under dry conditions, the resistance offered by the human body may be as high as 100,000 Ohms. Wet or broken skin may drop the body's resistance to 1,000 Ohms," adding that "high-voltage electrical energy quickly breaks down human skin, reducing the human body's resistance to 500 Ohms."
127. (a) The critical temperature for superconductors is the temperature at which the electrical resistivity of a metal drops to zero. The transition is so sudden and complete that it appears to be a transition to a different phase of matter; this superconducting phase is described by the BCS theory.
143. (d) Specific resistance of a wire depends on material and temperature.
155. (d) Ozone layer, also called ozonosphere, region of the upper atmosphere, between roughly 15 and 35 km (9 and 22 miles) above Earth's surface, containing relatively high concentrations of ozone molecules (O_3).
156. (c) In nuclear physics and nuclear chemistry, a nuclear reaction is semantically considered to be the process in which two nuclei, or else a nucleus of an atom and a subatomic particle (such as a proton, neutron, or high energy electron) from outside the atom, collide to produce one or more nuclides that are different from the nuclide(s) that began the process.
157. (a) In the photoelectric effect, electrons are emitted from solids, liquids or gases when they absorb energy from light. Electrons emitted in this manner may be called photoelectrons.
158. (d) a circle
162. (a) Synthetic fibres are also called polymers as they contain macromolecules with large number of repeating units.
165. (c) Maximum number of electrons present in M-shell are 18. The maximum number of electrons that can occupy a specific energy level can be found using the following formula.
Electron Capacity = $2n^2$, the variable n represents the Principal Quantum Number. Shell M has principle quantum number 3.
166. (b) Two oxygen atoms can both achieve stable structures by sharing two pairs of electrons joined in a double bond. $O=O$. Each line represents one pair of shared electrons.
167. (d) Helium is used by deep sea divers in their diving tanks as a substitute of nitrogen. The trouble with nitrogen in this situation is that nitrogen is a fairly heavy gas, and is soluble in blood at high pressure. Long term use of nitrogen can cause a strange sense of euphoria, or well being called nitrogen narcosis. This is a bit like being drunk, and makes the diver unable to assess dangers. Divers who work at depth or for long periods

- use a mixture of 20% Oxygen and 80% Helium. Helium is used for a number of reasons - It is light, cheap, and does not dissolve in blood the same way that nitrogen does. Being inert it cannot be toxic to the diver or corrosive to equipment.
168. (c) The atomic number of uranium is 92, and the mass number of the isotope is given as 238. Therefore, it has 92 protons, 92 electrons, and $238 - 92 = 146$ neutrons.
173. (c) An antacid is a substance which neutralizes stomach acidity.
174. (a) Annealing is the process by which both metal and glass are treated with heat in order to change their properties.
177. (b) Metals form basic oxides. For example oxide of calcium being basic is used to neutralise the acidity of soil.
178. (d) Steel an alloy of iron and carbon is used for manufacturing bridges.
179. (d) Non-metallic oxide could be acidic and neutral also. For example carbon dioxide (CO_2) is acidic in nature whereas carbon monoxide (CO) is neutral in nature.
181. (a) Graphite is the only non-metal, which is a good conductor of heat and electricity.
182. (d) Metals are both malleable and ductile. Metals can be drawn into thin sheets and wires.
184. (d) Phosphorus is a non-metal and non-metals have low melting and boiling points. Although, sodium is a metal, it has low melting and boiling point.
185. (a) Brass is an alloy made of copper and zinc; the proportions of zinc and copper can be varied to create a range of brasses with varying properties.
186. (d) Wrought iron is an iron alloy with a very low carbon content, in comparison to steel, and has fibrous inclusions, known as slag. This is what gives it a "grain" resembling wood, which is visible when it is etched or bent to the point of failure. Wrought iron is tough, malleable, ductile and easily welded.
187. (b) Galvanization, or galvanisation, is the process of applying a protective zinc coating to steel or iron, to prevent rusting. The most common method is hot-dip galvanization, in which parts are submerged in a bath of molten zinc.
188. (b) A homogeneous mixture is a type of mixture in which the composition is uniform and every part of the solution has the same properties. A homogeneous mixture in which there is both a solute and solvent present is also a solution.
191. (a) Devarda's alloy, is an alloy of aluminium (44% - 46%), copper (49% - 51%) and zinc (4% - 6%). Devarda's alloy is used as reducing agent in analytical chemistry for the determination of nitrates after their reduction to ammonia under alkaline conditions. It owes its name to the Italian chemist Arturo Devarda (1859-1944), who synthesized it at the end of the 19th century to develop a new method to analyze nitrate in Chile saltpeter.
192. (a) Cysteine (abbreviated as Cys or C) is an α -amino acid with the chemical formula $\text{HO}_2\text{CCH}(\text{NH}_2)\text{CH}_2\text{SH}$. It is a semi-essential amino acid, which means that it can be biosynthesized in humans. The thiol side chain in cysteine often participates in enzymatic reactions, serving as a nucleophile.
193. (d) Neon is a chemical element with symbol Ne and atomic number 10. It is in group 18 (noble gases) of the periodic table. Neon is a colorless, odorless, inert monatomic gas under standard conditions, with about two-thirds the density of air.
194. (c) by tracheal system
195. (b) annihilate each other
196. (b) Cryolite (Na_3AlF_6 , sodium hexafluoroaluminate) is an uncommon mineral identified with the once large deposit at Ivigtût on the west coast of Greenland, depleted by 1987.
197. (c) Glucose ($\text{C}_6\text{H}_{12}\text{O}_6$, also known as D-glucose, dextrose, or grape sugar) is a simple monosaccharide found in plants. It is one of the three dietary monosaccharides, along with fructose and galactose, that are absorbed directly into the bloodstream during digestion.
198. (d) Zinc metal is non-malleable and brittle in nature.
199. (d) Usually the non-metals are dull in appearance but iodine is an exception which has a luster.
200. (a) Mercury
217. (c) Two pollutants emitted by motor vehicles react to form ground-level ozone or smog which can cause respiratory problems and reduce visibility.
221. (c) Cardiac muscle is an involuntary striated muscle tissue found only in the organ heart. Involuntary muscles are smooth muscles that are not directly controllable at will. For example You don't have to remind yourself to make your heart beat, so it is involuntary. Voluntary muscles are controllable like those found in your arms, legs, hands, etc.
223. (c) Ringworm is common disease, especially among children. It is caused by a fungus, not a worm like the name suggests. It is a common and highly infectious skin infection that causes a ring-like red rash on the skin.
230. (a) Thorium is an element which are used in radioactive chemicals where all other three options are power generating systems which are regenerated.
231. (d) Dekke Toba fish is found in Indonesia. Lake Toba (Indonesian: Danau Toba) is a lake and supervolcano. The lake is 100 kilometres long, 30 kilometres wide, and up to 505 metres (1,666 ft) deep. The fauna includes several species of zooplankton and benthic animals. Since the lake is oligotrophic (nutrient-poor), the native fish fauna is relatively scarce, and the only endemics are Rasbora tobana.
232. (c) Timber means wood that we obtain from plants are called renewable in the sense that after cutting a tree if we plant another tree then it will grow up and again give us wood and timber whereas all other things given are non-renewable, once the stock is finished we cannot get more of it.
233. (a) chegonium, the female reproductive organ in ferns and mosses. An archegonium also occurs in some gymnosperms, e.g., cycads and conifers. A flask-

- shaped structure, it consists of a neck, with one or more layers of cells, and a swollen base—the venter—which contains the egg.
234. (b) Trochodendron is a genus of flowering plants with one living species, *Trochodendron aralioides*, and six extinct species known from the fossil record.
235. (b) Study of ants is called Myrmecology.
236. (a) A Reverse transcriptase (RT) is an enzyme used to generate complementary DNA (cDNA) from an RNA template, a process termed reverse transcription. RT is needed for the replication of retroviruses (e.g., HIV), and RT inhibitors are widely used as antiretroviral drugs.
237. (c) The plant epidermis consists of three main cell types: pavement cells, guard cells and their subsidiary cells that surround the stomata.
238. (a) As sugar concentration increases in the guard cells, as a result water enters the guard cells. The guard cells become turgid (swollen with water). The thin outer walls bulge out and force the inner wall into a crescent shape. In this way a stoma or pore is formed between each pair of guard cell.
239. (a) Revegetation is often used to join up patches of natural habitat that have been lost, and can be a very important tool in places where much of the natural vegetation has been cleared. It is therefore particularly important in urban environments, and research in Brisbane has shown that revegetation projects can significantly improve urban bird populations. The Brisbane study showed that connecting a revegetation patch with existing habitat improved bird species richness, while simply concentrating on making large patches of habitat was the best way to increase bird abundance.
240. (c) A dust storm or sand storm is a meteorological phenomenon common in arid and semi-arid regions. Dust storms arise when a gust front or other strong wind blows loose sand and dirt from a dry surface.
241. (c) Mahyco, an Indian seed company based in Jalna, Maharashtra, has developed the Bt brinjal. The genetically modified brinjal event is termed Event EE 1 and Mahyco have also applied for approval of two brinjal hybrids.
246. (b) A dendritic drainage pattern refers to the pattern formed by the streams, rivers, and lakes in a particular drainage basin. It usually looks like the branching pattern of tree roots and it mainly develops in regions underlain by homogeneous material.
247. (d) A halophyte is a plant that grows in waters of high salinity, coming into contact with saline water through its roots or by salt spray, such as in saline semi-deserts, mangrove swamps, marshes and sloughs, and seashores. An example of a halophyte is the salt marsh grass *Spartina alterniflora* (smooth cordgrass).
248. (b) Azotobacter is a genus of usually motile, oval or spherical bacteria that form thick-walled cysts and may produce large quantities of capsular slime.
249. (b) The aorta is the largest artery in the human body, originating from the left ventricle of the heart and extending down to the abdomen, where it bifurcates into two smaller arteries (the common iliac arteries). The aorta distributes oxygenated blood to all parts of the body through the systemic circulation.
250. (c) Parathyroid hormone (PTH), parathormone or parathyrin, is secreted by the chief cells of the parathyroid glands as a polypeptide containing 84 amino acids. It acts to increase the concentration of calcium (Ca^{2+}) in the blood, whereas calcitonin (a hormone produced by the parafollicular cells (C cells) of the thyroid gland) acts to decrease calcium concentration.
251. (c) Extratropical cyclones, sometimes called mid-latitude cyclones or wave cyclones, are a group of cyclones defined as synoptic scale low pressure weather systems that occur in the middle latitudes of the Earth (outside the tropics) not having tropical characteristics, and are connected with fronts and horizontal gradients in temperature and dew point otherwise known as "baroclinic zones".
252. (b) Any of the homologous segments, lying in a longitudinal series, that compose the body of certain animals, such as earthworms and lobsters. Also called somite.
260. (a) The pancreas is a glandular organ in the upper abdomen, but really it serves as two glands in one: a digestive exocrine gland and a hormone-producing endocrine gland. Functioning as an exocrine gland, the pancreas excretes enzymes to break down the proteins, lipids, carbohydrates, and nucleic acids in food. Functioning as an endocrine gland, the pancreas secretes the hormones insulin and glucagon to control blood sugar levels throughout the day.
261. (b) Due to the action of motor cells at the base of the petiole and leaflets, the leaves of touch me not plant closes. The motor cells are activated by touch of the sensitive hairs present on the surface of touch-me-not plant. Like a number of other plant species, it undergoes changes in leaf orientation termed "sleep" or nyctinastic movement. The foliage closes during darkness and reopens in light.
262. (c) The theoretical basis for plant tissue culture was proposed by Gottlieb Haberlandt, German Academy of science in 1902 on his experiments on the culture of single cell.
263. (d) Beak is technically only the external surface of a bird's mouth. The entire mouth structure of a bird is called the bill. The bill (or rostrum) consists of a bony framework, a vascular layer containing the blood vessels and nerves, a layer of connective tissue, which "glues" the beak to the bones, and the beak, which is the outer sheath covering the jaw bones. The beak is composed of keratin - the same tough, insoluble protein found in fingernails, hoofs, antlers and horns.
264. (c) External ear is present in Mammals. Many mammals can move the pinna (with the auricular muscles) in order to focus their hearing in a certain direction in much the same way that they can turn their eyes. Most humans, unlike most other mammals, do not have this ability.

268. (a) The function of red blood cells is to transport oxygen to the cells of the body.
269. (b) Because the blood plasma is about 90% water.
275. (d) All of these choices are different types of fungi. Mushrooms are classified as basidiomycetes. Yeasts are ascomycetes. Water molds are oomycetes. Fungi come in many different shapes and sizes. They are also found almost anywhere in the world.
276. (b) A flagellum is a tail-like structure used to help single-celled organisms move. The tail is whirled in a circular motion and the cell is able to move in one direction. It's not the most efficient way of moving around, but it gets the job done.
277. (c) We will not find a nucleus in bacteria. Bacteria are prokaryotic organisms. We may even find cell walls, but they are a different structure than those found in plants. Bacteria have cell membranes and cell walls. Their cell walls are not like the cell walls of plants. They are not made of cellulose.
278. (d) All of those organisms are fungi. Truffles are found in the forest.
279. (a) Mushrooms are classified as basidiomycetes because of their shape during development. The two basic parts of a mushroom are the underground hyphae and basidiocarp top.
280. (b) The color of lichen usually comes from the pigments inside of the algae. There is a wide variety of colors for three basic lichen shapes.
281. (c) Lichens have two organisms that have a mutually beneficial relationship. Both organisms survive because of the other. The alga creates food and the fungus offers protection and nutrients.
282. (c) Flesh eating bacteria is a bacterial infection. The other choices were all caused by one type of virus or another.
283. (b) Cell wall of bacteria is made up of peptidoglycan which consists of polysaccharides and amino acids.
284. (c) Under aerobic conditions cyanobacteria fix atmospheric N₂ as Ammonia by special cells called heterocysts.
285. (c) Archaebacteria is a group of primitive prokaryotes, which were the earliest organisms to have appeared on the earth.
286. (d) Plasmids are additional rings of DNA which can replicate independently. Some of them contain genes for fertility and drug resistance.
287. (a) Bacteria shows anoxygenic photosynthesis
- $$\text{CO}_2 + \text{H}_2\text{S} \xrightarrow[\text{energy}]{\text{light}} \text{sugars} + \text{sulphur} + \text{water}$$
288. (a) Azatobacter is free living nitrogen fixing bacteria, capable of picking up free nitrogen and fixing it in some organic compounds like amino acids.
289. (a) Mycoplasma differs from bacteria in not having a cell wall because of which mycoplasma can also change its shape.
290. (c) Yeast has well defined nucleus which bacteria does not have.
291. (a) Yeast being unicellular form short, temporary filamentous structure called Pseudomycelium.
292. (a) The fungal partner of Lichens is called a mycobiont and algal partner is called a phycobiont.
293. (b) Fungi imperfecti is a group which includes those fungi that reproduce exclusively by vegetative and asexual methods. They are also known as deuteromycetes.
294. (c) Edward Jenner is known as father of Immunology.
295. (d) AIDS is caused by Human Immunodeficiency virus (HIV).
296. (b) BCG is vaccine for Tuberculosis and was given by Chalmette Guerin.
297. (c) Polio results in paralysis of limbs in infants.
298. (d) Goitre is caused due to deficiency of Iodine.
299. (b) The host cell invaded by a virus produces an antiviral protein called interferon which prevents the viral multiplication.
300. (c) Diabetes is caused due to increased glucose level in blood when insulin is not produced by pancreas in required amount.
303. (d) Pandemic disease is a disease effective over wide geographic area.
305. (d) Sleeping sickness is caused by Trypanosoma.
313. (d) Autoimmunity is an immune disorder when immune system of a person rejects its own body cells.
328. (b) Sir Alexander Fleming (1851-1955) of Britain discovered the first antibiotic 'penicillin' in 1929. He was awarded Nobel prize for the same in 1945.
334. (a) Tuberculosis is a bacterial disease caused by Mycobacterium tuberculosis.
337. (a) Benzpyrene present in tobacco smoke is carcinogenic. About 95% victims of lung cancer are due to smoking. Bidi smoking cause cancer of tongue, pharynx, larynx, tonsils and oesophagus. Tobacco chewing leads to oral cancer.
338. (c) Cholera is an acute communicable disease which is caused by a parasite, Vibrio Comma. The parasite is communicated through water and exposed food especially cut-fruits.
344. (c) Edward Jenner was the first person to vaccinate people against disease.
350. (c) Melatonin is a hormone produced by Pineal gland
351. (c) Adrenaline hormone causes increase in blood pressure, heart beat.
367. (b) Those species whose populations have been seriously depleted and whose ultimate security is not assured are known as endangered species.
369. (d) *Rhinoceros unicornis* (Rhino) are protected in Kaziranga sanctuary at Sibsagar, is situated in Assam which has started in 1987.
371. (c) Air pollution greatly affect the troposphere.
373. (c) Most abundant hydrocarbon pollutant is methane.
374. (a) Textiles cause lung cancer.
375. (a) London smog is reducing in nature.
376. (d) Depletion of ozone layer causes skin cancer.
378. (d) Addition of phosphate fertilizers to water leads to nutrient enrichment (eutrophication).

381. (d) CO is major air pollutant.
382. (a) Ozone layer is present in stratosphere.
385. (b) Green chemistry may be defined as the programme of developing new chemical products and chemical processes or making improvements in the already existing compounds and processes so as to make less harmful to human health and environment. This means the same as to reduce the use and production of hazardous chemicals.
386. (d) Ozone layer acts as a shield and does not allow ultraviolet radiation from sun to reach earth. It does not prevent infra-red radiation from sun to reach earth, thus option (d) is wrong statement and so it is the correct answer.
387. (a) Particulates acquire negative charge and are attracted by the positive electrode.
388. (d) Minamata is caused by Hg poisoning.
389. (a) BOD is connected with microbes and organic matter.
390. (a) Oil slick in sea water decreases D.O value.
391. (a) Normal rain water has pH 5.6 Thunderstorm results in the formation NO and HNO_3 which lowers the pH.
392. (b) Thermal pollution is caused by power plants. Power plant requires a larger quantity of water for cooling. The water after cooling is left in the water body. The temperature of left water is generally very high and affects aquatic life.
393. (c) CO and oxides of Nitrogen are poisons gases present in automobile exhaust gases.
394. (b) The ideal value of D.O. for growth of fishes is 8 mg/l . 7 mg/l is desirable range, below this value fishes get susceptible to disease. A value of 2 mg/l or below is lethal for fishes.
395. (a) Argentite or silver glance (Ag_2S) is an ore of Ag.
396. (a) Cinnabar (HgS) is an ore of Hg.
397. (c) Malachite is $\text{CuCO}_3 \cdot \text{Cu}(\text{OH})_2$ it is ore of copper.
398. (a) Bauxite ore of aluminium is $\text{Al}_2\text{O}_3 \cdot 2\text{H}_2\text{O}$.
399. (c) Carborundum - SiC
Epsomite or Epsom salt - $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$
Cassiterite - SnO_2
Spodumene - Ore of lithium
400. (a) Chalcopyrite : CuFeS_2
Fool's gold : FeS_2
Carnalite : $\text{KMgCl}_3 \cdot 6\text{H}_2\text{O}$
Bauxite : $\text{Al}_2\text{O}_3 \cdot 2\text{H}_2\text{O}$
401. (c) Haematite is Fe_2O_3 . Thus it is the ore of iron (Fe).
402. (b) Polling is used for purification of metal which contain their own oxide as impurity e.g., Cu_2O in Cu, SnO_2 in Sn etc.
403. (c) All the other three polymers are obtained by addition polymerisation.
404. (d) Glyptal is an example of a step growth polymer.
406. (a) P.V.C. (Polyvinyl chloride) is formed by polymerisation of vinyl chloride, $\text{CH}_2 = \text{CHCl}$, whose IUPAC name is 1-chloroethene.
407. (c) Natural rubber is *cis*-1, 4 poly isoprene and has only *cis* configuration about the double bond as shown below.
- $$\begin{array}{ccccc}
 & \text{CH}_3 & & \text{CH}_2 & \\
 & \diagdown & & \diagup & \\
 & \text{C} = \text{C} & & \text{C} & \\
 & \diagup & & \diagdown & \\
 \dots \text{CH}_2 & & \text{CH}_2 & & \text{CH}_3 \\
 & \diagup & & \diagdown & \\
 & \text{CH}_2 & & \text{H}_3\text{C} & \\
 & \diagdown & & \diagup & \\
 & \text{H} & & \text{CH}_2 & \\
 & \diagup & & \diagdown & \\
 & \text{C} = \text{C} & & \text{C} = \text{C} & \\
 & \diagup & & \diagdown & \\
 & \text{H} & & \text{H} & \\
 & \diagup & & \diagdown & \\
 & \text{CH}_2 & & \text{CH}_2 & \dots
 \end{array}$$
408. (b) Nylon is a condensation polymer
409. (c) Bakelite is a thermosetting polymer. On heating it is infusible and cannot be remoulded.
411. (d) Obtained from *streptomyces venezuelae* (fungi). It is very effective in typhoid fever.
412. (c) Structural features of soaps and detergents are almost same except that the polar end in detergents is $-\text{OSO}_3^-\text{Na}^+$ while in soaps polar end is $-\text{COO}^-\text{Na}^+$. Detergents have an advantage over soaps that its polar end sulphate and sulphonate retain their efficiency in hard water, since the corresponding Ca and Mg salts are soluble. Being salts of strong acids, they yield neutral solution, in contrast, to the soaps, which being salts of weak acids yield slightly alkaline solutions.
415. (c) Tranquillizers reduce anxiety and tension they are also called psychotropic drugs. These are two type
(i) Sedative the drugs used for violent and mentally agitated patient e.g., Equanil and diazepam.
(ii) Antidepressant- The drug are used to patients who are highly depressed and lose self confidence e.g. tofranil, vitalin, amphetamine etc.
417. (a) A. Fleming discovered penicillin in 1929.
418. (c) Any oils which are good for eating or cooking, can be used in making soap. One of the best is said to be Coconut oil. Groundnut, Shea butter, Cocoa butter, Sun flower and many other vegetable oils are also used.
419. (b) Soaps are actually salts of higher fatty acids.

Example: $\text{C}_{17}\text{H}_{35}\text{COONa}$
(sodium stearate)

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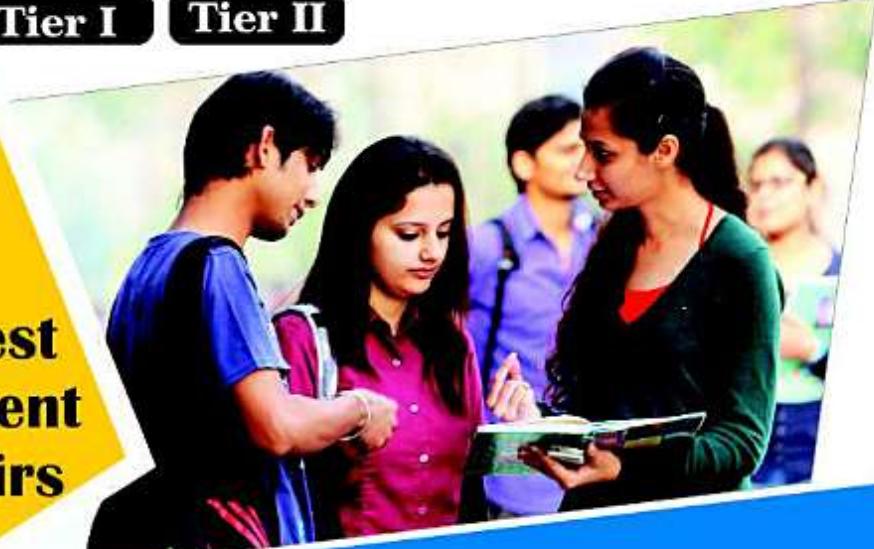
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Date :/...../.....

1. ASEAN (Association of Southeast Asian Nations) is a regional cooperative organization in the Southeast Asia.

The aims and purposes of ASEAN are:

1. To accelerate the economic growth, social progress and cultural development in the region through joint endeavours in the spirit of equality and partnership in order to strengthen the foundation for a prosperous and peaceful community of Southeast Asian Nations.
2. To promote regional peace and stability through abiding respect for justice and the rule of law in the relationship among countries of the region and adherence to the principles of the United Nations Charter.
3. To promote active collaboration and mutual assistance on matters of common interest in the economic, social, cultural, technical, scientific and administrative fields.

Select the answer from the codes given below:

- | | |
|-------------|-----------------|
| (a) 1 and 2 | (b) 2 and 3 |
| (c) 1 and 3 | (d) 1, 2, and 3 |

2. Consider the following statements:

1. UNICEF became a permanent part of the United Nations system on 11 December 1946.
2. UNICEF is the driving force that helps build a world where the rights of every child are realized.
3. UNICEF was created with this purpose in mind – to work with others to overcome the obstacles that poverty, violence, disease and discrimination place in a child's path.

Which of the above statements is/are correct?

- | | |
|-------------|----------------|
| (a) 1 and 2 | (b) 2 and 3 |
| (c) 1 and 3 | (d) 1, 2 and 3 |

3. As a member of the World Bank Group, International Finance Corporation (IFC) has overarching goal(s):

1. End extreme poverty by 2030
2. Boost shared prosperity in every developing country

Which of the above statements is/are correct?

- | | |
|------------------|------------|
| (a) 1 only | (b) 2 only |
| (c) 1 and 2 both | (d) None |

4. Which of the following statements are correct with regard to the South Asian Free Trade Area (SAFTA)?

1. The SAFTA agreement was signed on 6 January 2005 during Twelfth SAARC Summit held in Bangladesh.
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Choose the correct option:

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D. Labour Party	4. Spain

Choose from the codes given below:

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19. The name of the Ebola Virus, which has been declared as epidemic by U.N. has been derived from the name of Ebola river. This river Ebola is located in :
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Regional/International	Headquarter
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- A. BRICS Development Bank 1. London

- B. World Intellectual Property Organisation 2. Vienna

- C. OPEC 3. Brussels

- D. Amnesty International 4. Shanghai

- E. NATO 5. Geneva

A	B	C	D	E
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- (a) 4 5 2 1 3

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22. Which among the following Ministries of India publishes the Employment News ?

- (a) Ministry of Labour and Employment
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1. It is named after former Philippine President Ramon Magsaysay.

2. The prize is given to Asian individuals achieving excellence in their respective fields.

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| D. Asian Drama | 4. Louis Fisher |

A B C D

- (a) 1 2 3 4
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- (c) 4 1 2 3
- (d) 3 1 4 2

HINTS & EXPLANATIONS

1. (d) ASEAN also aims to provide assistance to each other in the form of training and research facilities in the educational, professional, technical and administrative spheres; and to collaborate more effectively for the greater utilisation of their agriculture and industries, the expansion of their trade, including the study of the problems of international commodity trade, the improvement of their transportation and communication facilities and the raising of the living standards of their peoples.
2. (b) UNICEF was established on 11 December 1946. It became a permanent part of the United Nations system in 1953.
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82 Topical TESTS

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Max. Marks : 50

No. of Qs. 25

Time : 20 min.

Date :/...../.....

1. ASEAN (Association of Southeast Asian Nations) is a regional cooperative organization in the Southeast Asia.

The aims and purposes of ASEAN are:

1. To accelerate the economic growth, social progress and cultural development in the region through joint endeavours in the spirit of equality and partnership in order to strengthen the foundation for a prosperous and peaceful community of Southeast Asian Nations.
2. To promote regional peace and stability through abiding respect for justice and the rule of law in the relationship among countries of the region and adherence to the principles of the United Nations Charter.
3. To promote active collaboration and mutual assistance on matters of common interest in the economic, social, cultural, technical, scientific and administrative fields.

Select the answer from the codes given below:

- | | |
|-------------|-----------------|
| (a) 1 and 2 | (b) 2 and 3 |
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2. Consider the following statements:

1. UNICEF became a permanent part of the United Nations system on 11 December 1946.
2. UNICEF is the driving force that helps build a world where the rights of every child are realized.
3. UNICEF was created with this purpose in mind – to work with others to overcome the obstacles that poverty, violence, disease and discrimination place in a child's path.

Which of the above statements is/are correct?

- | | |
|-------------|----------------|
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3. As a member of the World Bank Group, International Finance Corporation (IFC) has overarching goal(s):

1. End extreme poverty by 2030
2. Boost shared prosperity in every developing country

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- | | |
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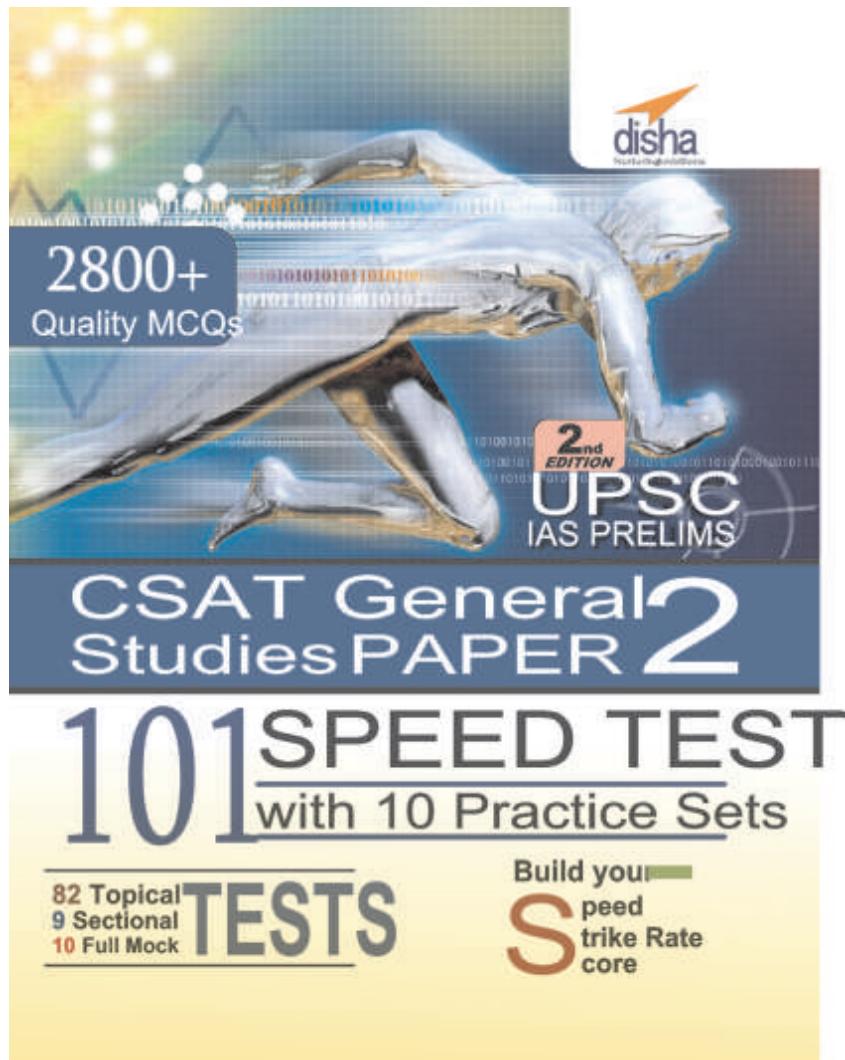
MOVIE & NOVEL

EMEMPLOYMENT NEWS



GENERAL COMPREHENSION SECTION TEST WITH SOLUTIONS

This section test is taken from :



ISBN : 9789385846663

Max. Marks : 24

No. of Qs. : 24

Time : 25 min.

Date :/...../.....

1. Wendy, a student, is an avid backgammon player. All students play either chess or checkers, but some checkers players do not play chess because they do not understand chess strategy. Backgammon players never play checkers, because they do not find checkers challenging. Therefore, Wendy must understand chess strategy.

Which of the following must be true for the conclusion drawn above to be logically correct?

- (a) All chess players understand chess strategy.
- (b) Backgammon is more challenging than checkers.
- (c) Chess is more challenging than backgammon.
- (d) All students who find backgammon challenging play checkers.

2. Most citizens are very conscientious about observing a law when they can see the reason behind it. For instance, there has been very little need to actively enforce the recently-implemented law that increased the penalty for motorists caught leaving a gas station without paying for gas they had pumped into their vehicles. This is because citizens are very conscientious of the high cost of gasoline and they know that stealing gas will only further increase the price of gasoline for everyone.

Which of the following statements would the author of this passage be most likely to believe?

- (a) The increased penalty alone is a significant motivation for most citizens to obey the law.
- (b) There are still too many inconsiderate citizens in the local community.
- (c) High gasoline prices can be brought down if everyone does his or her part and pays for the gasoline they use at the pumps.
- (d) Society should make an effort to teach citizens the reasons for its laws.

3. Efficiency is all right in its place, in the shop, the factory, the store. The trouble with efficiency is that it wants to rule our play as well as our work; it won't be content to reign in the shop, it follows us home.

It can be inferred from the above passage that

- (a) Efficiency can become all - pervading
- (b) Efficiency does not always pay
- (c) Efficiency can be more of a torture than a blessing
- (d) None of these

4. Developed countries have made adequate provisions for social security for senior citizens. State insurers (as well as private ones) offer medicare and pension benefits to people who can no longer earn. In India, with the collapse of the joint family system, the traditional shelter of the elderly has disappeared. And a state faced with a financial crunch is not in a position to provide financial security. So, it is advisable that the working population give serious thought to building a financial base for itself.

Which one of the following, if it were to happen, weakens the conclusion drawn in the above passage the most

- (a) The insurance sector is under developed and trends

indicate that it will be extensively privatized in the future.

- (b) The insurance sector is under developed and trends indicate that it will be extensively privatized in the future.
 - (c) India is on a path of development that will take it to a developed country status, with all its positive and negative implications.
 - (d) If the working population builds a stronger financial base, there will be a revival of the joint family system.
5. Cigarettes constitute a mere 20% of tobacco consumption in India. And fewer than 15% of the 200 million tobacco users consume cigarettes. Yet these 15% contribute nearly 90% of the tax revenues to the Exchequer from the tobacco sector. The punitive cigarette taxation regime has kept the tax base narrow, and reducing taxes will expand this base.
- Which one of the following best bolsters the conclusion that reducing duties will expand the tax base?
- (a) The cigarette manufacturers' association has decided to indulge in aggressive promotion.
 - (b) There is a likelihood that tobacco consumers will shift to cigarette smoking if cigarette prices were to reduce.
 - (c) The cigarette manufacturers are lobbying for reduction on duties.
 - (d) An increase in duties on non-cigarette tobacco may lead to a shift in favour of cigarette smoking.

DIRECTIONS (Q. 6-24) : These questions are based on the passages below.

PASSAGE - 1

It has not been human nature to remain solely restricted to that area which is essential to its existence. We are in some degree bound by the chains of necessity and to some degree independent. Our bodies are contained within three and a half cubits, but even though that is true, it would never work to construct a house whose outer limits would comprise those same three and a half cubits. It is necessary to have a great deal of space to move freely, otherwise our health and pleasure are affected.

All civilisations are living wealths that have grown on the deep soil of a rich leisure. They are for conferring honour to our personality and giving it its best worth. The perfection of our personality does not principally consist of qualities that generate cleverness or deftness or even accuracy of observation, or the rationality of analysis and generalisation. It depends mostly on our training in truth and love, upon ideals that go to the root of our being. And these require the ministration of quiet time for their adequate recognition and realisation in life. A true gentleman is the product of patient centuries of cultivated leisure that has nourished into preciousness a vision of honour whose value is higher than that of life itself. For genuine courtesy is a creation like pictures, like music. It is a harmonious blending of voice, gesture and movement, word and action in which generosity of conduct is expressed. It reveals that man himself and has no ulterior purpose.

Invention, construction and organisation are spreading fast along the high road of our history, but the creative genius of man which acknowledged its mission to express all that has permanent value in personality is everyday loosing its dignity. It accepts cheap payment from the multitude, it is always engaged in keeping irreverent minds amused. It makes faces at things men held sacred and tries to prove that the ideals of social life that had given us grace, the majesty of self mastery and the heroism of voluntary acceptance of suffering were for the most part unreal, false coins made real the weak for the pathetic purpose of self deception. Compressed and crowded time has its use when dealing with material things but living truth must have for their full significance a perspective of wide leisure. The cramped life produces deformities and degeneracy, and the mind constantly pursued by the fury of haste, develops a chronic condition of spiritual dyspepsia.

I do not put my faith in any new institution, but in the individuals all over the world who think clearly, feel nobly and act rightly, thus becoming the channels of moral truth. Our moral ideals do not work with chisels and hammers. Like trees they spread their roots in the soil and branches in the sky, without consulting any architect for their plans.

6. The purpose of the author in the above passage is to:
 - (a) Engage in a criticism of civilisation
 - (b) Argue in favour of a laid back life
 - (c) To enquire into the meaning of necessity and excess
 - (d) To argue in favour of a spartan life
7. Dyspepsia, as used in the passage, refers to:
 - (a) A violent mental condition
 - (b) Indigestion
 - (c) Insanity
 - (d) An inability to think deeply
8. Which of the following statements do not follow from the above passage?
 - (a) The author does not like the implications of living in a mass-consumerist society.
 - (b) People living in large houses with ample excess space would not suffer from spiritual disorder
 - (c) The motivation for the cultivation of ideals cannot be understood within a functionalist framework.
 - (d) Loss of dignity of heroism can lead to a celebration of the mundane.
9. Which of the following observation is consistent with the argument in the above passage?
 - (a) A creative organisation has to maintain a high pressure work environment.
 - (b) An organisation just needs to design the right systems to make employees creative.
 - (c) Innovation depends to a large extent on the ‘belief system’ of the key personnel in an organisation.
 - (d) Capital market pressures can effectively force a firm to be creative
10. Which of the following statement do not reflect the spirit of the usage of the idea of ‘leisure’ by the author?
 - (a) Leisure is an escape from the necessities of

presenthood

- (b) Leisure is an enjoyment of excess and leads to corruption of the mind.
- (c) It is in leisure that thoughts and ideas that have taken civilisation forward were formed.
- (d) A society that does not create space for leisure is unlikely to unleash significant creative energies.
11. The author observes that there is a growing loss in dignity of ideals, which leads to several consequences. The outcome that most worries the poet is:
 - (a) Loss of leisure
 - (b) People getting tied to necessities of the present.
 - (c) The argument that voluntary acceptance of suffering were for the most part unreal, false coins made real by the weak for the pathetic purpose of self deception.
 - (d) Undermining of creative pursuits

PASSAGE - 2

For achieving inclusive growth there is a critical need to rethink the role of the State. The early debate among economists about the size of the Government can be misleading. The need of the hour is to have an enabling Government. India is too large and complex a nation for the State to be able to deliver all that is needed. Asking the Government to produce all the essential goods, create all the necessary jobs, and keep a curb on the prices of all goods is to lead to a large cumbersome bureaucracy and widespread corruption.

The aim must be to stay with the objective of inclusive growth that was laid down by the founding fathers of the nation and also to take a more modern view of what the State can realistically deliver.

This is what leads to the idea of an enabling State, that is, a Government that does not try to directly deliver to the citizens everything that they need. Instead, it (1) creates an enabling ethos for the market so that individual enterprise can flourish and citizens can, for the most part, provide for the needs of one another, and (2) steps in to help those who do not manage to do well for themselves, for there will always be individuals, no matter what the system, who need support and help. Hence we need a Government that, when it comes to the market, sets effective, incentive-compatible rules and remains on the sidelines with minimal interference, and at the same time, plays an important role in directly helping the poor by ensuring that they get basic education and health services and receive adequate nutrition and food.

12. According to the passage :
 1. The objective of inclusive growth was laid down by the founding fathers of the nation.
 2. Need of the hour is to have an enabling Government.
 3. The Government should engage in maximum interference in market processes.
 4. There is a need to change the size of the Government.
- Which of the statements given above are correct ?
 - (a) 1 and 2
 - (b) 2 and 3
 - (c) 1 and 4
 - (d) 1, 2, 3 and 4

13. According to the passage, the strategy of inclusive growth can be effected by focusing on

 - Meeting all the needs of every citizen in the country.
 - Increasing the regulations over the manufacturing sector.
 - Controlling the distribution of manufactured goods.
 - Delivery of the basic services to the deprived sections of the society.

14. What constitutes an enabling Government?

 - A large bureaucracy.
 - Implementation of welfare programmes through representatives.
 - Creating an ethos that helps individual enterprise.
 - Providing resources to those who are underprivileged.
 - Offering direct help to the poor regarding basic services.

Select the correct answer from the codes given below :

15. Why is the State unable to deliver “all that is needed”?

 1. It does not have sufficient bureaucracy.
 2. It does not promote inclusive growth.

Select the correct answer from the codes given below :

16. What is the essential message being conveyed by the author of the passage?

 - (a) The objectives of inclusive growth laid down by the founding fathers of the nation should be remembered.
 - (b) The Government needs to make available more schools and health services.
 - (c) The Government needs to establish markets and industries to meet the needs of the poor strata of the society.
 - (d) There is a need to rethink the role of the State in achieving inclusive growth.

PASSAGE - 3

The stubborn persistence of child malnutrition in India is one of the tragedies of our time. Many of us have long agonised over this preventable problem, and we continue to ask: why do half of our children not get enough or the right food or adequate care? Even in sub-Saharan Africa, only 30 per cent of the children are malnourished, versus 50 per cent in South Asia. And this gap exists despite our much higher levels of per capita income, education and even safer water access. One-third of the babies in India are born with low birth weight compared to one-sixth in sub-Saharan Africa. This is heartbreakingly given the dramatic improvements in our agriculture, advances in literacy, and great strides in economic growth. For more than 20 years India has even sustained the greatest effort in history to improve nutritional standards, according to UNICEF, through its Integrated Child Development Services (ICDS) Programme. So it is not for lack of effort. Nor is it due to poverty, which has been steadily declining

by one per cent a year for two decades. What accounts for this puzzle? In 1996, India's famous physician nutritionist wrote a ground-breaking article on this called 'The Asian Enigma'. After considering different factors, including access to food and income and our vegetarianism, he concluded that the lower status of women might be the reason. The link between women's status and child nutrition seems plausible. In many Indian homes, men eat first; women have to make do with leftovers. This is perhaps why 83 per cent of women in India suffer from iron deficiency-anaemia versus 40 per cent in sub-Saharan Africa. An malnourished mother will give birth to a baby with low birth weight. Moreover, domestic work often forces a mother to delegate the chore of feeding solid food to her baby to older siblings. If women had more control over family income and decisions, they would devote them to better pre and post-natal care and to their children.

So far this was the theory. But now a study by the International Food Policy Research Institute and Emory University seems to confirm this hypothesis. It brought together data from 36 developing countries, spanning over one hundred thousand children under the age of three and an equal number of women. It measured a woman's position in the home—whether she works for cash, her age at marriage, and the difference in age and education between spouses. The study concludes that the lowly position of women in the family is the single most important reason for the gap in children's nutrition between South Asia and sub-Saharan Africa, followed by sanitation (lack of latrines) and urbanisation (slum living).

I wonder why the position of women in India is worse than that of women in other societies. The report seemed to suggest that South Asian women were not so far behind African women as their inferior status too limited their ability to nurture children. I also wonder whether children's well being is only a woman's issue or a family concern where men play a crucial role. I suspect there are no easy answers. Women everywhere suffer from lower status, but in India it appears to have devastating consequences. The policy implications are clear: if we want to reduce child malnutrition, we must combine our child programmes with efforts to improve the situation of women. To succeed, we need healthy children who'll become tomorrow's innovative adults. If we ignore gender inequality, we will continue to produce stunted children, wasted lives, and untold misery.

- post-natal care.
- (c) men should play more involved role in children's well being.
- (d) India has not put sustained efforts to improve nutritional standards.
20. Which of the following is the major reason for a large number of women in India suffering from iron deficiency?
- (a) Women are not getting sufficient food
- (b) More women eating only vegetarian food
- (c) Women not eating balanced food
- (d) Lack of proper medical check-up
21. In which of the following areas is South Asia's performance better than that of sub-Saharan Africa?
- (a) Safer drinking water
- (b) Lower infant mortality rate
- (c) Higher status of women
- (d) Higher birth weight of children
22. According to the author, the crux is
- (a) women have lower status everywhere as compared to men.
- (b) improvement of sanitation and slum conditions.
- (c) that in India, the per capita income and education level of women is very low.
- (d) low status of women has a horrifying result on child malnutrition.
23. Which of the following was one of the measures of women's position in the home?
- (a) Number of children
- (b) Difference in husband's and wife's income.
- (c) Weights of child at birth
- (d) Age of marriage
24. What according to the passage is heartbreaking?
- (a) India's performance lower than Africa
- (b) Failure of ICDS programme
- (c) Sub-Saharan Africa's every one-sixth child being born with low weight
- (d) The puzzle of poverty declining only by one per cent a year

HINTS & Solutions

1. (a) The argument's premises boil down to the following:
 1. Wendy is a student who plays backgammon.
 2. All students play either chess or checkers, but no backgammon player plays checkers.
 Based on these premises we can conclude that Wendy plays chess. In order to also conclude that Wendy understands chess strategy, we must assume that all chess players understand chess strategy:
 Premise: X is an A.
 Assumption: All A's are B's.
 Conclusion: X is a B.
 Statement (a) provides the assumption needed to draw the conclusion.
2. (d) Choice (d) is correct because it neatly summarizes the main theme of the passage. We can instantly eliminate answer choice (a) because the passage never states how the increased penalty affects citizens. Choice (b) is too extreme, and overly negative. Besides, the overall theme of the passage is positive; the negative tone of choice (b) is out of keeping with it. Answer choice (c) is incorrect because the author stated only that adherence to the law would prevent the price of gasoline from rising further. He never said that this action would lower gas prices.
3. (a) is the correct choice as the passage says that "efficiency is present everywhere, this makes it all pervading". The passage does not suggest that efficiency does not pay or can be more of a torture.
4. (d) comes across the right choice, as according to the passage, the working population needs a stronger financial base, since the joint family system is collapsing and thus the elderly are not being given the traditional shelter and the state can't provided it as it faces a financial crunch. Thus (d) is contrary to the conclusion drawn from the passage.
5. (a) The tax base is narrow.
 the taxes are high, only those smoking expensive cigarettes pay taxes. It however taxes are reduced and cigarettes are cheaper more tobacco consumers will shift to cigarettes thus increasing the tax base.
6. (b) The purpose of the author in the above passage is to 'argue in favour of a laid back life'. The clue regarding this lies in the following lines "the perfection of ourrealisation in life."
7. (d) Dyspepsia, as used in the passage refers to ' an inability to think deeply' the reason being there is shortage of time in the present scenario and our mind is constantly pursued by the fury of haste.
8. (d) Nowhere there is any implication that loss of ideals can result in enjoyment of worldly pleasures.
9. (b) 'An organization just needs to design the right system to make employees creative' this is the observation which is consistent with the argument in the above passage.
10. (b) The following statement does not reflect the spirit of the usage of the idea of 'leisure' by the author – leisure is an enjoyment of excess and leads to corruption of the mind. Reason being the author talks about leisure as 'space to move freely, otherwise our health and pleasure is affected'.
11. (b) The author observes that there is a growing loss in dignity of ideals, which leads to several consequences. The outcome that most worries the poet is: people thinking of the present only. The clue regarding this lies in the following lines of the passage "invention, construction and organization are spreading fast along the high road of our history, but the creative genius of man which acknowledged its mission to express all that has permanent value in personality is everyday loosing its dignity".
12. (a) Statement 3 is eliminated as the government should side line with minimal interference. Statement 4 is eliminated as change in size of government.
13. (d) Strategy of inclusive growth can be effected by focusing on delivery of the basic services to the deprived section of the society. It is clearly stated in the passage "The aim must be state can realistically deliver."
14. (b) According to given passage only 4 and 5 are that constitutes.
15. (b) State does not promote inclusive growth as stated in 2nd para " the aim ... realistically deliver."
16. (d) Options (a), (b) and (c) cannot be the message. The only sentence that talks of a message is option (d) which is the main idea of the passage.
17. (d)
18. (c)
19. (c)
20. (a)
21. (a)
22. (d)
23. (d)
24. (a)



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HINTS & EXPLANATIONS

1. (c) 1 light year = speed of light in vacuum × no. of seconds in one year
 $= (3 \times 10^8) \text{ m/s} \times (365 \times 24 \times 60 \times 60) \text{ s}$
 $= 9.467 \times 10^{15} \text{ m}$
2. (d)
3. (b) By increasing pressure above mercury column, the boiling point can be increased.
4. (c) $\gamma_v - \gamma_p = \frac{1}{273}/K$

$\frac{kT}{2}$ is same for all ideal gases at same temperature. The mean free path, $\lambda = \frac{kT}{\sqrt{2\pi d^2 P}}$; so it increases with decrease in pressure.

5. (b)
6. (a)
7. (c) $r = \frac{\sqrt{2mK}}{qB}$ i.e. $r \propto \frac{\sqrt{m}}{q}$

Here kinetic energy K and B are same.

$$\therefore \frac{r_p}{r_n} = \frac{\sqrt{m_p}}{\sqrt{m_n}} \cdot \frac{q_n}{q_p}$$

$$= \frac{\sqrt{m_p}}{\sqrt{4m_p}} \cdot \frac{2q_p}{q_p} = 1$$

8. (d) Conventionally Wires with red insulations are conventionally used as live wires, whereas the wires with black insulations are used as neutral (or negative) wires and the wires with green insulations or steel wires are used as earth wires. However it is not a rule.
9. (c)
10. (d) Radio waves are a form of electromagnetic radiation, created whenever a charged object (in normal radio transmission, an electron) accelerates with a frequency that lies in the radio

frequency (RF) portion of the electromagnetic spectrum. Thus statement 3 is correct. The Doppler's Effect shows a change in a wave's frequency received when it is either reflected from a moving object or generated on a moving object. Police radar speed detectors bounce a radio frequency wave off cars and use their internal electronics to determine the speed at which the object is moving by that frequency change. Therefore, statement 4 is also correct.

11. (b) Cotton is the process of collecting information from different sources and arranging in correct order
12. (b) The geostationary satellite is a satellite having a time-period of 24 hours. Using this time-period, the height of the satellite comes out to be approximately 35,800 km. FM broadcasting is a broadcast technology pioneered by Edwin Howard Armstrong that uses frequency modulation (FM) to provide high-fidelity sound over broadcast radio. FM transmission is quite immune to noise as compared to AM transmission. Noise is a form of amplitude variations in the transmitted signal due to atmosphere, industries, etc.
13. (d)
14. (c) Noble gases are placed extremely right in periodic table. Sodium is more metallic than magnesium as it is more electropositive and has low ionisation energy.
15. (b) Scattering of light (Tyndall effect) is exhibited by a colloidal solution. Among the given solutions starch solution is a colloid whereas others are examples of true solution.
16. (b) Boyle's law

$$P \propto \frac{1}{V}$$

$$P = \frac{K}{V}$$

$$PV = K$$
17. (c)
18. (d) Division of centromeres takes place during anaphase II of meiosis.
19. (d)
20. (c)

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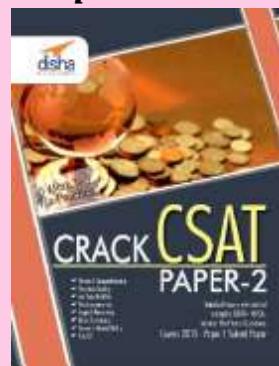
"Comprehension questions judge your ability to understand the passage, analyse the problem in a proper perspective as well as your ability to answer quickly, correctly and systematically". Comprehension measures your ability to read and understand the written passage.

Answer the questions based on reading the passage, it is important that they should be based on the information given in the passage. Your common sense, knowledge and presumption should not be taken into account while answering the questions. If you have some information from your own experience and knowledge, you should not use it to answer the question. Even if you think that there is some mistake, you must still answer the question on the basis of the information given in the passage. There are certain techniques that will help you in answering the questions based on the given passages.

Important Techniques

- (a) **Use your pencil :** To begin with, use your pencil as a pointer. Using the pencil to guide your eye along a line of text helps you to focus on the details in the reading; it holds your attention to the precise words in the passage. In a long test, attention may weaken. Fatigue may blunt your attention to details. But using your pencil as a pointer will help you to preserve your attention to details.
- (b) **Increase in reading speed :** Another benefit of using the pencil as a pointer is that it will probably speed up your reading. The steady flow of the pencil across the page with each line of text draws the eye along at a steady pace. Do not go faster than you can grasp the text, but do try to keep your reading going at a steady pace set by the pencil.
- (c) **Circle key words and phrases :** Remember, you are not reading for just a vague general understanding of the passage. You usually have to read for detailed understanding. There will be individual words which are important for grasping a point exactly. Circle key words or phrases which will enable you to zero in on precise points needed to answer a question.
- (d) **Keep forging ahead :** Do not get bogged down if there is a word or sentence you do not understand. You may get the main idea without knowing the individual word or sentence. Sometimes you can sense the meaning of the word from the context. Sometimes the word or sentence may not be the basis of any question. If there is some idea you need to answer a question but do not understand, read it one more time. If you still do not understand it, move on.

This Chapter is taken from :



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You can come back to this question later if you have more time at the end of the test.

- (e) **Formation of an idea:** Another good reading comprehension strategy is to read the questions before starting the passage. This does not mean to read the answer choices at this time. By reading the questions, you will have an idea of what information you will need after reading the passage. This may alert you to certain details, ideas and specific areas in the paragraph where the questions are drawn from.

Right Approach to Answer the Questions

1. Questions are to be answered on the basis of the information provided in the passage and you are not expected to rely on outside knowledge of a particular topic. Your own views or opinions may sometimes conflict with the views expressed or the information provided in the passage. Be sure that you work within the context of the passage. You should not expect to agree with everything you encounter in reading passages.
2. You should analyse each passage carefully before answering the accompanying questions. As with any kind of close and thoughtful reading, look for clues that will help you understand less explicit aspects of the passage. Try to separate main ideas from supporting ideas or evidences.
3. Note transitions from one idea to the next, and examine the relationships among the different ideas or parts of the passage. For example, are they contrasting? Are they complementary? Consider the points the author made, the conclusions drawn, and how and why those points are made or conclusions are drawn.
4. Read each question carefully and be certain that you understand exactly what is being asked.
5. Always read all the answer choices before selecting the best answer.
6. The best answer is the one that most accurately and most completely answers the questions being posed. Be careful not to pick an answer choice simply because it is a true statement. Be careful also not to be misled by answer choices that are only partially true or only partially satisfy the problem posed in the question.
7. The methodology of eliminating wrong answers also works here. It simply means that if you are unable to judge the right choice or right answer, tick the answers that are incorrect, in this way if there remains one answer to be ticked, that will be the correct answer. But if there remains more than one answer to be ticked then it is up to you, whether you like to take risk or not. None can help you, as there may be negative marking also.

EXERCISE

Directions Read the following passages and answer the items that follow each passage. Your answers to these items should be based on the passages only.

PASSAGE-1

Education, without a doubt, has an important functional, instrumental and utilitarian dimension. This is revealed when one asks questions such as ‘what is the purpose of education?’ . The answers, too often, are ‘to acquire qualifications for employment/upward mobility’, ‘wider/higher (in terms of income) opportunities’, and ‘to meet the needs for trained human power in diverse fields for national development’. But in its deepest sense education is not instrumentalist. That is to say, it is not to be justified outside of itself because it leads to the acquisition of formal skills or of certain desired psychological – social attributes. It must be respected in itself. Education is thus not a commodity to be acquired or possessed and then used, but a process of inestimable importance to individuals and society, although it can and does have enormous use value. Education then, is a process of expansion and conversion, not in the sense of converting or turning students into doctors or engineers, but the widening and turning out of the mind—the creation, sustenance and development of self-critical awareness and independence of thought. It is an inner process of moral-intellectual development.

1. What do you understand by the ‘instrumentalist’ view of education?
 - (a) Education is functional and utilitarian in its purposes.
 - (b) Education is meant to fulfil human needs.
 - (c) The purpose of education is to train the human intellect.
 - (d) Education is meant to achieve moral development.
2. According to the passage, education must be respected in itself because
 - (a) it helps to acquire qualifications for employment
 - (b) it helps in upward mobility and acquiring social status
 - (c) it is an inner process of moral and intellectual development
 - (d) All the (a), (b) and (c) given above are correct in this context.
3. Education is a process in which
 - (a) students are converted into trained professionals.
 - (b) opportunities for higher income are generated.
 - (c) individuals develop self-critical awareness and independence of thought.
 - (d) qualifications for upward mobility are acquired.

PASSAGE-2

Now India’s children have a right to receive at least eight years of education, the gnawing question is whether it will remain on paper or become a reality. One hardly needs a reminder that this right is

different from the others enshrined in the Constitution, that the beneficiary – a six year old child cannot demand it, nor can she or he fight a legal battle when the right is denied or violated. In all cases, it is the adult society which must act on behalf of the child. In another peculiarity, where a child’s right to education is denied, no compensation offered later can be adequate or relevant. This is so because childhood does not last. If a legal battle fought on behalf of a child is eventually won, it may be of little use to the boy or girl because the opportunity missed at school during childhood cannot serve the same purpose later in life. This may be painfully true for girls because our society permits them only a short childhood, if at all. The Right to Education (RTE) has become law at a point in India’s history when the ghastly practice of female infanticide has resurfaced in the form of foeticide. This is “symptomatic of a deeper turmoil” in society which is compounding the traditional obstacles to the education of girls. Tenacious prejudice against the intellectual potential of girls runs across our cultural diversity and the system of education has not been able to address it.

4. With reference to the passage, consider the following statements :

1. When children are denied education, adult society does not act on behalf of them.
2. Right to Education as a law cannot be enforced in the country.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

5. According to the passage, what could be the traditional obstacles to the education of girls ?

1. Inability of parents to fight a legal battle when the Right to Education is denied to their children.
2. The traditional way of thinking about girls’ role in society.
3. The prejudice against the intellectual potential of girls.
4. Improper system of education.

Select the correct answer from the codes given below :

- (a) 1 and 2
- (b) 2, 3 and 4
- (c) 1, 3 and 4
- (d) 1, 2, 3 and 4

6. On the basis of the passage, consider the following statements :

1. Right to Education is a legal right and not a fundamental right.
2. For realising the goal of universal education, the education system in the country must be made identical to that of developed countries.

Which of the statements given above is/are correct ?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

7. Which one of the following statements conveys the key message of the passage ?
- India has declared that education is compulsory for its children.
 - Adult society is not keen on implementing the Right to Education.
 - The Right to Education, particularly of a girl child, needs to be safeguarded.
 - The system of education should address the issue of Right to Education.
8. Which one of the following statements conveys the inference of the passage ?
- The society has a tenacious prejudice against the intellectual potential of girls.
 - Adults cannot be relied upon to fight on behalf of children for their Right to Education.
 - The legal fight to get education for children is often protracted and prohibitive.
 - There is no sufficient substitute for education received in childhood.

PASSAGE-3

A moral act must be our own act; must spring from our own will. If we act mechanically, there is no moral content in our act. Such action would be moral, if we think it proper to act like a machine and do so. For, in doing so, we use our discrimination. We should bear in mind the distinction between acting mechanically and acting intentionally. It may be moral of a king to pardon a culprit. But the messenger carrying out the order of pardon plays only a mechanical part in the king's moral act. But if the messenger were to carry out the king's order considering it to be his duty, his action would be a moral one. How can a man understand morality who does not use his own intelligence and power of thought, but lets himself be swept along like a log of wood by a current ? Sometimes a man defies convention and acts on his own with a view to absolute good.

9. Which of the following statements best describe/describes the thought of the writer ?
- A moral act calls for using our discretion.
 - Man should react to a situation immediately.
 - Man must do his duty.
 - Man should be able to defy convention in order to be moral.

Select the correct answer from the codes given below :

- (a) 1 only (b) 1 and 3
(c) 2 and 3 (d) 1 and 4

10. Which of the following statements is the nearest definition of moral action, according to the writer ?
- It is a mechanical action based on official orders from superiors.
 - It is an action based on our sense of discretion.
 - It is a clever action based on the clarity of purpose.
 - It is a religious action based on understanding.

11. The passage contains a statement "lets himself be swept along like a log of wood by a current." Among the following statements, which is/are nearest in meaning to this ?

- A person does not use his own reason.
- He is susceptible to influence/pressure.
- He cannot withstand difficulties/ challenges.
- He is like a log of wood.

Select the correct answer using the codes given below :

- (a) 1 only (b) 1 and 2
(c) 2 and 3 (d) 1 and 4

PASSAGE-4

The concept of 'creative society' refers to a phase of development of a society in which a large number of potential contradictions become articulate and active. This is most evident when oppressed social groups get politically mobilised and demand their rights. The upsurge of the peasants and tribals, the movements for regional autonomy and self-determination, the environmental movements, and the women's movements in the developing countries are signs of emergence of creative society in contemporary times. The forms of social movements and their intensity may vary from country to country and place to place within a country. But the very presence of movements for social transformation in various spheres of a society indicates the emergence of a creative society in a country.

12. What does the author imply by "creative society" ?
- A society where diverse art forms and literary writings seek incentive.
 - A society where social inequalities are accepted as the norm.
 - A society where a large number of contradictions are recognised.
 - A society where the exploited and the oppressed groups grow conscious of their human rights and upliftment.

Select the correct answer using the codes given below :

- (a) 1, 2 and 3 (b) 4 only
(c) 3 and 4 (d) 2 and 4

13. What according to the passage are the manifestations of social movements ?
- Aggressiveness and being incendiary.
 - Instigation by external forces.
 - Quest for social equality and individual freedom.
 - Urge for granting privileges and self-respect to disparaged sections of the society.

Select the correct answer using the codes given below :

- (a) 1 and 3 (b) 2 and 4
(c) 3 and 4 (d) 1, 2, 3 and 4

14. With reference to the passage, consider the following statements :
- To be a creative society, it is essential to have a variety of social movements.
 - To be a creative society, it is imperative to have potential contradictions and conflicts.

Which of the statements given above is/are correct ?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

15. Consider the following three statements :
- Only students can participate in the race.
 - Some participants in the race are girls.
 - All girl participants in the race are invited for coaching.
- Which one of the following conclusions can be drawn from the above statements ?
- All participants in the race are invited for coaching.
 - All students are invited for coaching.
 - All participants in the race are students.
 - None of the statements (a), (b) and (c) given above is correct.
- PASSAGE-5**
- Most champions of democracy have been rather reticent in suggesting that democracy would itself promote development and enhancement of social welfare—they have tended to see them as good but distinctly separate and largely independent goals. The detractors of democracy, on the other hand, seemed to have been quite willing to express their diagnosis of what they see as serious tensions between democracy and development. The theorists of the practical split—“Make up your mind : do you want democracy, or instead, do you want development?”—often came, at least to start with, from East Asian countries, and their voice grew in influence as several of these countries were immensely successful — through the 1970s and 1980s and even later — in promoting economic growth without pursuing democracy.
- To deal with these issues we have to pay particular attention to both the content of what can be called development and to the interpretation of democracy (in particular to the respective roles of voting and of public reasoning). The assessment of development cannot be divorced from the lives that people can lead and the real freedom that they enjoy. Development can scarcely be seen merely in terms of enhancement of inanimate objects of convenience, such as a rise in the GNP (or in personal incomes), or industrialization – important as they may be as means to the real ends. Their value must depend on what they do to the lives and freedom of the people involved, which must be central to the idea of development.
- If development is understood in a broader way, with a focus on human lives, then it becomes immediately clear that the relation between development and democracy has to be seen partly in terms of their constitutive connection, rather than only through their external links. Even though the question has often been asked whether political freedom is “conducive to development”, we must not miss the crucial recognition that political liberties and democratic rights are among the “constituent components” of development. Their relevance for development does not have to be established indirectly through their contribution to be growth of GNP.
16. According to the passage, why is a serious tension perceived between democracy and development by the detractors of democracy?
- Democracy and development are distinct and separate goals.
 - Economic growth can be promoted successfully without pursuing a democratic system of governance.
 - Non-democratic regimes deliver economic growth faster and far more successfully than democratic ones.
- (d) All the statements (a), (b) and (c) given above are correct in this context.
17. According to the passage, what should be the ultimate assessment/aim/view of development?
- Rise in the per capita income and industrial growth rates.
 - Improvement in the Human Development Index and GNP.
 - Rise in the savings and consumption trends.
 - Extent of real freedom that citizens enjoy.
18. What does a “constitutive” connection between democracy and development imply?
- The relation between them has to be seen through external links.
 - Political and civil rights only can lead to economic development.
 - Political liberties and democratic rights are essential elements of development.
 - None of the statements (a), (b) and (c) given above is correct in this context.

PASSAGE-6

In a typical Western liberal context, deepening of democracy invariably leads to consolidation of ‘liberal values’. In the Indian context, democratization is translated into greater involvement of people not as ‘individuals’ which is a staple to liberal discourse, but as communities or groups. Individuals are getting involved in the public sphere not as ‘atomized’ individuals but as members of primordial communities drawn on religious or caste identity. Community-identity seems to be the governing force. It is not therefore surprising that the so-called peripheral groups continue to maintain their identities with reference to the social groups (caste, religion or sect) to which they belong while getting involved in the political processes despite the fact that their political goals remain more or less identical. By helping to articulate the political voice of the marginalized, democracy in India has led to ‘a loosening of social strictures’ and empowered the peripherals to be confident of their ability to improve the socio-economic conditions in which they are placed. This is a significant political process that had led to a silent revolution through a meaningful transfer of power from the upper caste elites to various subaltern groups within the democratic framework of public governance.

19. According to the passage, what does “deepening of democracy” mean in the Western context?
- Consolidation of group and class identities.
 - Democratization translated as greater involvement of people.
 - Democratization as greater involvement of ‘atomized’ individuals in the public sphere.
 - None of the statements (a), (b) and (c) given above is correct in this context.
20. Greater democratization in India has not necessarily led to
- the dilution of caste and communal identities in the public sphere.
 - irrelevance of community identity as a governing force in Indian politics.
 - marginalization of elite groups in society.
 - relative unimportance of hereditary identities over class identities.

21. What is the “silent revolution” that has occurred in the Indian democratic process?
- Irrelevance of caste and class hierarchies in political processes.
 - Loosening of social strictures in voting behaviour and patterns.
 - Social change through transfer of power from upper caste elites to subaltern groups.
 - All the statements (a), (b) and (c) given above are correct in this context.

PASSAGE-7

For achieving inclusive growth there is a critical need to rethink the role of the State. The early debate among economists about the size of the Government can be misleading. The need of the hour is to have an enabling Government. India is too large and complex a nation for the State to be able to deliver all that is needed. Asking the Government to produce all the essential goods, create all the necessary jobs, and keep a curb on the prices of all goods is to lead to a large cumbersome bureaucracy and widespread corruption.

The aim must be to stay with the objective of inclusive growth that was laid down by the founding fathers of the nation and also to take a more modern view of what the State can realistically deliver.

This is what leads to the idea of an enabling State, that is, a Government that does not try to directly deliver to the citizens everything that they need. Instead, it (1) creates an enabling ethos for the market so that individual enterprise can flourish and citizens can, for the most part, provide for the needs of one another, and (2) steps in to help those who do not manage to do well for themselves, for there will always be individuals, no matter what the system, who need support and help. Hence we need a Government that, when it comes to the market, sets effective, incentive-compatible rules and remains on the sidelines with minimal interference, and at the same time, plays an important role in directly helping the poor by ensuring that they get basic education and health services and receive adequate nutrition and food.

22. According to the passage :

- The objective of inclusive growth was laid down by the founding fathers of the nation.
- Need of the hour is to have an enabling Government.
- The Government should engage in maximum interference in market processes.
- There is a need to change the size of the Government.

Which of the statements given above are correct ?

- 1 and 2
- 2 and 3
- 1 and 4
- 1, 2, 3 and 4

23. According to the passage, the strategy of inclusive growth can be effected by focusing on

- Meeting all the needs of every citizen in the country.
- Increasing the regulations over the manufacturing sector.
- Controlling the distribution of manufactured goods.
- Delivery of the basic services to the deprived sections of the society.

24. What constitutes an enabling Government?
- A large bureaucracy.
 - Implementation of welfare programmes through representatives.
 - Creating an ethos that helps individual enterprise.
 - Providing resources to those who are underprivileged.
 - Offering direct help to the poor regarding basic services.

Select the correct answer from the codes given below :

- 1, 2 and 3
- 4 and 5
- 3, 4 and 5
- 1, 2, 3, 4 and 5

25. Why is the State unable to deliver “all that is needed”?

- It does not have sufficient bureaucracy.
- It does not promote inclusive growth.

Select the correct answer from the codes given below :

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 nor 2

26. What is the essential message being conveyed by the author of the passage?

- The objectives of inclusive growth laid down by the founding fathers of the nation should be remembered.
- The Government needs to make available more schools and health services.
- The Government needs to establish markets and industries to meet the needs of the poor strata of the society.
- There is a need to rethink the role of the State in achieving inclusive growth.

PASSAGE-8

A country under foreign domination seeks escape from the present in dreams of a vanished age, and finds consolation in visions of past greatness. That is a foolish and dangerous pastime in which many of us indulge. An equally questionable practice for us in India is to imagine that we are still spiritually great though we have come down in the world in other respects. Spiritual or any other greatness cannot be founded on lack of freedom and opportunity, or on starvation and misery. Many western writers have encouraged that notion that Indians are other-worldly. I suppose the poor and unfortunate in every country become to some extent other-worldly, unless they become revolutionaries, for this world is evidently not meant for them. So also subject peoples.

As a man grows to maturity he is not entirely engrossed in, or satisfied with, the external objective world. He seeks also some inner meaning, some psychological and physical satisfaction. So also with peoples and civilizations as they mature and grow adult. Every civilization and every people exhibit these parallel streams of an external life and an internal life. Where they meet or keep close to each other, there is an equilibrium and stability. When they diverge conflict arises and the crises that torture the mind and spirit.

27. The passage mentions that “this world is evidently not meant for them”. It refers to people who

- seek freedom from foreign domination.
- live in starvation and misery.
- become revolutionaries.

PASSAGE-9

The poor especially in market economies, need the strength that collectivities offer for creating more economic, social and political space for themselves, for enhancing their socio-economic well-being and voice, and as a protection against free market individualism. It has been argued that a group approach to farming, especially in the form of bottom up agricultural production collectivities, offers substantial scope for poverty alleviation and empowering the poor as well as enhancing agricultural productivity. To realize this potential, however, the groups would need to be voluntary in nature, small in size, participative in decision making and equitable in work sharing and benefit distribution. There are many notable examples of such collectivities to be found in varied contexts, such as in the transition economies. All of them bear witness to the possibility of successful cooperation under given conditions. And although the gender impact of the family cooperatives in the transition economies are uncertain, the Indian examples of women-only groups farming offer considerable potential for benefiting women.

31. Agricultural collectivities such as group based farming can provide the rural poor

 1. empowerment.
 2. increased agricultural productivity.
 3. safeguard against exploitative markets.
 4. surplus production of agricultural commodities.

Select the correct answer using the codes given below:

(a) 1, 2, 3 and 4 (b) 1, 2 and 3
(c) 2 and 4 (d) 1, 3 and 4

32. What does the author imply by “gender impact”?

(a) Women are doubtful participants in cooperatives.
(b) Family cooperatives may not include women.

PAGE-10

Today's developing economies use much less energy per capita than developed countries such as the United States did at similar incomes, showing the potential for lower-carbon growth. Adaptation and mitigation need to be integrated into a climate-smart development strategy that increases resilience, reduces the threat of further global warming, and improves development outcomes. Adaptation and mitigation measures can advance development, and prosperity can raise incomes and foster better institutions. A healthier population living in better-built houses and with access to bank loans and social security is better equipped to deal with a changing climate and its consequences. Advancing robust, resilient development policies that promote adaptation is needed today because changes in the climate, already begun, will increase even in the short term.

The spread of economic prosperity has always been intertwined with adaptation to changing ecological conditions. But as growth has altered the environment and as environmental change has accelerated, sustaining growth and adaptability demands greater capacity to understand our environment, generate new adaptive technologies and practices, and diffuse them widely. As economic historians have explained, much of humankind's creative potential has been directed at adapting to the changing world. But adaptation cannot cope with all the impacts related to climate change, especially as larger changes unfold in the long term. Countries cannot grow out of harm's way fast enough to match the changing climate. And some growth strategies, whether driven by the government or the market, can also add to vulnerability — particularly if they overexploit natural resources. Under the Soviet development plan, irrigated cotton cultivation expanded in water-stressed Central Asia and led to the near disappearance of the Aral Sea, threatening the livelihoods of fishermen, herders and farmers. And clearing mangroves — the natural coastal buffers against storm surges — to make way for intensive farming or housing development , increases the physical vulnerability of coastal settlements, whether in Guinea or in Louisiana.

34. Which of the following conditions of growth can add to vulnerability?

 - When the growth occurs due to excessive exploitation of mineral resources and forests.
 - When the growth brings about a change in humankind's creative potential.
 - When the growth is envisaged only for providing houses and social security to the people.
 - When the growth occurs due to emphasis on farming only

Select the correct answer using the codes given below:

35. What does low-carbon growth imply in the present context?

1. More emphasis on the use of renewable sources of energy.
 2. Less emphasis on manufacturing sector and more emphasis on agriculture sector.
 3. Switching over from monoculture practices to mixed farming.
 4. Less demand for goods and services.

Select the correct answer using the codes given below:

- (a) 1 only
 - (b) 2, 3 and 4
 - (c) 1 and 4
 - (d) None of the above implies low-carbon growth

36. Which of the following conditions is/are necessary for sustainable economic growth?

1. Spreading of more economic prosperity.
 2. Popularising/spreading of adaptive technologies widely.
 3. Investing on research in adaptation and mitigation technologies.

Select the correct answer using the codes given below:

37. Which of the following inferences can be made from the passage?

1. Rainfed crops should not be cultivated in irrigated areas.
 2. Farming under water-deficient areas should not be a part of development strategy.

Select the correct answer using the codes given below:

38. Consider the following assumptions :

1. Sustainable economic growth demands the use of creative potential of man.
 2. Intensive agriculture can lead to ecological backlash.
 3. Spread of economic prosperity can adversely affect the ecology and environment.

With reference to the passage, which of the above assumptions is/are valid?

39. Which one of the following statements constitutes the central theme of this passage?

- (a) Countries with greater economic prosperity are better equipped to deal with the consequences of climate change.
 - (b) Adaptation and mitigation should be integrated with development strategies.
 - (c) Rapid economic growth should not be pursued by both developed and developing economies.
 - (d) Some countries resort to overexploitation of natural resources for the sake of rapid development.

PASSAGE-11

The need for Competition Law becomes more evident when foreign direct investment (FDI) is liberalized. The impact of FDI is not always pro-competitive. Very often FDI takes the form of a foreign corporation acquiring a domestic enterprise or establishing a joint venture with one. By making such an acquisition the foreign investor may substantially lessen competition and gain a dominant position in the relevant market, thus charging higher prices. Another scenario is where the affiliates of two separate multinational companies (MNCs) have been established in competition with one another in a particular developing economy, following the liberalization of FDI. Subsequently, the parent companies overseas merge. With the affiliates no longer remaining independent, competition in the host country may be virtually eliminated and the prices of the products may be artificially inflated. Most of these adverse consequences of mergers and acquisitions by MNCs can be avoided if an effective competition law is in place. Also, an economy that has implemented an effective competition law is in a better position to attract FDI than one that has not. This is not just because most MNCs are expected to be accustomed to the operation of such a law in their home countries and know how to deal with such concerns but also that MNCs expect competition authorities to ensure a level playing field between domestic and foreign firms.

40. With reference to the passage, consider the following statements:

1. It is desirable that the impact of Foreign Direct Investment should be pro-competitive.
 2. The entry of foreign investors invariably leads to the inflated prices in domestic markets.

Which of the statements given above is/are correct?

41. According to the passage, how does a foreign investor dominate the relevant domestic market?

1. Multinational companies get accustomed to domestic laws.
 2. Foreign companies establish joint ventures with domestic companies.
 3. Affiliates in a particular market/sector lose their independence as their parent companies overseas merge.
 4. Foreign companies lower the cost of their products as compared to that of products of domestic companies.

Which of the statements given above are correct?

42. What inference may be drawn from this passage?

- (a) Foreign investors and multinational companies always dominate the domestic market.
 - (b) It is not in the best interests of the domestic economy to allow mergers of companies.
 - (c) With competition law, it is easy to ensure a level playing field between domestic and foreign firms.
 - (d) For countries with open economy, Foreign Direct Investment is essential for growth.

PASSAGE-12

Modern economic theory does not differentiate between renewable and non-renewable materials, as its approach is to measure everything by means of a money price. Thus, taking various alternative fuels like coal, oil, wood and water-power; the only difference between them recognised by modern economics is relative cost per equivalent unit. The cheapest is automatically the one to be preferred, as to do otherwise would be irrational and uneconomic. From a Buddhist point of view, of course, this will not do since the essential difference between non-renewable fuels like coal and oil on the one hand and renewable sources like wind-power and water-power on the other cannot be simply overlooked. Non-renewable goods must be used only if their use is indispensable, and then only with the greatest care and highest concern for conservation. To use them carelessly or extravagantly is an act of violence, and while complete non-violence may not be possible on this earth, it is nonetheless a duty of man to aim at the ideal of non-violence in all he does.

43. Which of the following statements is/are correct on the basis of information in the above passage?

 1. Buddhist economists totally prohibit the use of non-renewable source
 2. The attitude of modern economists towards natural resources is uneconomic
 3. Complete non-violence is not possible.

Select the correct answer using the code given below:

44. The Buddhist viewpoint implies:

 - (a) conservation should be given the highest consideration
 - (b) hydel projects are highly capital intensive
 - (c) oil is to be preferred since it does not produce ash
 - (d) money economics should govern the choice of energy sources

45. Buddhist economists are not in favour of:

 - (a) economic development
 - (b) world economy being governed by oil prices
 - (c) using non-renewable sources indiscriminately
 - (d) harnessing wind energy

46. In this passage, the author has tried to:

 - (a) show that the modern economist is concerned only with costs
 - (b) underline the need for conserving natural resources
 - (c) differentiate between the two economic philosophies
 - (d) explain the impact of oil on the world economy

PASSAGE - 13

The art of effective presentation is the fruit of persistent efforts and practice. Your personality is reflected in your presentation. Adequate planning and preparation are essential for a successful presentation. A thorough preparation is the best antidote for nervousness. If a person is not successful in presenting his views and ideas then it will become the greatest obstacle in his career and life. People form a perception about how competent you are by how you present yourself when you stand and speak. A successful presentation can help a person in winning orders for

the company he works for. Most people who work in organizations find that their effectiveness and success depend on their ability to organize their ideas and present them effectively. Delivering your message in person provides immediate feedback that helps you clarify points and answer questions.

Oral presentations are often more persuasive. As far as possible, one should never read a presentation or memorize it. Then the presentation will lose flexibility and communication will suffer. The spoken word wields great power. Face-to-face interaction demands thinking and speaking. Anecdotes, quotations and humorous touches often make a presentation interesting. One may consult his notes frequently when he is making his presentation. This may create a feeling among listeners that the speaker has taken pains to prepare for the occasion. A positive response will be generated and the speaker will be heard with respect. Speaker's enthusiasm and confidence can influence people to accept or reject an idea in a way that a written document cannot. A presentation should be persuasive and should change the audience's attitude. The topic of the presentation must be interesting to the audience. The topic should be of interest to the speaker also otherwise he will go through the motions of making a presentation. No perfunctory approach should ever be resorted to while making a presentation. It is very important that the speaker is perceived by the audience as credible and qualified to speak about the topic. Speaker must adapt to intellectual level of the audience.

- 47.** Consider the following statements :

 1. Persuasive skill-set is a prerequisite to an effective presentation.
 2. At the end of a presentation, offering small gifts to the audience by the speaker is a good strategy.

Which of the statement(s) given above is/are correct?

- 48.** Consider the following statements :

1. Innate stage fright of a speaker can be countered by meticulous preparation of his presentation.
 2. Confidence of a speaker is generally taken by the audience as a sign of arrogance.

Which of the statement(s) given above is/are correct?

- 49 Consider the following statements :

- Consider the following statements :

 1. Topic of the presentation must be of relevant interest to the audience to induce their responses.
 2. Topic of the presentation may or may not be of intimate interest to the speaker.

Which of the statement(s) given above is/are correct?

- 50.** Consider the following statements :

1. A speaker must memorize his talk so as to introduce more flexibility.
 2. A written document is more efficacious than an oral presentation as it leaves a lasting impression on the reader.

Which of the statement(s) given above is/are correct?

PASSAGE-14

“Rivers should link, not divide us,” said the Indian Prime Minister expressing concern over interstate disputes and urged state governments to show “understanding and consideration, statesmanship and an appreciation of the other’s point of view.” Water conflicts in India now reach every level; divide every segment of our society, political parties, states, regions and sub-regions within states, districts, castes and groups and individual farmers. Water conflicts within and between many developing countries are also taking a serious turn. Fortunately, the “water wars”, forecast by so many, have not yet materialized. War has taken place, but over oil, not water. Water is radically altering and affecting political boundaries all over the world, between as well as within countries. In India, water conflicts are likely to worsen before they begin to be resolved. Till then they pose a significant threat to economic growth, security and health of the ecosystem and the victims are likely to be the poorest of the poor as well as the very sources of water - rivers, wetlands and aquifers.

Conflicts might sound bad or negative, but they are logical developments in the absence of proper democratic, legal and administrative mechanisms to handle issues at the root of water conflicts. Part of the problem stems from the specific nature of water, namely that water is divisible and amenable to sharing; one unit of water used by one is a unit denied to others; it has multiple uses and users and involves resultant trade-offs. Excludability is an inherent problem and very often exclusion costs involved are very high: it involves the issue of graded scales and boundaries and need for evolving a corresponding understanding around them. Finally, the way water is planned, used and managed causes externalities, both positive and negative, and many of them are unidirectional and asymmetric.

There is a relatively greater visibility as well as a greater body of experience in evolving policies, frameworks, legal set-ups and administrative mechanisms dealing with immobile natural resources, however contested the space may be. Reformists as well as revolutionary movements are rooted in issues related to land. Several political and legal interventions addressing the issue of equity and societal justice have been attempted. Most countries have gone through land reforms of one type or another. Issues related to forests have also generated a body of comprehensive literature on forest resources and rights. Though conflicts over them have not necessarily been effectively or adequately resolved, they have received much more serious attention, have been studied in their own right and practical as well as theoretical means of dealing with them have been sought. In contrast, water conflicts have not received the same kind of attention.

54. According to the author which of the following is/are consequences of water conflicts?

 - Trans-border conflicts between developing countries.
 - Water bodies will remain unused and unaffected till the conflict is resolved.
 - Water conflicts have altered the political boundaries within countries.
 - 1 only
 - 2 only
 - 3 only
 - Both 1 and 3

55. Why does the author ask readers not to view conflicts too negatively?

 - Most countries have survived them easily.
 - They bring political parties together.
 - They only affect the grassroot levels.
 - 1 only
 - 2 only
 - Neither 1, 2 nor 3
 - All 1, 2 and 3

56. The author's main objective in writing the passage is to

 - showcase government commitment to solve the water distribution problem
 - make a strong case for war as the logical resolution for water conflicts
 - point out the seriousness of the threat posed by unresolved water conflicts
 - describe how the very nature of water contributes to water struggles

57. What is the Prime Minister's advice to resolve water disputes?

 - Link all rivers to make national grid.
 - Politicians alone can solve the problem.
 - Bridges and dams can resolve water issues.
 - Make consensual and conscious efforts.

58. According to the passage, which of the following is a limitation of water resulting in disputes?

 - Water is not a divisible resource.
 - Manipulation of water distribution is easy.
 - Water is an interconnected resource.
 - None of these

PASSAGE-15

The main idea conveyed by the report is that our children do not get a chance to enjoy learning at school because the syllabi are irrationally organised, teaching is text-book centred, and the

system of examinations instils fear and encourages mechanical repetition. Textbooks developed along the lines of reconceptualised syllabi can attempt to integrate positive values, life skills, aesthetic sensibility and concern for the environment. They are interactive and make a conscious effort to point both children and the teachers towards other sources of learning such as neighbourhood, nature etc. In addition two parallel challenges deserve attention. The first is examination reforms. Rigid indifference to individual differences is the major flaw of the present system. From the quality of questions to the manner of evaluation, it favours drilled preparedness and ignores independent thought while the unrealistically high cut-offs in coveted colleges are a further sign of systemic inefficiency. It is hardly surprising that the very thought of examinations makes the young depressed. Moreover, practices of splitting unified topics into arbitrary bits carrying small marks value encourage teachers to concentrate on scoring topics overlooking the importance of perspective and overall understanding. Little surprise that many elite high-fee schools are opting for International Baccalaureate not because it offers status with its global certification but for its flexibility and respect for individual differences in learning.

The second area is teacher training, which suffers from obsolete notions. Most teachers are trained mainly to cover the syllabus in a mechanical exam-oriented manner. By insisting that every child move at the same pace in all subjects teachers encourage rote learning and ridicule for those who fall behind. Teacher training, whether for nursery or secondary school teachers, should be embedded in courses which have the capacity to develop both the teacher's personality and perspective on society by linking subject learning with reflective and creative project work. The ultimate responsibility lies with universities and institutes of higher learning to ensure the quality of all teachers. Initiatives to improve the content of teacher training courses will ensure utilisation of desolate university campuses during summer vacations which conceal an enormous waste of infrastructure and expertise. The quality of education is a reflection of the quality of teachers and major improvements in their training and working conditions will motivate the young to pursue a teaching career and determine how India fares in the pursuit of economic and social development in the years to come.

- 59.** According to the author, what is the major weakness of the present examination system?
- Teachers do not take into account the nature of questions asked in the examination.
 - Teachers are subjective in their assessment of papers.
 - Cut-off standards for admissions to good institutions need to be raised.
 - It does not consider unique learning patterns of students.
- 60.** Which of the following factors is responsible for / children's dislike of learning?
- Rigid, logical, systematic organisation of syllabus.
 - Teaching methodology which does not focus on text books.
 - Examination pattern which rewards rote learning.
- 1 only
 - Both 1 and 2
 - 3 only
 - All 1, 2 and 3

- 61.** What is the drawback of teacher training courses?
- They are held during summer vacations so attendance is low.
 - Content is being constantly changed so teachers cannot keep up.
 - Their focus is on imparting education only from an examination perspective.
 - They focus on making syllabi interactive rather than focusing on examination patterns.
- 62.** According to the author, which of the following conditions will influence India's future development?
- Replacing traditional educational systems with globally accepted foreign systems
 - Improving employment conditions of teaching staff
 - Getting global accreditation for Indian college courses
- 1 only
 - Both 1 and 2
 - Both 2 and 3
 - 2 only
- 63.** What will be the impact of having an interactive syllabus?
- Teachers and students will explore sources other than the textbook.
 - Students may get distracted and perform poorly in examinations.
 - Weaker students may get left behind.
 - Teachers may not be able to cover the entire syllabus for the examination.

PASSAGE-16

We find that today the unity and integrity of the nation is threatened by the divisive forces of regionalism, linguism and communal loyalties which are gaining ascendancy in national life and seeking to tear apart and destroy national integrity. We tend to forget that India is one nation and we are all Indians first and Indians last. It is time we remind ourselves what the great visionary and builder of modern India Jawaharlal Nehru said, "Who dies if India lives, who lives if India dies?" We must realise, and this is unfortunately what many in public life tend to overlook, sometimes out of ignorance of the forces of history and sometimes deliberately with a view to promoting their self-interest, that national interest must inevitably and forever prevail over any other considerations proceeding from regional, linguistic or communal attachments. The history of India over the past centuries bears witness to the fact that India was at no time a single political unit. Even during the reign of the Maurya dynasty, though a large part of the country was under the sovereignty of the Mauryan kings, there were considerable portions of the territory which were under the rule of independent kingdoms. So also during the Mughal rule which extended over large parts of the territory of India, there were independent rulers who enjoyed political sovereignty over the territories of their respective kingdoms. It is an interesting fact of history that India was forged into a nation, neither on account of a common language nor on account of the continued existence of a single political regime over its territories but on account of a common culture evolved over the centuries. It is cultural unity—something more fundamental and enduring than any other bond which may unite the people of a country together which has welded this country into a nation. But until the advent of the British rule, it was not constituted into a single political unit. There were,

throughout the period of history for which we have fairly authenticated accounts, various kingdoms and principalities which were occasionally engaged in conflict with one another. During the British rule, India became a compact political unit having one single political regime over its entire territories and this led to the evolution of the concept of a nation. This concept of one nation took firm roots in the minds and hearts of the people during the struggle for independence under the leadership of Mahatma Gandhi. He has rightly been called the Father of the Nation because it was he who awakened in the people of this country a sense of national consciousness and instilled in them a high sense of patriotism without which it is not possible to build a country into nationhood. By the time the Constitution of India came to be enacted, insurgent India, breaking a new path of non-violent revolution and fighting to free itself from the shackles of foreign domination, had emerged into nationhood and “the people of India” were inspired by a new enthusiasm, a high and noble spirit of sacrifice and above all, a strong sense of nationalism and in the Constitution which they framed. They set about the task of a strong nation based on certain cherished values for which they had fought.

64. The author has quoted Jawaharlal Nehru to emphasise the point that

 - national interest must enjoy supreme importance.
 - India is going to survive even if the world is under the spell of destruction.
 - the world will be destroyed if India is on the threshold of destruction.
 - the survival of the world depends only upon the well-being of India.

65. What, according to the author, is the impact of the divisive forces on our nation?

 - They promote a sense of regional pride.
 - They help people to form linguistic groups.
 - They separate groups of people and create enmity among them.
 - They encourage among people the sense of loyalty to their community.

66. “Communal loyalties” have been considered by the author as

 - a good quality to be cherished
 - of no consequence to the nation
 - a very important aspect for nation-building
 - a threat to the solidarity of the nation

67. The passage appears to have been written with the purpose of

 - giving a piece of advice to politicians of free India
 - assessing the patriotic values and sacrifices made by people for India’s freedom
 - justifying the teaching of Mahatma Gandhi and its impact on the people
 - giving a historical account of how India evolved as a nation

68. History shows that India, which was not a political unit earlier, became so

 - during the reign of Maurya dynasty
 - during the Mughal rule

PASSAGE-17

The stubborn persistence of child malnutrition in India is one of the tragedies of our time. Many of us have long agonised over this preventable problem, and we continue to ask: why do half of our children not get enough or the right food or adequate care? Even in sub-Saharan Africa, only 30 per cent of the children are malnourished, versus 50 per cent in South Asia. And this gap exists despite our much higher levels of per capita income, education and even safer water access. One-third of the babies in India are born with low birth weight compared to one-sixth in sub-

Saharan Africa. This is heartbreaking given the dramatic improvements in our agriculture, advances in literacy, and great strides in economic growth. For more than 20 years India has even sustained the greatest effort in history to improve nutritional standards, according to UNICEF, through its Integrated Child Development Services (ICDS) Programme. So it is not for lack of effort. Nor is it due to poverty, which has been steadily declining by one per cent a year for two decades. What accounts for this puzzle? In 1996, India's famous physician nutritionist wrote a ground-breaking article on this called 'The Asian Enigma'. After considering different factors, including access to food and income and our vegetarianism, he concluded that the lower status of women might be the reason. The link between women's status and child nutrition seems plausible. In many Indian homes, men eat first; women have to make do with leftovers. This is perhaps why 83 per cent of women in India suffer from iron deficiency-anaemia versus 40 per cent in sub-Saharan Africa. A malnourished mother will give birth to a baby with low birth weight. Moreover, domestic work often forces a mother to delegate the chore of feeding solid food to her baby to older siblings. If women had more control over family income and decisions, they would devote them to better pre and post-natal care and to their children.

So far this was the theory. But now a study by the International Food Policy Research Institute and Emory University seems to confirm this hypothesis. It brought together data from 36 developing countries, spanning over one hundred thousand children under the age of three and an equal number of women. It measured a woman's position in the home—whether she works for cash, her age at marriage, and the difference in age and education between spouses. The study concludes that the lowly position of women in the family is the single most important reason for the gap in children's nutrition between South Asia and sub-Saharan Africa, followed by sanitation (lack of latrines) and urbanisation (slum living).

I wonder why the position of women in India is worse than that of women in other societies. The report seemed to suggest that South Asian women were not so far behind African women as their inferior status too limited their ability to nurture children. I also wonder whether children's well being is only a woman's issue or a family concern where men play a crucial role. I suspect there are no easy answers. Women everywhere suffer from lower status, but in India it appears to have devastating consequences. The policy implications are clear: if we want to reduce child malnutrition, we must combine our child programmes with efforts to improve the situation of women. To succeed, we need healthy children who'll become tomorrow's innovative adults. If we ignore gender inequality, we will continue to produce stunted children, wasted lives, and untold misery.

74. A hypothesis related to low birth weight has now been confirmed. According to this, the major reason for this state is
 (a) Vegetarianism (b) Illiteracy
 (c) Illiteracy of women (d) Status of women
75. Which type of scheme indicates that there was no lack of efforts in India for the last two decades to improve the situation?
 (a) Literacy
 (b) Rural Development

- (c) Child Development
 (d) Family Planning
76. According to the author,
 (a) child malnutrition can be reduced with the help of child nutrition schemes.
 (b) increased family income would result in better pre and post-natal care.
 (c) men should play more involved role in children's well being.
 (d) India has not put sustained efforts to improve nutritional standards.
77. Which of the following is the major reason for a large number of women in India suffering from iron deficiency?
 (a) Women are not getting sufficient food
 (b) More women eating only vegetarian food
 (c) Women not eating balanced food
 (d) Lack of proper medical check-up
78. In which of the following areas is South Asia's performance better than that of sub-Saharan Africa?
 (a) Safer drinking water
 (b) Lower infant mortality rate
 (c) Higher status of women
 (d) Higher birth weight of children
79. According to the author, the crux is
 (a) women have lower status everywhere as compared to men.
 (b) improvement of sanitation and slum conditions.
 (c) that in India, the per capita income and education level of women is very low.
 (d) low status of women has a horrifying result on child malnutrition.
80. Which of the following was one of the measures of women's position in the home?
 (a) Number of children
 (b) Difference in husband's and wife's income.
 (c) Weights of child at birth
 (d) Age of marriage
81. What according to the passage is heartbreaking?
 (a) India's performance lower than Africa
 (b) Failure of ICDS programme
 (c) Sub-Saharan Africa's every one-sixth child being born with low weight
 (d) The puzzle of poverty declining only by one per cent a year

PASSAGE-18

Job performance is affected by a number of factors. Motivation alone does not lead to increase in performance. Ability and technology moderates the relationship between motivation and performance. The higher the levels of ability and motivation, the higher the level of performance will be. However, increasing motivation beyond an optimal level tends to produce a dysfunctional result because it is accompanied by an increasing level of anxiety. A high level of anxiety often disrupts performances. The relationship between satisfaction and performance is not clear. Satisfaction may or may not lead to high performance depending on the perceived availability of valued outcomes and the perceived

expectancy that a person's effort and performance will lead to receiving the valued rewards. If the person expects that his performance will lead to increased rewards which he values, the level of his motivational effort will increase; if he anticipates less, his motivational effort will be lower.

The relationship between job dissatisfaction and poor performance seems to be clearer than that between satisfaction and performance. Dissatisfaction leads to poor performance by means of apathy, absenteeism, turnover, sabotage, and strike. In addition, high performers are more vulnerable to job dissatisfaction because they tend to expect more from their jobs than low performers.

Job satisfaction is more closely related to the decision to join and remain in an organisation than to the motivation to produce. The motivation to produce largely depends on the availability of valued outcomes (valence), the perceived instrumentality of performance for receiving incentive rewards, and the perceived expectancy that effort leads to performance. The task of satisfying employees is much easier than the task of motivating them because the former can be achieved by rewarding them while the latter requires such additional constraints as establishing performance-reward contingencies and designing motivating work systems.

82. The individual's decision to remain in the organisation depends on
 - (a) relationship between satisfaction and performance
 - (b) the level of anxiety induced by the job
 - (c) his level of motivation
 - (d) the level of job satisfaction
83. Which of the following statement/s is/are **true** in the context of the passage?
 1. Ability leads to performance.
 2. Job satisfaction certainly leads to higher performance.
 3. High anxiety adversely affects performance.
 - (a) 1 and 2
 - (b) 2 and 3
 - (c) 1 and 3
 - (d) 1 only
84. Which of the following combination of factors affects job performance?
 - (a) Job satisfaction and Motivation
 - (b) Motivation and Ability
 - (c) Job Satisfaction and Ability
 - (d) Job Satisfaction, Motivation and Ability
85. The task of motivating employees is difficult due to
 - (a) apathy and lack of enthusiasm of employees
 - (b) difficulty in establishing relationship between satisfaction and performance
 - (c) difficulty in monitoring ability level of employees
 - (d) difficulty in designing a motivating work system

PASSAGE-19

We tend to be harsh on our bureaucracy, but nowhere do citizens enjoy dealing with their government. They do it because they have to. But that doesn't mean that the experience has to be dismal. Now there is a new wind blowing through government departments around the world, which could take some of this pain away. In the next five years it may well transform not only the way public services are delivered but also the fundamental relationship between governments and citizens. Not surprisingly, it is the Internet that is behind it. After e-commerce and e-business, the next revolution may be e-governance.

Examples abound. The municipality of Phoenix, Arizona, allows its citizens to renew their car registrations, pay traffic fines, replace lost identity cards, etc, online without having to stand in endless queues in a grubby municipal office. The municipality is happy because it saves \$5 a transaction. It costs only \$1.60 to process an online transaction versus \$ 6.60 to do it across the counter. In Chile, people routinely submit their income tax returns over the Internet, which has increased transparency, and drastically reduced the time taken and the number of errors and litigation with the tax department. Both tax payers and the revenue department are happier.

The furthest ahead, not surprisingly, is the small, rich and entrepreneurial civil service of Singapore, which allows citizens to do more functions online than any other. As in many private companies, the purchasing and buying of Singapore's government departments is now on the Web, and cost benefits come through more competitive bidding, easy access to global suppliers and time saved by online processing of orders. They can **post** their catalogues on their site, bid for contracts, submit invoices and check their payment status over the Net.

The most useful idea for Indian municipalities is GovWorks, a private sector-run site that collects local taxes, fines and utility bills for 3600 municipalities across the United States. It is a citizen's site, which also provides information on government jobs, tenders, etc. The most ambitious is the British government, which has targeted to convert 100 per cent of its transactions with its citizens to the Internet by 2005.

Cynics in India will say, 'Oh e-governance will never work in India. We are so poor and we don't have computers.' But they are wrong! There are many experiments afoot in India as well. Citizens in Andhra Pradesh can download government forms and submit applications on the Net without having to bribe clerks. In many districts, land records are online and this has created transparency. Similarly, in Dhar district of Madhya Pradesh, villagers have begun to file applications for land transfers and follow their progress on the Net. In seventy villages in the Kolhapur and Sangli districts in Maharashtra, Internet booths have come up where farmers can daily check the market rates of agricultural commodities in Marathi, along with data on agricultural schemes, information on crop technology, when to spray and plant their crops and bus and railway time tables. They also find vocational guidance on jobs, applications for ration cards, kerosene/gas burners and land record extracts with details of land ownership.

Sam Pitroda's WorldTel, Reliance Industries and the Tamil Nadu government are jointly laying 3000 km of optic fibre cables to create a Tamil Network which will offer ration cards, school, college and hospital admission forms, land records, and pension records. If successful, WorldTel will expand the network to Gujarat, Karnataka and West Bengal. In Kerala, all the villages are getting linked online to the district headquarters, allowing citizens to compare the development priorities of their villages with other villages in the State.

Many are still skeptical of the real impact because so few Indians have computers. The answer lies in interactive cable TV and in Internet kiosks. Although India has only five million computers and thirty-eight million telephones, it has thirty-four million homes with cable TV and these are growing eight per cent a year. By 2005

most cable homes will have access to the Internet from many of the 700000 local STD/PCO booths. Internet usage may be low today, but it is bound to grow rapidly in the future, and e-governance in India may not be a dream.

86. According to the passage, which country has the most ambitious plan for e-governance?
 - (a) USA
 - (b) Chile
 - (c) UK
 - (d) India
87. GovWorks is working in which of the following countries?
 - (a) India
 - (b) US
 - (c) Chile
 - (d) Singapore
88. How can India overcome low penetration of computers for e-governance?
 - (a) By manufacturing more computers
 - (b) Through cable TV and Internet Kiosks
 - (c) By opening more STD/PCO booths
 - (d) By making the internet free
89. In which direction is the new wind blowing?
 - (a) More and more interaction of citizens with government through Internet
 - (b) Outsourcing the work of infrastructure creation for Internet
 - (c) Increasing the penetration of computers in rural areas
 - (d) Integrating e-commerce, e-business and e-governance
90. According to the author, e-governance in India
 - (a) is a dream and may not succeed
 - (b) will not succeed unless more computers are owned by citizens
 - (c) has witnessed successful attempts and plans
 - (d) will not work because the model is suited for developed countries

PASSAGE-20

An independent, able and upright judiciary is the hallmark of a free democratic country. Therefore, the process of judicial appointments is of vital importance. At present, on account of the Supreme Court's last advisory opinion, the role of the executive and its interference in the appointment of judges is minimal, which, in the light of our previous experience, is most welcome. However, there is a strong demand for a National Judicial Commission on the ground of wider participation in the appointment process and for greater transparency. The composition, the role and the procedures of the proposed National Judicial Commission, must be clearly spelt out, lest it be a case of jumping from the frying-pan into the fire.

Recently, there has been a lively debate in England on the subject. A judicial commission has been proposed but there are not many takers for that proposal. In the paper issued this month by the Lord Chancellor's Department on judicial appointments, the Lord Chancellor has said, "I want every vacancy on the Bench to be filled by the best person available. Appointments must and will be made on merit, irrespective of ethnic origin, gender, marital status, political affiliation, sexual orientation, religion or disability. These are not mere words. They are firm principles. I will not tolerate any form of discrimination."

At present, there are hardly any persons from the ethnic minorities manning the higher judiciary and so far not a single woman has

made it to the House of Lords. The most significant part of the Lord Chancellor's paper is the requirement that "allegations of professional misconduct made in the course of consultations about a candidate for judicial office must be specific and subject to disclosure to the candidate". This should go a long way in ensuring that principles of natural justice and fair play are not jettisoned in the appointment process, which is not an uncommon phenomenon.

91. According to the passage, there has been a demand for a National Judicial Commission to
 - (a) clear the backlog of court cases.
 - (b) make judiciary see eye to eye with executive.
 - (c) wipe out corruption at the highest places.
 - (d) make the appointment process of judges more broad based and clear.
92. The role and procedure of the National Commission must be spelt out clearly
 - (a) because executive wing will depend on it heavily.
 - (b) because judges will take judicial decisions on the basis of it.
 - (c) it will be represented by a cross-section of the society.
 - (d) None of these
93. What, according to the author, is the typical characteristic of an independent democratic country?
 - (a) Objective process of judicial appointments.
 - (b) Supreme Court's advisory opinion on legal matters.
 - (c) Responsible, free and fair judiciary.
 - (d) Lively and frank debate in the society on the role of judiciary.
94. Which of the following forms part of what the Lord Chancellor has said?
 - (a) Appointments to judicial posts must take into consideration the aspirations of the weaker sections of the society.
 - (b) Vacancies in the judiciary must not remain unfilled.
 - (c) Merit should be the sole criterion for judicial appointments.
 - (d) Selective discrimination may be preached and also practised.
95. Which of the following according to the author is the most welcome thing?
 - (a) The negligible role to be played by the executive in the appointment of judges.
 - (b) Coordinating role played by the executive in the appointment of judges.
 - (c) The appointment of judges from the ethnic minority classes.
 - (d) Appointment of judges purely on the basis of merit.

PASSAGE-21

As airlines battle for the skies, it is the traveller who can take wing. It is market compulsion that has driven the three major players in Indian civil aviation to slash their fares by almost half under the newly-introduced apex or advance purchase fare scheme, but for arguably the first time since the privatisation of the industry it is the travelling public that stands to gain the most. The potential spin-offs of this are tremendous and go beyond bringing some much needed buoyancy back to a sector that has been performing

sluggishly since the effects of 9/11 and the travel advisories issued by various western embassies and high commissions kicked in. The move will certainly change the traditional profile of the air passenger, expand business and travel opportunities for those who could not afford to fly earlier and increase, in some measure, connectivity throughout the country.

Such attempts at restructuring fares are, of course, not new. In the West, fierce competition and the unremitting drive to push up passenger volumes have led to remarkable ticketing innovations. The apex fare scheme, for instance, works for both the consumer and the airline. While it makes travel affordable for one, it helps the other rationalise its operations and ensure that its seats go full. There have been other interesting variations on this theme too, as for instance the idea of the budget airline. It was reported recently that no-frills airlines like Easy Jet and Go-Fly are transforming the aviation industry in the UK by increasing passenger volumes drastically. Well, we have not quite got to that stage as yet, but India—given its size and requirements—would certainly benefit from the expansion of this vital link industry because flying is no longer a luxury, it has become a necessity.

There are questions, of course, of the impact this price war will have on the industry and whether predatory pricing practices could end up clipping the wings of one player or the other. In many ways these are early days yet and it will take some time before a clearer picture of the efficacy of such measures emerges. For the moment, however, it is celebration time for the consumer. Of course, as we tighten our seatbelts and take off, we also hope that such cost-cutting is not at the expense of factors like adequate facilities and, most important, safety.

96. Which of the following is one of the reasons for aviation sector performing sluggishly recently?

- (a) Stiff competition among the players
- (b) Warning against travel issued by some embassies
- (c) High price of travel
- (d) Lack of adequate facilities

97. "... as we tighten our seat-belts and take off ..." What does this signify in the context of the passage?

- (a) When we start using aviation services.
- (b) As we stretch our pockets to avail air services.
- (c) There would be a decline in the facilities.
- (d) When we board the plane, we have to tighten seatbelt before take-off.

98. Which of the following is not true in the context of the passage?

- (a) The reduction in price has been triggered by sluggish performance and competition.
- (b) In the west, competition had led to evolving new and effective schemes of fare.
- (c) The customer had so far not enjoyed the major benefits of privatisation ever since, it was done in this sector.
- (d) More modern type of passengers will avail these travel opportunities.

99. Which of the following can be the major picture of the apex fare as inferred from the passage?

- (a) Air tickets on some sectors where the seats go vacant will be lower.
- (b) The fare on tickets purchased in advance should have benefits.

- (c) Those who have not travelled by air prefer travelling at cheaper rates.
- (d) During the sluggish period travelling by aeroplane is cheaper.

100. Which of the following may be the result of price-cutting?

- (a) Some players would start operating in this scheme.
- (b) Airlines will provide better facilities to the customer.
- (c) Some existing players may have to stop operation.
- (d) None of these

PASSAGE-22

Ecosystems provide people with a variety of goods and services; food, clean water, clean air, flood control, soil stabilization, pollination, climate regulation, spiritual fulfilment and aesthetic enjoyment, to name just a few. Most of these benefits either are irreplaceable or the technology necessary to replace them is prohibitively expensive. For example, potable fresh water can be provided by desalinating sea-water, but only at great cost.

The rapidly expanding human population has greatly modified the Earth's ecosystems to meet their increased requirements of some of the goods and services, particularly food, fresh water, timber, fibre and fuel. These modifications have contributed substantially to human well being and economic development. The benefits have not been equally distributed. Some people have actually been harmed by these changes. Moreover, short-term increases in some ecosystem goods and services have come at the cost of the long-term degradation of others. For example, efforts to increase the production of food and fibre have decreased the ability of some ecosystems to provide clean water, regulate flooding and support biodiversity.

101. With reference to the passage, consider the following statements.

Expanding human population has an adverse effect on :

1. Spiritual fulfilment
2. Aesthetic enjoyment
3. Potable fresh water
4. Production of food and fibre
5. Biodiversity

Which of the statements given above are correct ?

- (a) 1, 2 and 3
- (b) 2, 4 and 5
- (c) 3 and 5
- (d) 1, 2, 3, 4 and 5

102. The passage mentions that "some people have actually been harmed by these changes". What does it imply ?

1. The rapid expansion of population has adversely affected some people:
2. Sufficient efforts have not been made to increase the production of food and fibre.
3. In the short term some people may be harmed, but in the long term everyone will benefit from modifications in the Earth's ecosystems.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2
- (c) 1 and 3
- (d) None of the statements given above

PASSAGE-23

A species that exerts an influence out of proportion to its abundance in an ecosystem is called a keystone species. The keystone species may influence both the species richness of communities and the flow of energy and materials through ecosystems. The sea star *Pisaster ochraceus*, which lives in rocky intertidal ecosystems on the Pacific coast of North America, is also an example of a keystone species. Its preferred prey is the mussel *Mytilus californianus*. In the absence of sea stars, these mussels crowd out other competitors in a broad belt of the intertidal zone. By consuming mussels, sea star creates bare spaces that are taken over by a variety of other species.

A study at the University of Washington demonstrated the influence of Pisaster on species richness by removing sea stars from selected parts of the intertidal zone repeatedly over a period of five years. Two major changes occurred in the areas from which sea stars were removed. First, the lower edge of the mussel bed extended farther down into the intertidal zone, showing that sea stars are able to eliminate mussels completely where they are covered with water most of the time. Second, and more dramatically, 28 species of animals and algae disappeared from the sea star removal zone. Eventually only *Mytilus*, the dominant competitor, occupied the entire substratum. Through its effect on competitive relationships, predation by Pisaster largely determines which species live in these rocky intertidal ecosystems.

- 104.** What is the crux of the passage ?

 - (a) Sea star has a preferred prey.
 - (b) A preferred prey determines the survival of a keystone species.
 - (c) Keystone species ensures species diversity.
 - (d) Sea star is the only keystone species on the Pacific coast of North America.

- 105.** With reference to the passage, consider the following statements :

1. Mussels are generally the dominant species in intertidal ecosystems.
 2. The survival of sea stars is generally determined by the abundance of mussels.

Which of the statements given above is/are correct?

- 106.** Which of the following is/are implied by the passage?

 1. Mussels are always hard competitors for sea stars.
 2. Sea stars of the Pacific coast have reached the climax of their evolution.

3. Sea stars constitute an important component in the energy flow in intertidal ecosystem.

Which of the statements given above is/are correct?

- 107.** Consider the following assumptions:

PASSAGE-24

Invasions of exotic species into new geographic areas sometimes occur naturally and without human agency. However, human actions have increased this trickle to a flood. Human-caused introductions may occur either accidentally as a consequence of human transport, or intentionally but illegally to serve some private purpose or legitimately to procure some hoped-for public benefit by bringing a pest under control, producing new agricultural products or providing novel recreational opportunities. Many introduced species are assimilated into communities without much obvious effect. However, some have been responsible for dramatic changes to native species and natural communities. For example, the accidental introduction of the brown tree snake *Boiga irregularis* into Guam, an island in the Pacific, has through nest predation reduced 10 endemic forest bird species to the point of extinction.

One of the major reasons for the world's great biodiversity is the occurrence of centers of endemism so that similar habitats in different parts of the world are occupied by different groups of species that happen to have evolved there. If every species naturally had access to everywhere on the globe, we might expect a relatively small number of successful species to become dominant in each biome. The extent to which this homogenization can happen naturally is restricted by the limited powers of dispersal of most species in the face of the physical barriers that exist to dispersal. By virtue of the transport opportunities offered by humans, these barriers have been breached by an ever-increasing number of exotic species. The effects of introductions have been to convert a hugely diverse range of local community compositions into something much more homogeneous.

It would be wrong, however, to conclude that introducing species to a region will inevitably cause a decline in species richness there. For example, there are numerous species of plants, invertebrates and vertebrates found in continental Europe but absent from the British Isles (many because they have so far failed to recolonize after the last glaciations). Their introduction would be likely to augment British biodiversity. The significant detrimental effect noted above arises where aggressive species provide a novel challenge to endemic biotas ill-equipped to deal with them.

- 108.** With reference to the passage, which of the following statements is correct?
- Introduction of exotic species into new geographical areas always leads to reduced biodiversity.
 - Exotic species introduced by man into new areas have always greatly altered the native ecosystems.
 - Man is the only reason to convert a hugely diverse range of local community compositions into more homogeneous ones.
 - None of the statements (a), (b) and (c) is correct in this context.

- 109.** Why does man introduce exotic species into new geographical areas?

- To breed exotic species with local varieties.
- To increase agricultural productivity.
- For beautification and landscaping.

Which of the above statements is/are correct?

- 1 only
- 2 and 3
- 1 and 3
- 1, 2 and 3

- 110.** How is homogenization prevented under natural conditions?

- Evolution of groups of species specific to local habitats.
- Presence of oceans and mountain ranges.
- Strong adaptation of groups of species to local physical and climatic conditions.
- All the statements (a), (b) and (c) given above are correct in this context.

- 111.** How have the human beings influenced the biodiversity?

- By smuggling live organisms.
- By building highways.
- By making ecosystems sensitive so that new species are not allowed.
- By ensuring that new species do not have major impact on local species.

Which of the statements given above are correct?

- 1 and 2
- 2 and 3
- 1 and 3
- 2 and 4

- 112.** What can be the impact of invasion of exotic species on an ecosystem?

- Erosion of endemic species.
- Change in the species composition of the community of the ecosystem.

Select the correct answer using the codes given below:

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 nor 2

PASSAGE-25

Chemical pesticides lose their role in sustainable agriculture if the pests evolve resistance. The evolution of pesticide resistance is simply natural selection in action. It is almost certain to occur when vast numbers of a genetically variable population are killed. One or a few individuals may be unusually resistant (perhaps because they possess an enzyme that can detoxify the pesticide). If the pesticide is applied repeatedly, each successive generation of the pest will contain a larger proportion of resistant individuals. Pests typically have a high intrinsic rate of reproduction, and so a few individuals in one generation may give rise to hundreds or thousands in the next, and resistance spreads very rapidly in a population.

This problem was often ignored in the past, even though the first case of DDT (dichlorodiphenyltrichloroethane) resistance was reported as early as 1946. There is exponential increase in the numbers of invertebrates that have evolved resistance and in the number of pesticides against which resistance has evolved. Resistance has been recorded in every family of arthropod pests (including dipterans such as mosquitoes and house flies, as well as beetles, moths, wasps, fleas, lice and mites) as well as in weeds and plant pathogens. Take the Alabama leaf-worm, a moth pest of cotton, as an example. It has developed resistance in one or more regions of the world to aldrin, DDT, dieldrin, endrin, lindane and toxaphene.

If chemical pesticides brought nothing but problems, — if their use was intrinsically and acutely unsustainable — then they would already have fallen out of widespread use. This has not happened. Instead, their rate of production has increased rapidly. The ratio of cost to benefit for the individual agricultural producer has remained in favour of pesticide use. In the USA, insecticides have been estimated to benefit the agricultural products to the tune of around \$5 for every \$1 spent.

Moreover, in many poorer countries, the prospect of imminent mass starvation, or of an epidemic disease, are so frightening that the social and health costs of using pesticides have to be ignored. In general the use of pesticides is justified by objective measures such as ‘lives saved’, ‘economic efficiency of food production’ and ‘total food produced’. In these very fundamental senses, their use may be described as sustainable. In practice, sustainability depends on continually developing new pesticides that keep at least one step ahead of the pests – pesticides that are less persistent, biodegradable and more accurately targeted all the pests.

- 113.** “The evolution of pesticide resistance is natural selection in action.” What does it actually imply?

- It is very natural for many organisms to have pesticide resistance.
- Pesticide resistance among organisms is a universal phenomenon.
- Some individuals in any given population show resistance after the application of pesticides.
- None of the statements (a), (b) and (c) given above is correct.

- 114.** With reference to the passage, consider the following statements:

- Use of chemical pesticides has become imperative in all the poor countries of the world.
- Chemical pesticides should not have any role in sustainable agriculture.
- One pest can develop resistance to many pesticides.

Which of the statements given above is/are correct?

- 1 and 2
- 3 only
- 1 and 3
- 1, 2 and 3

- 115.** Though the problems associated with the use of chemical pesticides is known for a long time, their widespread use has not waned. Why?

- Alternatives to chemical pesticides do not exist at all.
- New pesticides are not invented at all.
- Pesticides are biodegradable.
- None of the statements (a), (b) and (c) given above is correct.

- 116.** How do pesticides act as agents for the selection of resistant individuals in any pest population?

1. It is possible that in a pest population the individuals will behave differently due to their genetic makeup.
 2. Pests do possess the ability to detoxify the pesticides.
 3. Evolution of pesticide resistance is equally distributed in pest population.

Which of the statements given above is/are correct?

- 117.** Why is the use of chemical pesticides generally justified by giving the examples of poor and developing countries?

- (1) Developed countries can afford to do away with use of pesticides by adapting to organic farming, but it is imperative for poor and developing countries to use chemical pesticides.
 - (2) In poor and developing countries, the pesticide addresses the problem of epidemic diseases of crops and eases the food problem.
 - (3) The social and health costs of pesticide use are generally ignored in poor and developing countries.

Which of the statements given above is/are correct?

118. What does the passage imply?

- What does the passage imply?

 - (a) Alternative options to chemical pesticides should be promoted.
 - (b) Too much use of chemicals is not good for the ecosystem.
 - (c) There is no scope for the improvement of pesticides and making their use sustainable.
 - (d) Both the statements (a) and (b) above are correct.

PASSAGE-26

Governments have traditionally equated economic progress with steel mills and cement factories. While urban centres thrive and city dwellers get rich, hundreds of millions of farmers remain mired in poverty. However, fears of food shortages, a rethinking of antipoverty priorities and the crushing recession in 2008 are causing a dramatic shift in world economic policy in favour of greater support for agriculture.

The last time when the world's farmers felt such love was in the 1970s. At that time, as food prices spiked, there was real concern that the world was facing a crisis in which the planet was simply unable to produce enough grain and meat for an expanding population. Governments across the developing world and international aid organizations plowed investment into agriculture in the early 1970s, while technological breakthroughs, like high-yield strains of important food crops, boosted production. The result was the Green Revolution and food production exploded. But the Green Revolution became a victim of its own success. Food prices plunged by some 60% by the late 1980s from their peak in the mid-1970s. Policymakers and aid workers turned their attention to the poor's other pressing needs, such as health care and education. Farming get starved of resources and investment. By 2004, aid directed at agriculture sank to 3.5% and "Agriculture

lost its glitter". Also, as consumers in high-growth giants such as China and India became wealthier, they began eating more meat, so grain once used for human consumption got diverted to beef up livestock. By early 2008, panicked buying by importing countries and restrictions slapped on grain exports by some big producers helped drive prices upto heights not seen for three decades. Making matters worse, land and resources got reallocated to produce cash crops such as biofuels and the result was that voluminous reserves of grain evaporated. Protests broke out across the emerging world and fierce food riots toppled governments. This spurred global leaders into action. This made them aware that food security is one of the fundamental issues in the world that has to be dealt with in order to maintain administrative and political stability. This also spurred the US which traditionally provisioned food aid from American grain surpluses to help needy nations, to move towards investing in farm sectors around the globe to boost productivity. This move helped countries become more productive for themselves and be in a better position to feed their own people. Africa, which missed out on the first Green Revolution due to poor policy and limited resources, also witnessed a 'change'. Swayed by the success of East Asia, the primary poverty-fighting method favoured by many policymakers in Africa was to get farmers off their farms and into modern jobs in factories and urban centres. But that strategy proved to be highly insufficient. Income levels in the countryside badly trailed those in cities while the FAO estimated that the number of poor going hungry in 2009 reached an all time high at more than one billion. In India on the other hand, with only 40% of its farmland irrigated, entire economic boom currently underway is held hostage by the unpredictable monsoon. With much of India's farming areas suffering from drought this year, the government will have a tough time meeting its economic growth targets. In a report, Goldman Sachs predicted that if this year too receives weak rains, it could cause agriculture to contract by 2% this fiscal year, making the government's 7% GDP growth target look "a bit rich". Another Green Revolution is the need of the hour and to make it a reality, the global community still has much backbreaking farm work to do.

119. What is the author's main objective in writing the passage?

 - (a) Criticising developed countries for not bolstering economic growth in poor nations
 - (b) Analysing the disadvantages of the Green Revolution
 - (c) Persuading experts that a strong economy depends on industrialization and not agriculture
 - (d) Making a case for the international society to engineer a second Green Revolution

120. What impact did the economic recession of 2008 have on agriculture?

 - (a) Governments equated economic stability with industrial development and shifted away from agriculture
 - (b) Lack of implementation of several innovative agriculture programmes owing to shortage of funds
 - (c) It prompted increased investment and interest in agriculture
 - (d) The GDP as targeted by India was never achieved because of losses in agriculture

PASSAGE-27

Delays of several months in National Rural Employment Guarantee Scheme (NREGS) wage payments and worksites where labourers have lost all hope of being paid at all have become the norm in many states. How are workers who exist on the margins of subsistence supposed to feed their families? Under the scheme, workers must be paid within 15 days, failing which they are entitled to compensation under the Payment of Wages Act upto ₹ 3000 per aggrieved worker. In reality, compensation is received in only a few isolated instances. It is often argued by officials that the main reason for the delay is the inability of banks and post offices to handle mass payments of NREGS wages. Though there is a grain of truth, in this, as a diagnosis it is misleading. The 'jam' in the banking system has been the result of the hasty switch to bank payments imposed by the Central Government against the recommendation of the Central Employment Guarantee Council which advocated a gradual transition starting with villages relatively close to the nearest bank.

However delays are not confined solely to the banking system. Operational hurdles include implementing agencies taking more than fifteen days to issue payment orders, viewing of work measurement as a cumbersome process resulting in procrastination by the engineering staff and non-maintenance of muster rolls and job cards etc. But behind these delays lies a deeper and deliberate 'backlash' against the NREGS. With bank payments making it much harder to embezzle NREGS funds, the programme is seen as a

headache by many government functionaries—the workload has remained without the 'inducements'. Slowing down wage payments is a convenient way of sabotaging the scheme because workers will desert NREGS work sites.

The common sense solution advocated by the Government is to adopt the business correspondent model wherein bank agents will go to villages to make cash payments and duly record them on handheld electronic devices. This solution is based on the wrong diagnosis that distance separating villages from banks is the main issue. In order to accelerate payments, clear timeliness for every step of the payment process should be incorporated into the system as Programme Officers often have no data on delays and cannot exert due pressure to remedy the situation. Workers are both clueless and powerless with no provision for them to air their grievances and seek redress. In drought affected areas, the system of piece rate work can be dispensed with, where work measurement is not completed within a week and wages may be paid on the basis of attendance. Buffer funds can be provided to Gram Panchayats and post offices to avoid bottlenecks in the flow of funds. Partial advances could also be considered provided-wage payments are meticulously tracked. But failure to recognise problems and unwillingness to remedy them will remain major threats to the NREGS.

- 124.** Which of the following factors has not been responsible for untimely payment of NREGS wages?

 - Communication delays between agencies implementing the scheme
 - Improper record keeping
 - Behind schedule release of payments by banks
 - Drought conditions prevalent in the country

125. According to the passage, which of the following has/have been the consequence(s) of delayed wage payments?

 - Compensation to victimised workers has amounted to crores.
 - Banks will no longer be entrusted with remitting wages.
 - Regulations to ensure punctual wage payments have come into force.

(a) None	(b) 1 only
(c) 1 and 3	(d) 1 and 2

126. Which of the following is not true in the context of the passage?

 - Workers are reluctant to open bank accounts as branches are not conveniently located.
 - Local officials often delay wage payments in drought prone areas to benefit workers.
 - The Government has not implemented every recommendation of the Central Employment Guarantee Council.

(a) 2 only	(b) 1 and 2
(c) 2 and 3	(d) All 1, 2 and 3

127. What solution has the author suggested to expedite NREGS wage payments?

 - Empower the Central Employment Guarantee Council to monitor the NREGS
 - Implement payment of wages in cash at all worksites
 - Restrict the amount of funds to local government bodies in order to curb frauds
 - Provide attendance records to workers so they have proof to claim their wages

- 128.** What is the author's view about the government's solution to the problem of delayed wage payments?
- He agrees with it as workers will not have to bear the expense of travelling long distances to claim their wages
 - He is not in favour of it as funds can be misappropriated by agents
 - He welcomes it as the time consuming work measurement process will be done away with
 - He feels it does not address the core issues plaguing the scheme

PASSAGE-28

Rural India faces serious shortages-power, water, health facilities, roads, etc, these are known and recognized. However, the role of technology in solving these and other problems is barely acknowledged and the actual availability of technology in rural areas is marginal. The backbone of the rural economy is agriculture, which also provides sustenance to over half the country's population. The 'green revolution' of the 1970s was, in fact, powered by the scientific work in various agricultural research institutions. While some fault the green revolution for excessive exploitation of water and land resources through overuse of fertilizers, it did bring about a wheat surplus and prosperity in certain pockets of the country.

In rural India today, there is a dire inadequacy of both science (ie, knowledge) and technology (which derives from science and manifests itself in physical form). The scope to apply technology to both farm and non-farm activities in rural areas is huge, as are the potential benefits. In fact, crop yields are far lower than what they are in demonstration farms, where science and technology are more fully applied. Technologies that reduce power consumption of pumps are vital, unfortunately, their use is minimal, since agricultural power is free or largely subsidized. Similarly, there is little incentive to optimise through technology or otherwise-water use, especially in irrigated areas (a third of total arable land), given the water rates, Post-harvest technologies for processing and adding value could greatly enhance rural employment and incomes but at present deployment of technology is marginal. Cold storage and cold chains for transportation to market is of great importance for many agricultural products-particularly, fruits and vegetables, but are non-existent. These are clearly technologies with an immediate return on investment, and benefits for all, the farmer, the end-consumer, the technology provider.

However, regulatory and structural barriers are holding back investments.

Power is a key requirement in rural areas, for agricultural as well as domestic uses. Technology can provide reliable power at comparatively low cost in a decentralized manner. However, this needs to be upgraded and scaled in a big way, with emphasis on renewable and non-polluting technologies. Reliable and low cost means of transporting goods and people is an essential need for rural areas. The bullock-cart and the tractor-trailer are present vehicles of choice. Surely, technology can provide a better, cheaper and more efficient solution? Information related to commodity prices, agricultural practices, weather, etc, are crucial for the farmer. Technology can provide these through mobile

phones, which is a proven technology however, the challenge to ensure connectivity remains. Thus, there is a pressing need for technology as currently economic growth-though skewed and iniquitous-has created an economically attractive market in rural India.

- 129.** According to the author, which of the following is/are the problem/s facing India's rural population?
- Unavailability of healthcare facilities.
 - The technological advancements which have been borrowed from abroad have not been suitably adapted to the Indian scenario.
 - Lack of awareness about the importance of utilising technology in the agricultural sector.
- 1 only
 - 3 only
 - Both 1 and 2
 - Both 1 and 3
- 130.** Why is there no motivation to reduce power consumption?
- Freely available sources of energy
 - Government will have to subsidise the cost of technology required to reduce power consumption.
 - Power distribution has been decentralized
 - None of the above
- 131.** What effect will the implementation of post harvest technologies such as cold storages have?
- Regulatory procedures will have to be more stringent.
 - Prices of commodities like fruits and vegetables will fall since there is no wastage from spoilage
 - Incomes of rural population will fall
 - Pollution of the environment
- 132.** Which of the following is NOT true in the context of the passage?
- In recent times, the benefits of science and technology have not been felt in agriculture.
 - The current means of rural transportation are ideal ie, low cost and non-polluting.
 - Agriculture provides livelihood to over 50 per cent of the Indian population.
- Both 1 and 2
 - 2 only
 - 3 only
 - Both 1 and 3
- 133.** What is the role of mobile technology in the rural economy?
- It will not play a large role since the technology is largely untested.
 - It provides opportunities for farmers manipulate commodity prices.
 - It will largely be beneficial since such technology is cheap.
- Both 1 and 3
 - 1 only
 - Both 2 and 3
 - 2 only

PASSAGE-29

Modern bio-technology, especially the creation of genetically modified crops, is often presented as a magic solution or universal panacea for the problems of poverty, inadequate nutrition and even environmental degradation across the world. Conversely, there are people who present the picture of tech-generated monsters and major human health hazards being created by science. Many of the technological changes currently in the process of being utilised in agriculture can have unforeseen consequences, and their safety and future viability are far from secure.

The reality, as always, is far more complex than either of these two extremes. Even today the total food production in the world is adequate to feed the hungry of the world; the problem is rather one of unequal distribution, which deprives a large part of the population of even their minimal nutritional requirements. Similarly farmers, especially in developing countries, face many problems such as lack of infrastructure, poor or unstable market access, volatile input and output prices, etc. that bio-technology does not address, much less solve.

It is true that transgenic plants can offer a range of benefits which are above and beyond those which emerged from more traditional innovations in cultivation. It is suggested that such new technology offers more effective pest resistance of seeds and crops through genetic control mechanisms, which also reduces the need for pesticide use and leads to improved yield. A basic question, of course, is whether the new GM technology is safe, and whether this is absolutely crucial since the effects may only be known much later. The jury is still very much out on this matter, and the controversy does not appear to be resolved quickly. The trouble is that most governments in developing countries have relatively low food and beverage regulatory standards, and public systems for monitoring and surveillance of such items are poor or non-existent. This leaves them open to entry and even dumping of a range of agricultural products of the new technology, which may not pass regulatory standards in the more developed countries.

134. Which of the following is true in context of the passage?

- (a) Genetically modified crops have been universally recognised as a solution to poverty and environmental degradation.
- (b) The only way to improve the deficit in food requirement and food production in the world is by adapting genetically modified crops.
- (c) Genetically modified crops produce more yield as compared to yield from the traditional methods
- (d) Taking advantage of absence of regulatory standards, scientists have been dumping new products in the markets without appropriate approval

135. Why according to the author, is genetic modification of crops not an answer to the problem of hunger in the world?

1. People being highly doubtful of the long term effects of genetically modified crops, do not buy the products grown by such methods.
 2. The problem of hunger in the world is not due to inadequate production of food but due to unequal distribution of it.
 3. Many developing countries have banned genetically modified products as developed countries have been using these countries as dumping grounds for new genetically modified products.
- (a) 1 only
 - (b) 2 only
 - (c) Both 2 and 3
 - (d) Both 1 and 3

136. The author of the given passage seems to be definitely

- (a) Suggesting the use of traditional methods of agriculture as against bio-technology by developing countries owing to their poor regulatory standards.
- (b) in favour of utilising bio-technology as a tool for alleviation of poverty from the world.

- (c) urging the policy makers to improve infrastructural facilities so that farmers can maximise the benefits of genetically modified crops.
- (d) Unconvinced of the long term effects and rationale for immediate requirement of genetically modified products.

PASSAGE-30

There are various sectors in India that are to be assessed for their Y strengths, weaknesses, opportunities and threats.

The total population in over 1 billion which will increase to 1.46 billion by 2035 to cross China. The huge population will result in higher unemployment and deterioration of quality. Literacy in India is yet another factor to be discussed. According to 1991 census, 64.8% of the population was illiterate. The major downturn of education is due to child labour which has spread all over India and this should be totally eradicated by way of surveillance and a good educational system implemented properly by the Government.

Pollution is one more threat to the environment and for the country's prospects. This has been experienced more in urban areas mainly in metropolitan cities. The water pollution by the sewage seepage into the ground water and improper maintenance will lead to various diseases which in turn will affect the next generation. In most of the cities there is no proper sewage disposal. The Government has to take effective steps to control population which, in turn, will minimize the pollution.

Poverty questions the entire strength of India's political view and minimizes the energetic way of approach. The shortfall of rains, enormous floods, unexpected famine, drought, earthquake and the recent tsunami hit the country in a negative way. The proactive approach through effective research and analytical study helps us to determine the effects in advance. Proper allocation of funds is a prerequisite. In developed countries like U.S., Japan precautionary methods are adopted to overcome this, but it has to be improved a lot in our systems.

Increased population is one of the major reasons for poverty and the government is unable to allocate funds for basic needs to the society. India has nearly 400 million people living below the poverty line and 90% of active population is in informal economy. The children are forced to work due to their poverty and differential caste system. They work in match industry for daily wages, as servants, mechanics, stone breakers, agricultural workers, etc. To prevent child labour, existing laws which favour the Anti Child Labour Act should be implemented by the Government vigorously. More population results in cheap cost by virtue of the demand supply concept. Most of the foreign countries try to utilize this factor by outsourcing their business in India with a very low capital. According to U.S., India is a "Knowledge Pool" with cheap labour. The major advantage is our communication and technical skill which is adaptable to any environment. The cutting edge skill in IT of our professionals helps the outsourcing companies to commensurate with the needs of the consumers in a short span. The major competitors for India are China and Philippines and by the way of an effective communication and expert technical ability, Indians are ahead of the race. The major metropolitan state's are targeting the outsourcing field vigorously by giving various amenities to the outsourcing companies like tax concession,

allotting land etc., to start their businesses in its cities without any hurdles. Thereby most of the MNCs prefer India as their destinations and capitalize the resources to maximize their assets. Infrastructure is another key factor for an outsourcing company to start a business in a particular city. It includes road, rail, ports, power and water. The increased input in infrastructure in India is very limited where China's record is excellent.

India in earlier days gave more importance to the development of industry and less importance to other departments. But the scenario has quite changed now-a-days by allocating a special budget of funds for security. This is because of the frightening increase in terrorism all around the world especially emerging after the 9/11 terror attack in U.S. In the last ten years, budget towards the development of military forces is higher when compared to others. It shows that the threat from our neighbouring countries is escalating. India has to concentrate more on this security factor to wipe out the problem in the way of cross-border terrorism.

Making India, a developed country in 2020 is not an easy task. India has to keep in check a variety of factors in order to progress rapidly. To quote China as an example is that they demolished an old building to construct a very big port to meet future demands, but India is still waiting for things to happen. The profits gained by India through various sectors are to be spent for the development and welfare of the country. India's vision for a brighter path will come true not only by mere words or speech, but extra efforts needed at all levels to overcome the pitfalls.

- 138.** Why, according to the author, has the Indian Government allotted more funds to strengthen the military forces?

 - (a) To improve security in order to counter increasing terrorism
 - (b) As the 'security in India over the past ten years was grossly inadequate
 - (c) As the US too has strengthened its military forces after the 9/11 attack
 - (d) As the industry is developed enough and is not in need of any more funds

- 140.** Which of the following is/are true in the context of the passage?

 1. India leads the way in the amount invested in the development of infrastructure.
 2. Political system in India is not influenced by poverty.
 3. Indian population would increase by approximately 50 percent in the next twenty five years.

- 141.** Which of the following is/are the facility (ies) available to MNCs investing in India ?.

1. Easy availability of land
 2. Better infrastructure than China

- 142.** Which of the following, according to the author, is a result of poverty in India?

- (a) Lack of a robust security system
 - (b) Child labour and the resulting dearth of education youth
 - (c) Floods, famines and other calamities
 - (d) Rapid increase in population

- 143.** How, according to the author, can the effects of floods, famines, droughts, etc, be minimized?

- (a) By limiting pollution thereby reducing the chances of such events taking place.
 - (b) By educating the children about the ill effects of such calamities who in turn will help during the time of need.
 - (c) By following the U.S. system of providing relief to its citizens.
 - (d) By allotting proper funds for research which can predict the outcome of such calamities and thus design relief measures.

PASSAGE-31

A few weeks ago, a newspaper article quoted a well known scientist saying, "IT has destroyed Indian science". One can speculate about the various ways in which the growth of the IT sector and other similar knowledge industries such as biotechnology has lead to a decline in basic scientific research in India.

The most obvious reason is money; pay scales in IT and BT are much higher than one can aspire to in academia. The argument goes: why should a bright B. Tech. or M.Sc. student enroll in a Ph.D. programme when she can make a lot more money writing code? Not only does a fresh IT employee make a lot more than a fresh M.Tech. student, her pay will rise much faster in IT than in academia. A professor's pay at a government-run university, even after the Sixth Pay Commission, tops out at far less than a senior executive's salary in a major industry.

Second, the social status of IT and BT jobs equal or even exceed the social status of corresponding academic positions, since they are seen as knowledge industries, which plays to the best and worst instincts of the societal order. As quintessential white collar professions, neither do they compel a successful entrepreneur to resort to violence and corruption, nor do they demand any physical labour. Unlike real estate or road construction, it is felt that IT workers can become rich while staying honest and sweat-free.

Assuming that the labour pool for academia and IT is roughly the same, the difference in our collective preferences biases the labour market towards IT and away from academia. Further, when the imbalance between IT and academia continues for years and even decades, a destructive loop, from academia's point of view, is created. When our best and brightest take IT jobs over academic ones for a decade or more, faculty positions in our universities

and research centres are no longer filled by the best candidates. As faculty quality goes down, so does the capacity to train top-class graduate students who, after all, are teachers in training. In response to decreasing faculty quality, even those students who would otherwise choose an academic profession, decide to join industry or go abroad for their studies. These foreign trained graduates prefer to come back to corporate India—if at all they do come back and the downward cycle replicates itself in each generation. In other words, academia is trapped within a perfect storm created by a combination of social and economic factors. In this socio-economic calculus, the members of our societal classes should prefer an IT job to an academic one. Or, to put it another way, the knowledge economy, ie, the creation of knowledge for profit, trumps the knowledge society, ie, the creation of knowledge for its own sake or the sake of the greater good. As is said, "knowledge is power, but money is even more power." Perhaps the scientist was alluding to this victory of capitalism over the pursuit of pure knowledge when he accused IT of having a negative influence on Indian science.

Surely, knowledge has become a commodity like any other and as a result, knowledge workers are like any other labourers, who will sell their wares to the highest bidder. One solution is to accept and even encourage the commoditization of knowledge; if so, Indian universities and research centres should copy their western counterparts by becoming more and more like corporations. These centres of learning should convert themselves into engines of growth. In this logic, if we increase academic salaries and research grants to match IT paycheques we will attract good people into academia, where, in any case, it is rumoured that a certain elusive feeling called "the quality of life" is better.

144. According to the passage, what did the scientist actually mean when he said, "IT has destroyed Indian Science"?

- (a) The centres meant for Scientific research are being utilized by IT industries.
- (b) The IT industry does not employ people pursuing higher studies.
- (c) As information is readily available on the internet because of IT, there is no need to seek further information.
- (d) The desire for money has overshadowed the search for knowledge.

145. Why does the author say that knowledge has become a commodity?

- (a) As it is no longer desirable in any professional field
- (b) As there are too many educational institutes in the country which do not provide quality education
- (c) As knowledge is now available easily as compared to the past
- (d) As knowledgeable people sell their services for the highest price possible

146. Which of the following mentioned below is/are the author's suggestion/s to promote interest in Indian academia?

- 1. Research centres should adopt the corporate culture as is done in the West.
 - 2. Lessening the number of research grants given.
 - 3. Making academic salaries equivalent to those paid in IT industries.
- | | |
|-------------|-------------|
| (a) 3 only | (b) 1 only |
| (c) 2 and 3 | (d) 1 and 2 |

147. Which of the following, according to the author, are factors responsible for the declining interest in scientific research?

- 1. Slower progress of work in research.
 - 2. Lesser monetary compensation in research related activities.
 - 3. Societal perception towards research.
- | | |
|-------------|-------------|
| (a) 1 only | (b) 3 only |
| (c) 2 and 3 | (d) 1 and 2 |

148. Which of the following is true about the perception towards IT jobs as given in the passage?

- 1. They are physically tiring.
 - 2. They are considered to be managerial level jobs.
 - 3. They required usage of dishonest means.
- | | |
|------------|-------------|
| (a) 2 only | (b) 1 and 2 |
| (c) 3 only | (d) 2 and 3 |

PASSAGE-32

Our current approach to solving global warming will not work. It is flawed economically, because carbon taxes will cost a fortune and do little, and it is flawed politically because negotiations to reduce carbon-dioxide emissions will become even more fraught and divisive. And even if you disagree on both counts, the current approach is also flawed technologically.

Many countries are now setting ambitious carbon cutting goals ahead of global negotiations. Let us imagine that the world ultimately agrees on an ambitious target. Say, we decide to reduce carbon-dioxide emissions by three-quarters by the year 2100 while maintaining reasonable growth. Herein lies the technological problem to meet this goal, non-carbon based sources of energy would have to be astounding 2.5 times greater in 2100 than that was in the year 2000.

These figures were calculated by economists of a foreign university. Their research shows that confronting global warming effectively requires nothing short of a technological revolution. We are not taking this challenge seriously. If we continue on our current path, technological development will be nowhere near significant enough to make non-carbon based energy sources competitive with fossil fuels on price and effectiveness.

Sadly, during the international negotiations, the focus is on how much carbon to cut, rather than on how to do so. Little or no consideration will be given to whether the means of cutting emissions are sufficient to achieve the goals. Politicians will base their decisions on global warming models that simply assume that technological break-throughs will happen by themselves. This faith is sadly and dangerously misplaced.

Economists examine the state of non-carbon based energy today—nuclear, wind, solar and geothermal and find that, taken together, alternative energy sources would get us less than halfway toward a path of stable carbon emissions by 2050, and only a tiny fraction of the way toward stabilization by 2100. We need many times more non-carbon based energy than is currently produced.

Yet the needed technology will not be ready in terms of scalability of stability. In many cases, there is still a need for the most basic research and development. We are not even close to getting this revolution started.

Current technology is so inefficient that to take just one example, if we were serious about wind power, we would have to blanket

most countries with wind turbines to generate enough energy for everybody, and we would still have the massive problem of storage: We don't know what to do when the wind does not blow.

Policy makers should abandon fraught carbon reduction negotiations and instead make agreements to invest in research and development to get this technology to the level where it needs to be.

149. Which of the following is suggested in the passage by which global warming can be reduced?

- (a) To make the approach towards global warming completely free from political intervention.
- (b) By making non-carbon based energy methods as efficient and cost effective as the fossil fuels.
- (c) To force every country to confine to stricter terms of carbon emissions.
- (d) To avoid international negotiation on carbon cuts until the technological research comes out with a scalable and stable solution.

150. Which of the following is not true in the context of the I given passage?

1. Non-carbon fuels are too expensive so they should not be used.
 2. Political ignorance is one of the main reasons behind the inappropriate approach to combat global warming.
 3. The generation of energy from non-carbon sources has to be increased for significant reduction in global warming.
- (a) 1 only
 - (b) 3 only
 - (c) 1 and 3
 - (d) Both 2 and 3

151. Why, according to the author, are the international negotiations barely a solution to the problem of global warming?

- (a) Many countries fail to confine to the carbon-cut norms as set in these negotiations.
- (b) These negotiations emphasise on the amount of carbon to be cut and not on the ways in which it can be done.
- (c) Recent research on the carbon-cut methods is overlooked by the politicians.
- (d) Such negotiations produce dominance of powerful countries over the others, thus hampering their industrial development.

152. Which challenge according to the author is not being taken seriously in the phrase "we are not taking this challenge seriously" as used in the passage?

1. Cutting the carbon emissions to a scale of 2.5 times in the next decade.
 2. The challenge of locating new fossil fuel reserves since the existing ones are depleting at a fast rate.
 3. To carry out technological innovations for developing non-carbon based energy resources.
- (a) 3 only
 - (b) Both 1 and 3
 - (c) 2 only
 - (d) Both 1 and 2

153. Which of the following is true in the context of the passage?

- (a) Many countries are refraining from taking part in global negotiations to check global warming.
- (b) There has been no improvement in carbon emissions world over..

- (c) Technological advancement through research is the need of the hour in order to meet the directed goal of combating global warming.
- (d) Most countries in the world are well equipped to produce sufficient non-carbon based energy sources.

PASSAGE-33

When wealth came into existence, a moral structure was made around money. The Puritan legacy inhibited luxury and self-indulgence. Thoughtful people spread a practical gospel that emphasized hard work, temperance and frugality and the result was quite remarkable.

The world has been affluent since its founding. But it was, by and large, not corrupted by wealth. For centuries, it remained industrious, ambitious and frugal. Over the past 30 yr, much of that has been shredded. The social norms and institutions that encouraged frugality and spending what you earn have been undermined. The institutions that encourage debt and living for the moment have been strengthened. The moral guardians are forever looking for decadence out of movies and reality shows. But the most rampant decadence today is financial decadence, the trampling of, decent norms about how to use and harness money. The deterioration of financial traditions has meant two things. First, it has meant an explosion of debt that inhibits social mobility and ruins lives. Second, the transformation has led to a stark financial polarization. On one hand, there is what is called an investor class. It has tax-deferred savings plans, as well as an army of financial advisers. On the other hand, there is the lottery class, people with little access to financial planning but plenty of access to payday lenders, credit cards and lottery agents.

The loosening of financial inhibition has meant more options for the well-educated but more temptation and chaos for the most vulnerable. Social norms, the invisible threads that guide behaviour, have deteriorated. Over the past years, people have been more socially conscious about protecting the environment and inhaling tobacco. They have become less socially conscious about money and debt.

The agents of destruction are many and State governments have also played a role. They hawk their lottery products with aggression, which some people call a tax on stupidity. Twenty per cent of the world's population consists of frequent players, spending about \$60 billion a year. Aside from the financial toll, the moral toll is comprehensive. Here is the government, the guardian of order, telling people that they don't have to work to build for the future. They can strike it rich for nothing.

Payday lenders have also played a role. They seductively offer fast cash-at-absurd interest rates-to 15 million people every month. Credit card companies have played a role. Instead of targeting the financially astute, who payoff their debts, they have found that they can make money off the young and vulnerable. Fifty-six per cent of students in their final year of college carry four or more credit cards. The nation's leaders have played a role as they have always had an incentive to shove costs for current promises onto the backs of future generations. It has only now become respectable to do so. The market itself has played a role. Software stalwarts built socially useful products to make their fortune. But what message do the salary packages that their top managers get

send across the country when they ignore millions of fellow countrymen who suffer from poverty, malnutrition or hunger? Austerity has become a thing of the past.

The list could go on. But there could be some recommendations. First, raise public consciousness about debt the way the anti-smoking activists did with their campaign. Second create institutions that encourage thrift. Foundations and religious institutions could issue short-term loans to cut into the payday lender's business. Colleges could reduce credit card advertising on campus. The tax code should tax consumption not income.

But the most important thing is to shift values. The 'wise' made it prestigious to embrace certain middle class virtues. Now, it's socially acceptable to undermine those virtues. It is considered normal to play the debt game and imagine that decisions made today will have no consequences in the future.

154. What does the author mean by the phrase 'the transformation has led to a stark financial polarization' as used in the passage?

- (a) The deterioration of social norms has benefited only the wealthy and the knowledgeable while the vulnerable class of people has fallen into a debt trap
 - (b) Since, moral inhibitions no longer exist, the debt agents provide loans only to the affluent class thus widening the gap between the rich and the poor
 - (c) The debt culture is being utilized as a measure to draw money from the wealthy class by credit card companies
 - (d) Both (a) and (b)

- 155.** Which of the following, according to the author, has/have been responsible for the encouragement of culture of debt in the society lately?

156. The **author** of the given passage seems to be definitely

 - (a) suggesting that the agents of debts be banned from the society.
 - (b) unaware of the benefits associated with the easy availability of loans these days
 - (c) in favour of bringing back the financial restrictions once imposed by the society
 - (d) not supportive of campaigns related to anti-tobacco and saving the environment

157. Why does the author of the given passage seem to be displeased with the software stalwarts?

 - (a) They make fortune out of the products which are barely socially useful
 - (b) They have been drawing colossal salaries and turn a blind eye towards the needs of fellow countrymen
 - (c) They are directly responsible for the hunger, malnutrition and poverty among their fellow countrymen
 - (d) They have promoted the culture of debt among various sections of society

- 158.** Which of the following suggestions have been made by the author in order to check the culture promoting debts?

- 159.** Which of the following statements would **weaken** the argument made by the author in the given paragraph?

- (a) A newspaper article reported an improvement in the lifestyle of millions of people after loans were made easy to avail to not only the wealthy but to all sections of society.
 - (b) A man along with his family was forced to live on streets after he lost all of his life's earning to buy lottery tickets.
 - (c) Profit earned from credit card companies has become an essential component in the economy of a growing nation.
 - (d) Last year's recession was mainly due to losses incurred by companies offering loans as a large number of their clients turned out to be defaulters.

PASSAGE-34

Sixty years after independence, India remains one of the unhealthiest places on earth. Millions of people still suffer from diseases that no longer exist almost anywhere else on the planet. What makes the picture even bleaker is the fact that India's economic boom has so far had little impact on health standards. Between 2001 and 2006 India's economy grew almost 50%, the country's biggest expansion in decades. Meantime, its child-malnutrition rate dropped just a single percentage point, to 46%. This is worse than in most African countries. The incredible economic growth is having an impact in other ways by driving up rates of rich-world diseases such as obesity and encouraging high-end health services, some of which offer world-class care but remain far beyond the reach of the vast majority of Indians. The country brags about the skill of India's world class doctors when its marketers sell India as a medical-tourism destination and an emerging health-service giant. The truth behind the glossy advertising is that: India is the sick man of Asia, malnourished and beset by epidemic of AIDS and diabetes, and with spending levels on public health that even its Prime Minister has conceded are seriously lagging behind other developing countries in Asia.

Part of the reason for the sorry state of India's medical services is the crumbling public health infrastructure-not fancy hospitals or equipment but basic services such as clean water, a functioning sewage system, power. The World Health Organisation estimates that more than 90,000 Indians die every year from drinking bad water and breathing bad air. Public health experts believe that India's vast population adds to the burden, overloading systems where they do exist and aiding the spread of disease in many places they don't. Moreover for the past decade or so, funding for preventive

public-health initiatives such as immunization drives and programmes to control the spread of communicable diseases had been cut. Experts also blame policies that concentrate on the latest scientific techniques and not enough on basics for the fact that millions of people in India are suffering and dying.

Especially in rural India, health services are poor or nonexistent. Current staff often do not turn up for work. Clinics are badly maintained and people end up seeking help from pharmacists who are not sufficiently trained. India needs more than a million more doctors and nurses. The government has also promised more money for rural health through its ambitious National Rural Health Mission. It will increase public-health spending from the current 1 % of India's GDP to upto 3% by 2010, but that's still just half the rate at which countries with comparable per capita incomes such as Senegal and Mongolia fund their health sectors. If that is to change, we must realise that the link between wealth and good health is not clear cut. Poor states that have made efforts in child immunization over the past few years now have better coverage than richer states, where immunisation has actually slipped.

India needs to stop being complacent and prepare to spend on health but whenever it is mentioned, there is always this debate about cost. Why don't we have the same debate when we spend tens of billions on new arms? It's hard to be an economic superpower if you're too sick to work.

160. Why has the author referred to India "as one of the unhealthiest places on earth"?

1. There is no cure available for many of the diseases contracted in India.
2. The Government has not clearly defined health standards.
3. A large number of people in India suffer from diseases, which have been wiped out in other countries
 - (a) 2 and 3
 - (b) 3 only
 - (c) 1 and 3
 - (d) All 1, 2 and 3

161. What staff related problems does the rural health care system face?

1. High rate of absenteeism.
2. Badly maintained clinics.
3. Good maintenance of equipment by staff.
 - (a) All 1, 2 and 3
 - (b) Both 1 and 3
 - (c) 2 only
 - (d) None of these

162. What has contributed to the present ill health among Indians?

- (a) Disintegration of the public healthcare infrastructure
- (b) Healthcare facilities are often monopolised by foreigners
- (c) Doctors in India do not conduct research in areas like diabetes which are affecting the population.
- (d) The current government has taken no interest at all in public health initiatives

163. What has the impact of high cost of healthcare in India been?

- (a) The medical insurance sector is booming
- (b) Patients seek care only from those who are adequately qualified
- (c) The National Health Mission Scheme will be discontinued
- (d) The healthcare remains beyond the reach of the vast majority

164. What is the author's main objective in writing the passage?

- (a) Comparing India and Africa in terms of economic growth
- (b) Cautioning India to improve its healthcare system
- (c) Exhorting India to have higher growth rate which will benefit the healthcare sector
- (d) Criticising medical practitioners for their lack of concern for the health of the weaker sections of society

165. Which of the following is TRUE in the context of the passage?

1. Economic growth leads to provision of better healthcare services for all.
2. Africa has cheaper and better healthcare facilities than India.
3. The per capita income of India and Senegal is equivalent.
 - (a) 1 only
 - (b) All 1, 2 and 3
 - (c) 3 only
 - (d) Both 2 and 3

166. Which of the following cannot be seen as a cause for the state of India's healthcare system?

- (a) Vast population
- (b) Lack of basic services like water, power etc.
- (c) Inadequate waste management facilities
- (d) Lack of funding from the World Health Organisation ..

167. What impact has India's economic growth had on the healthcare system?

- (a) Economic growth has resulted in higher prices of food and so malnutrition has risen
- (b) India is spending more on healthcare than other developing countries
- (c) Excellent healthcare facilities are available at rates unaffordable by most Indians
- (d) India has become one of the most sought after medical tourism destinations in the world

168. What can be inferred from the statistics given for 2001-2006?

- (a) India has made strides in reducing its malnutrition rate
- (b) During this period India managed to achieve a growth rate equivalent to that of developed countries
- (c) India managed to achieve high standards both in economic growth and in healthcare
- (d) Though India achieved a high economic growth rate this did not positively impact the healthcare sector to a great extent.

169. How has the Prime Minister reacted to the crisis facing the health care sector?

1. Is concerned about the spending levels on the healthcare system.
2. Has decided to reduce expenditure on defence.
3. Has encouraged private sector investment in healthcare.
 - (a) Both 2 and 3
 - (b) 2 only
 - (c) 1 only
 - (d) 1 and 3

PASSAGE-35

A new analysis has determined that the threat of global warming can still be greatly diminished if nations cut emissions of heat-trapping green-house gases by 70% this century. The analysis was done by scientists at the National Centre for Atmospheric Research (NCAR). While global temperatures would rise, the most dangerous potential aspects of climate change, including massive

losses of Arctic sea ice and permafrost and significant sea-level rise, could be partially avoided.

"This research indicates that we can no longer avoid significant warming during this century," said NCAR scientist Warren Washington, the study paper's lead author. "But, if the world were to implement this level of emission cuts, we could stabilise the threat of climate change", he added.

Average global temperatures have warmed by close to 1°C since the pre-industrial era. Much of the warming is due to human-produced emissions of greenhouse gases, predominantly carbon dioxide. This heat-trapping gas has increased from a pre-industrial level of about 284 parts per million (ppm) in the atmosphere to more than 380 ppm today. With research showing that additional warming of about 1°C may be the threshold for dangerous climate change, the European Union has called for dramatic cuts in emissions of carbon dioxide and other greenhouse gases.

To examine the impact of such cuts on the world's climate, Washington and his colleagues ran a series of global studies with the NCAR-based Community Climate System Model (CCSM). They assumed that carbon dioxide levels could be held to 450 ppm, at the end of this century. In contrast, emissions are now on track to reach about 750 ppm by 2100 if unchecked. The team's results showed that if carbon dioxide were held to 450 ppm, global temperatures would increase by 0.6°C above current readings by the end of the century. In contrast, the study showed that temperatures would rise by almost four times that amount, to 2.2°C above current readings, if emissions were allowed to continue on their present course. Holding carbon dioxide levels to 450 ppm would have other impacts, according to the climate modeling study. Sea-level rise due to thermal expansion as water temperatures warmed would be 14 cm (about 5.5 inches) instead of 22 cm (8.7 inches). Also, Arctic ice in the summertime would shrink by about a quarter in volume and stabilise by 2100, as opposed to shrinking at least three-quarters and continuing to melt, and Arctic warming would be reduced by almost half.

170. What would be the impact of unchecked green-house gas and carbon dioxide emissions?

 - (a) The temperature would rise from the current temperature by 2.2°C
 - (b) The sea-level would rise by about 5.5 inches
 - (c) The Arctic ice would stabilise by 2100
 - (d) The Arctic ice would reduce by one-fourth

171. What can be the most appropriate title of the above passage?

 - (a) A study of the rise in water level
 - (b) A study of rise in temperatures
 - (c) A study of the effects of green-house gas emissions
 - (d) A study of the Arctic region

172. What does the scientist Warren Washington mean when he says "we could stabilise the threat of climate change"?

 - (a) Climate change can be stopped completely
 - (b) Climate change can be regularised
 - (c) Climate change and its effects can be studied extensively
 - (d) The ill-effects of the change in climate can be minimised

173. Why did Washington and his colleagues conduct a series of studies?

 - (a) Because they realised that the temperature increase was almost about 1°C

- (b) So that they could stabilise the climate change
 - (c) So that they could help the European Union In cutting the carbon dioxide emissions
 - (d) None of the above

PASSAGE-36

Ecological research over the last quarter of the century has established the deleterious effects of habitat fragmentation due to mining, highways and such other intrusions on forests. When a large block of forests gets fragmented into smaller bits, the edges of all these bits come into contact with human activities resulting in the degradation of the entire forests. Continuity of forested landscapes and corridors gets disrupted affecting several extinction-prone species of wildlife. Habitat fragmentation is therefore considered as the most serious threat to biodiversity conservation. Ad hoc grants of forest lands to mining companies coupled with rampant illegal mining is aggravating this threat.

175. What is the central focus of this passage ?

 - (a) Illegal mining in forests
 - (b) Extinction of wildlife
 - (c) Conservation of nature
 - (d) Disruption of habitat

176. What is the purpose of maintaining the continuity of forested landscapes and corridors?

 1. Preservation of biodiversity.
 2. Management of mineral resources.
 3. Grant of forest lands for human activities.

Select the correct answer using the codes given below.

PASSAGE-37

The law in many parts of the world increasingly restricts the discharge of agricultural slurry into watercourses. The simplest and often the most economically sound practice returns the material to the land as semisolid manure or as sprayed slurry. This dilutes its concentration in the environment to what might have occurred in a more primitive and sustainable types of agriculture and converts pollutant into fertilizer. Soil microorganisms decompose the organic components of sewage and slurry and most of the mineral nutrients become available to be absorbed again by the vegetation.

The excess input of nutrients, both nitrogen and phosphorus-based, agricultural runoff (and human sewage) has caused many ‘healthy’ *oligotrophic* lakes (low nutrient concentrations, low plant productivity with abundant water weeds, and clear water) to change to *eutrophic* condition where high nutrient inputs lead to high phytoplankton productivity (sometimes dominated by bloom-

forming toxic species). This makes the water turbid, eliminates large plants and, in the worst situations, leads to anoxia and fish kills; so called *cultural eutrophication*. Thus, important ecosystem services are lost, including the provisioning service of wild-caught fish and the cultural services associated with recreation.

The process of cultural eutrophication of lakes has been understood for some time. But only recently did scientists notice huge ‘dead zones’ in the oceans near river outlets., particularly those draining large catchment areas such as the Mississippi in North America and the Yangtze in China. The nutrient-enriched water flows through streams, rivers and lakes, and eventually to the estuary and ocean where the ecological impact may be huge, killing virtually all invertebrates and fish in areas up to 70,000 km² in extent. More than 150 sea areas worldwide are now regularly starved of oxygen as a result of decomposition of algal blooms, fuelled particularly by nitrogen from agricultural runoff of fertilizers and sewage from large cities. Oceanic dead zones are typically associated with industrialized nations and usually lie off countries that subsidize their agriculture, encouraging farmers to increase productivity and use more fertilizer.

177. According to the passage, why should the discharge of agricultural slurry into watercourses be restricted?

1. Losing nutrients in this way is not a good practice economically.
2. Watercourses do not contain the microorganisms that can decompose organic components of agricultural slurry.
3. The discharge may lead to the eutrophication of water bodies.

Select the correct answer using the codes given below:

- | | |
|------------------|------------------|
| (a) 1 only | (b) 2 and 3 only |
| (c) 1 and 3 only | (d) 1, 2 and 3 |

178. The passage refers to the conversion of “pollutant to fertilizer”. What is pollutant and what is fertilizer in this context?

- (a) Decomposed organic component of slurry is pollutant and microorganisms in soil constitute fertilizer.
- (b) Discharged agricultural slurry is pollutant and decomposed slurry in soil is fertilizer.
- (c) Sprayed slurry is pollutant and watercourses is fertilizer.
- (d) None of the above expressions is correct in this context.

179. According to the passage, what are the effects of indiscriminate use of fertilizers?

1. Addition of pollutants to the soil and water.
2. Destruction of decomposer microorganism in soil.
3. Nutrient enrichment of water bodies.
4. Creation of algal blooms.

Select the correct answer from the codes given below:

- | | |
|---------------------|---------------------|
| (a) 1, 2 and 3 only | (b) 1, 3 and 4 only |
| (c) 2 and 4 only | (d) 1, 2, 3 and 4 |

180. What is/are the characteristics of a water body with cultural eutrophication?

1. Loss of ecosystem services
2. Loss of flora and fauna
3. Loss of mineral nutrients

Select the correct answer using the code given below:

- | | |
|------------------|------------------|
| (a) 1 only | (b) 1 and 2 only |
| (c) 2 and 3 only | (d) 1, 2 and 3 |

181. What is the central theme of this passage?

- (a) Appropriate legislation is essential to protect the environment.
- (b) Modern agriculture is responsible for the destruction of environment.
- (c) Improper waste disposal from agriculture can destroy the aquatic ecosystems.
- (d) Use of chemical fertilizers is undesirable in agriculture.

PASSAGE-38

The miseries of the world cannot be cured by physical help only. Until man’s nature changes, his physical needs will always arise, and miseries will always be felt, and no amount of physical help will remove them completely. The only solution of the problem is to make mankind pure. Ignorance is the mother of evil and of all the misery we see. Let men have light, let them be pure and spiritually strong and educated; then alone will misery cease in the world. We may convert every house in the country into a charitable asylum, we may fill the land with hospitals, but human misery will continue until man’s character changes.

182. According to the passage, which of the following statements is most likely to be true as the reason for man’s miseries?

- (a) The poor economic and social conditions prevailing in society.
- (b) The refusal on the part of man to change his character.
- (c) The absence of physical and material help from his society.
- (d) Ever increasing physical needs due to changing social structure.

183. With reference to the passage, the following assumptions have been made”

1. The author gives primary importance to physical and material help in eradicating human misery.
2. Charitable homes, hospitals, etc. can remove human misery to a great extent.

Which of the assumption is/are valid?

- | | |
|------------------|---------------------|
| (a) 1 only | (b) 2 only |
| (c) Both 1 and 2 | (d) Neither 1 nor 2 |

PASSAGE-39

The subject of democracy has become severely muddled because of the way the rhetoric surrounding it has been used in recent years. There is, increasingly, an oddly confused dichotomy between those who want to ‘impose’ democracy on countries in the non-Western world (in these countries’ ‘own interest’, of course) and those who are opposed to such ‘imposition’ (because of the respect for the countries’ ‘own ways’). But the entire language of ‘imposition’, used by both sides, is extraordinarily inappropriate since it makes the implicit assumption that democracy belongs exclusively to the West, taking it to be a quintessentially ‘Western’ idea which has originated and flourished only in the West. But the thesis and the pessimism it generates about the possibility of democratic practice in the world would be extremely hard to justify. There were several experiments in local democracy in ancient India. Indeed, in understanding the roots of democracy in the world, we have to take an interest in the history of people

participation and public reasoning in different parts of the world. We have to look beyond thinking of democracy only in terms of European and American evolution. We would fail to understand the pervasive demands for participatory living, on which Aristotle spoke with far-reaching insight, if we take democracy to be a kind of a specialized cultural product of the West.

It cannot, of course, be doubted that the institutional structure of the contemporary practice of democracy is largely the product of European and American experience over the last few centuries. This is extremely important to recognize since these developments in institutional formats were immensely innovative and ultimately effective. There can be little doubt that there is a major ‘Western’ achievement here.

184. Which of the following is closest to the view of democracy as mentioned in the above passage?

- (a) The subject of democracy is a muddle due to a desire to portray it as a Western concept, ‘alien’ to non-Western countries.
- (b) The language of imposition of democracy is inappropriate. There is, however, a need to consider this concept in the backdrop of culture of ‘own ways’ of non-Western society.
- (c) While democracy is not essentially a Western idea belonging exclusively to the West, the institutional structure of current democratic practices has been their contribution.
- (d) None of the statements (a), (b) and (c) given above is correct.

185. With reference to the passage, the following assumption have been made:

- 1. Many of the non-Western countries are unable to have democracy because they take democracy to be a specialized cultural product of the West.
- 2. Western countries are always trying to impose democracy on non-Western countries.

Which of the above is/are valid assumption/assumptions?

- (a) 1 only (b) 1 only
- (c) Both 1 and 2 (d) Neither 1 nor 2

PASSAGE-40

Corporate governance is based on principles such as conducting the business with all integrity and fairness, being transparent with regard to all transactions, making all the necessary disclosures and decisions, complying with all the laws of the land, accountability and responsibility towards the stakeholders and commitment to conducting business in an ethical manner. Another point which is highlighted on corporate governance is the need for those in control to be able to distinguish between what are personal and corporate funds while managing a company.

Fundamentally, there is a level of confidence that is associated with a company that is known to have good corporate governance. The presence of an active group of independent directors on the board contributes a great deal towards ensuring confidence in the market. Corporate governance is known to be one of the criteria that foreign institutional investors are increasingly depending on when deciding on which companies to invest in. It is also known to have a positive influence on the share price of the company.

Having a clean image on the corporate governance front could also make it easier for companies to source capital at more reasonable costs. Unfortunately, corporate governance often becomes the centre of discussion only after the exposure of a large scam.

186. According to the passage, which of the following should be the practice/practices in good corporate governance?

- 1. Companies should always comply with labour and tax laws of the land.
- 2. Every company in the country should have a government representative as one of the independent directors on the board to ensure transparency.
- 3. The manager of a company should never invest his personal funds in the company.

Select the correct answer using the codes given below:

- (a) 1 only (b) 2 and 3 only
- (c) 1 and 3 only (d) 1, 2 and 3

187. According to the passage, which of the following is/are the major benefit/benefits of good corporate governance?

- 1. Good corporate governance leads to increase in share price of the company.
- 2. A company with good corporate governance always increases its business turnover rapidly.
- 3. Good corporate governance is the main criterion for foreign institutional investors when they decide to buy a company.

Select the correct answer using the codes given below:

- (a) 1 only (b) 2 and 3 only
- (c) 1 and 3 only (d) 1, 2 and 3

PASSAGE-41

Malnutrition most commonly occurs between the ages of six months and two years. This happens despite the child’s food requirements being less than that of an older child. Malnutrition is often attributed to poverty, but it has been found that even in households where adults eat adequate quantities of food, more than 50 per cent of children-under-five do not consume enough food. The child’s dependence on someone else to feed him/her is primarily responsible for the malnutrition. Very often the mother is working and the responsibility of feeding the young child is left to an older sibling. It is therefore crucial to increase awareness regarding the child’s food needs and how to satisfy them.

188. According to the passage, malnutrition in children can be reduced.

- (a) if the children have regular intake of food
- (b) after they cross the age of five.
- (c) if the food needs of younger children are known.
- (d) if the responsibility of feeding younger children is given to adults.

189. According to the author, poverty is not the main cause of malnutrition, but the fact that

- 1. taking care of younger ones is not a priority for working mothers.
- 2. awareness of nutritional needs is not propagated by the Public Health authorities.

Select the correct answer using the codes given below:

- (a) 1 only (b) 2 only
- (c) Both 1 and 2 (d) Neither 1 nor 2

PASSAGE-42

A number of empirical studies find that farmers are risk-averse, though only moderately in many cases. There is also evidence to show that farmers' risk aversion results in cropping patterns and input use designed to reduce risk rather than to maximize income. Farmers adopt a number of strategies to manage and cope with agricultural risks. These include practices like crop and field diversification, non-farm 'employment storage of stocks and strategic migration of family members. There are also institutions ranging from share tenancy to kinship, extended family and informal credit agencies. One major obstacle to risk sharing by farmers is that the same type of risks can affect a large number of farmers in the region. Empirical studies show that the traditional methods are not adequate. Hence there is a need for policy interventions, especially measures that cut across geographical regions.

Polices may aim at tackling agricultural risks directly or indirectly. Examples of risk-specific policies are crop insurance, price stabilization and the development of varieties resistant to pests and diseases. Policies which affect risk indirectly are irrigation, subsidized credit and access to information. No single risk-specific policy is sufficient to reduce risk and is without side-effects, whereas policies not specific to risk influence the general situation and affect risks only indirectly. Crop insurance, as a policy measure to tackle agricultural risk directly, deserves careful consideration in the Indian context and in many other developing countries – because the majority of farmers depend on rain-fed agriculture and in many areas yield variability is the predominant cause of their income instability.

190. The need for policy intervention mitigate risks in agriculture is because

- (a) farmers are extremely risk-averse.
- (b) farmers do not know how to mitigate risks.
- (c) the methods adopted by farmers and existing risk sharing institutions are not adequate.
- (d) majority of farmers depend on rain-fed agriculture.

191. Which of the following observations emerges from the above passage?

- (a) One can identify a single policy that can reduce risk without any side-effect.
- (b) No single task-specific policy is sufficient to reduce agricultural risk.
- (c) Policies which affect risk indirectly can eliminate it.
- (d) Government's policy intervention can mitigate agricultural risk completely.

PASSAGE-43

Financial markets in India have acquired greater depth and liquidity over the years. Steady reforms since 1991 have led to growing linkages and integration of the Indian economy and its financial system with the global economy. Weak global economic prospects and continuing uncertainties in the international financial markets therefore, have had their impact on the emerging market economies. Sovereign risk concerns, particularly in the Euro area, affected financial markets for the greater part of the year, with the contagion of Greece's sovereign debt problem spreading to India and other economies by way of higher-than-normal levels of volatility.

The funding constraints in international financial markets could impact both the availability and cost of foreign funding for banks and corporates. Since the Indian financial system is bank dominated, banks' ability to withstand stress is critical to overall financial stability. Indian banks, however, remain robust, notwithstanding a decline in capital to risk-weighted assets ratio and a rise in non-performing asset levels in the recent past. Capital adequacy levels remain above the regulatory requirements. The financial market infrastructure continues to function without any major disruption. With further globalization, consolidation, deregulation, and diversification of the financial system, the banking business may become more complex and riskier. Issue like risk and liquidity management and enhancing skill therefore assume greater significance.

192. According to the passage, the financial markets in the emerging market economies including India had the adverse impact in recent years due to

- 1. weak global economic prospects.
- 2. uncertainties in the international financial markets.
- 3. sovereign risk concerns in the Euro area.
- 4. bad monsoons and the resultant crop loss.

Select the correct answer using the code given below:

- | | |
|------------------|----------------|
| (a) 1 and 2 only | (b) 1, 2 and 3 |
| (c) 2 and 3 only | (d) 2, 3 and 4 |

193. The Indian financial markets are affected by global changes mainly due to the

- (a) increased inflow of remittances from abroad
- (b) enormous increases in the foreign exchange reserves.
- (c) growing global linkages and integration of the Indian financial markets.
- (d) contagion of Greece's sovereign debt problem.

194. According to the passage, in the Indian financial system, bank's ability to withstand stress is critical to ensure overall financial stability because Indian financial system is

- (a) controlled by the Government of India
- (b) less integrated with banks.
- (c) controlled by the Reserve of Bank of India.
- (d) dominated by Banks.

195. Risk and liquidity management assumes more importance in the Indian banking system in future due to

- 1. further globalization.
- 2. more consolidation and deregulation of financial system
- 3. further diversification of the financial system.
- 4. more financial inclusion in the economy.

Select the correct answer using the code given below:

- | | |
|------------------|------------------|
| (a) 1, 2 and 3 | (b) 2, 3 and 4 |
| (c) 1 and 2 only | (d) 3 and 4 only |

PASSAGE-44

Crude mineral oil comes out of the earth as a thick brown or black liquid with a strong smell. It is a complex mixture of many different substances, each with its own individual qualities. Most of them are combinations of hydrogen and carbon in varying proportions. Such hydrocarbons are also found in other forms such as bitumen, asphalt and natural gas. Mineral oil originates from the carcasses of tiny animals and from plants that live in the sea. Over millions of years, these dead creatures form large deposits under the seabed; and ocean currents cover them with a blanket of sand and

silt. As this mineral hardens, it becomes sedimentary rock and effectively shuts out the oxygen, so preventing the complete decomposition of the marine deposits underneath. The layers of sedimentary rock become thicker and heavier. Their pressure produces heat, which transforms the tiny carcasses into crude oil in a process that is still going on today.

196. Mineral oil deposits under the sea do not get completely decomposed because they

- (a) are constantly washed by the ocean currents.
 - (b) become rock and prevent oxygen from entering them.
 - (c) contain a mixture of hydrogen and carbon.
 - (d) are carcasses of organisms lying in saline conditions.

197. Sedimentary rock leads to the formation of oil deposits because

- (a) there are no saline conditions below it.
 - (b) it allows some dissolved oxygen to enter the dead organic matter below it.
 - (c) weight of overlying sediment layers causes the production of heat.
 - (d) it contains the substances that catalyze the chemical reactions required to change dead organisms into oil.

PASSAGE-45

Many nations now place their faith in capitalism and governments choose it as the strategy to create wealth for their people. The spectacular economic growth seen in Brazil, China and India after the liberalisation of their economies is proof of its enormous potential and success. However, the global banking crisis and the economic recession have left many bewildered. The debates tend to focus on free market operations and forces, their efficiency and their ability for self correction. Issues of justice, integrity and honesty are rarely elaborated to highlight the failure of the global banking system. The apologists of the system continue to justify the success of capitalism and argue that the recent crisis was a blip. Their arguments betray an ideological bias/ with the assumptions that an unregulated market is fair and competent, and that the exercise of private greed will be in the larger . public interest. Few recognize the bidirectional relationship between capitalism and greed; that each reinforces the other. Surely, a more honest conceptualisation of the conflicts of interest among the rich and powerful players who have benefited from the system, their biases and ideology is needed; the focus on the wealth creation should also highlight the resultant gross inequity.

198. The apologists of the "Free Market System", according to the passage, believe in

- (a) market without control by government authorities.
 - (b) market without protection by the government.
 - (c) ability of market to self correct.
 - (d) market for free goods and services.

199. With reference to "ideological bias", the passage implies that

- (a) free market is fair but not competent.
 - (b) free market is not fair but competent.
 - (c) free market is fair and competent.
 - (d) free market is neither fair nor biased.

200. The exercise of private greed will be in the larger public interest" from the passage

1. refers to the false ideology of capitalism.
 2. underlies the righteous claims of the free market.
 3. shows the benevolent face of capitalism.
 4. ignores resultant gross inequity.

Which of the statements given above is/are correct ?

PASSAGE-46

Net profits are only 2.2% of their total assets for central public sector undertakings, lower than for the private corporate sector. While the public sector or the State-led entrepreneurship played an important role in triggering India's industrialization, our evolving development needs, comparatively less-than-satisfactory performance of the public sector enterprises, the maturing of our private sector, a much larger social base now available for expanding entrepreneurship and the growing institutional capabilities to enforce competition policies would suggest that the time has come to review the role of public sector.

What should the portfolio composition of the government be ? It should not remain static all times. The airline industry works well as a purely private affair. At the opposite end, rural roads, whose sparse traffic makes tolling unviable, have to be on the balance-sheet of the State. If the government did not own rural roads, they would not exist. Similarly, public health capital in our towns and cities will need to come from the public sector. Equally, preservation and improvement of forest cover will have to be a new priority for the public sector assets.

Take the example of steel. With near-zero tariffs, India is a globally competitive market for the metal. Indian firms export steel into the global market, which demonstrates there is no gap in technology. Indian companies are buying up global steel companies, which shows there is no gap in capital availability. Under these conditions, private ownership works best.

Private ownership is clearly desirable in regulated industries, ranging from finance to infrastructure, where a government agency performs the function of regulation and multiple competing firms are located in the private sector. Here, the simple and clean solution - government as the umpire and the private sector as the players is what works best. In many of these industries, we have a legacy of government ownership, where productivity tends to be lower, fear of bankruptcy is absent, and the risk of asking for money from the tax payer is ever present. There is also the conflict of interest between government as an owner and as the regulator. The formulation and implementation of competition policy will be more vigorous and fair if government companies are out of action.

201. According to the passage, what is/are the reason/reasons for saying that the time has come to review the role of public sector ?

1. Now public sector has lost its relevance in the industrialization process.
 2. Public sector does not perform satisfactorily.
 3. Entrepreneurship in private sector is expanding.
 4. Effective competition policies are available now.

Which of the statements given above is/are correct in the

(a) 1 and 3 only (b) 2 only

- (a) 1 and 3 only (b) 2 only
(c) 2, 3 and 4 only (d) 1, 2, 3 and 4

- 202.** According to the passage, rural roads should be in the domain of public sector only. Why ?
- Rural development work is the domain of government only.
 - Private sector cannot have monetary gains in this.
 - Government takes money from tax payers and hence it is the responsibility of government only.
 - Private sector need not have any social responsibility.
- 203.** The portfolio composition of the government refers to
- Public sector assets quality.
 - Investment in liquid assets.
 - Mix of government investment in different industrial sectors.
 - Buying Return on Investment yielding capital assets.
- 204.** The author prefers government as the umpire and private sector as players because
- Government prescribes norms for a fair play by the private sector.
 - Government is the ultimate in policy formulation.
 - Government has no control over private sector players.
 - None of the above statements is correct in this context.

PASSAGE-47

Climate change poses potentially devastating effects on India's agriculture. While the overall parameters of climate change are increasingly accepted - a 1°C average temperature increase over the next 30 years, sea level rise of less than 10 cm in the same period, and regional monsoon variations and corresponding droughts - the impacts in India are likely to be quite site and crop specific. Some crops may respond favourably to the changing conditions, others may not. This emphasizes the need to promote agricultural research and create maximum flexibility in the system to permit adaptations.

The key ingredient for "drought proofing" is the managed recharge of aquifers. To ensure continued yields of important staple crops (e.g. wheat), it may also be necessary to shift the locations where these crops are grown, in response to temperature changes as well as to water availability. The latter will be a key factor in making long term investment decisions.

For example, water runoff from the Himalayas is predicted to increase over the next 30 years as glaciers melt, but then decline substantially thereafter. It will be critical to provide incentives to plan for these large-scale shifts in agro-ecological conditions. India needs to make long term investment in research and development in agriculture. India is likely to experience changed weather patterns in future.

- 205.** Consider the following statements :

Climate change may force the shifting of locations of the existing crops due to

- melting of glaciers.
- water availability and temperature suitability at other locations.
- poor productivity of crops.
- wider adaptability of crop plants.

Which of the statements given above are correct ?

- 1,2 and 3
- 2 and 3 only
- 1 and 4 only
- 1,2, 3 and 4

- 206.** According to the passage, why is it important to promote agricultural research in India?

- To predict variations in monsoon patterns and to manage water resources
- To make long term investment decisions for economic growth
- To facilitate wider adaptability of crops
- To predict drought conditions and to recharge aquifers

PASSAGE-48

It is essential that we mitigate the emissions of greenhouse gases and thus avoid some of the worst impacts of climate change that would take place in coming years and decades. Mitigation would require a major shift in the way we produce and consume energy. A shift away from overwhelming dependence on fossil fuels is now long overdue, but unfortunately, technological development has been slow and inadequate largely because government policies have not promoted investments in research and development, myopically as a result of relatively low prices of oil. It is now, therefore, imperative for a country like India treating the opportunity of harnessing renewable energy on a large scale as a national imperative. This country is extremely well endowed with solar, wind and biomass sources of energy. Where we have lagged, unfortunately, is in our ability to develop and to create technological solutions for harnessing these resources.

One particular trajectory for carryingout stringent mitigation of greenhouse gas emissions assessed by the Intergovernmental Panel on Climate Change (IPCC) clearly shows the need for ensuring that global emissions of greenhouse gases peak no later than 2015 and reduce rapidly thereafter. The cost associated with such a trajectory is truly modest and would amount, in the estimation of IPCC, to not more than 3 percent of the global GDP in 2030. In other words, the level of prosperity that the world would have reached without mitigation would at worst be postponed by a few months or a year at the most. This is clearly not a very high price to pay for protecting hundreds of millions of people from the worst risks associated with climate change. Any such effort, however, would require lifestyles to change appropriately also. Mitigation of greenhouse gas emissions is not a mere technological fix, and clearly requires changes in lifestyles and transformation of a country's economic structure, whereby effective reduction in

emissions is brought about, such as through the consumption of much lower quantities of animal protein. The Food and Agriculture

Organization (FAO) has determined that the emissions from the livestock sector amount to 18 percent of the total. The reduction of emissions from this source is entirely in the hands of human beings, who have never questioned the impacts that their dietary habits of consuming more and more animal protein are bringing about. Mitigation overall has huge co-benefits, such as lower air pollution and health benefits, higher energy security and greater employment.

- 207.** According to the passage, which of the ' following would help in the mitigation of greenhouse gases ?

- Reducing the consumption of meat
- Rapid economic liberalization
- Reducingthe consumerism
- Modern management practices of livestock

Select the correct answer using the code given below :

- (a) 1,2 and 3 (b) 2, 3 and 4
 (c) 1 and 3 only (d) 2 and 4 only

208. Why do we continue to depend on the fossil fuels heavily?

1. Inadequate technological development
 2. Inadequate funds for research and development
 3. Inadequate availability of alternative sources of energy

Select the correct answer using the code given below :

209. According to the passage, how does the mitigation of greenhouse gases help us?

1. Reduces expenditure on public health
 2. Reduces dependence on livestock
 3. Reduces energy requirements
 4. Reduces rate of global climate change

Select the correct answer using the code given below :

- (a) 1,2 and 3 (b) 1, 3 and 4
 (c) 2, 3 and 4 (d) 1 and 4 only

210. What is the *essential* message of the passage?

- What is the essential message of the passage?

 - (a) We continue to depend on fossil fuels heavily
 - (b) Mitigation of the greenhouse gases is imperative
 - (c) We must invest in research and development
 - (d) People must change their lifestyle

PASSAGE-49

In recent times, India has grown fast not only compared to its own past but also in comparison with other nations. But there cannot be any room for complacency because it is possible for the Indian economy to develop even faster and also to spread the benefits of this growth more widely than has been done thus far. Before going into details of the kinds of micro-structural changes that we need to conceptualize and then proceed to implement, it is worthwhile elaborating on the idea of inclusive growth that constitutes the defining concept behind this Government's various economic policies and decisions. A nation interested in inclusive growth views the same growth differently depending on whether the gains of the growth are heaped primarily on a small segment or shared widely by the population. The latter is cause for celebration but not the former. In other words, growth must not be treated as an end in itself but as an instrument for spreading prosperity to all. India's own past experience and the experience of other nations suggests that growth is necessary for eradicating poverty but it is not a sufficient condition. In other words, policies for promoting growth need to be complemented with policies to ensure that more and more people join in the growth process and, further, that there are mechanisms in place to redistribute some of the gains to those who are unable to partake in the market process and, hence, get left behind.

A simple way of giving this idea of inclusive growth a sharper form is to measure a nation's progress in terms of the progress of its poorest segment, for instance the bottom 20 per cent of the population. One could measure the per capita income of the bottom

quintile of the population and also calculate the growth rate of income; and evaluate our economic success in terms of these measures that pertain to the poorest segment. This approach is attractive because it does not ignore growth like some of the older heterodox criteria did. It simply looks at the growth of income of the poorest sections of the population. It also ensures that those who are outside of the bottom quintile do not get ignored. If that were done, then those people would in all likelihood drop down into the bottom quintile and so would automatically become a direct target of our policies. Hence the criterion being suggested here is a statistical summing up of the idea of inclusive growth, which, in turn, leads to two corollaries : to wish that India must strive to achieve high growth and that we must work to ensure that the weakest segments benefit from the growth.

211. The author's central focus is on.

- (a) applauding India's economic growth not only against its own past performance, but against other nations.
 - (b) emphasizing the need for economic growth which is the sole determinant of a country's prosperity.
 - (c) emphasizing inclusive growth where gains of growth are shared widely by the population.
 - (d) emphasizing high growth.

212. The author supports policies which will help

- (a) develop economic growth.
 - (b) better distribution of incomes irrespective of rate of growth.
 - (c) develop economic growth and redistribute economic gains to those getting left behind.
 - (d) put an emphasis on the development of the poorest segments of society.

213. Consider the following statements :

According to the author, India's economy has grown but there is no room for complacency as

PASSAGE-50

It is easy for the government to control State-owned companies through nods and winks. So what really needs to be done as a first step is to put petrol pricing on a transparent formula - if the price of crude is x and the exchange rate y , then every month or fortnight, the government announces a maximum price of petrol, which anybody can work out from the x and the y . The rule has to be worked out to make sure that the oil-marketing companies can, in general, cover their costs. This will mean that if one company can innovate and cut costs, it will make greater profits. Hence, firms will be more prone to innovate and be efficient under this system. Once the rule is announced, there should be no interference by the government. If this is done for a while, private companies will re-enter this market. And once a sufficient number of them are in the fray, we can remove the rule-based pricing and leave it truly to the market (subject to, of course, the usual regulations of anti-trust and other competition laws).

education and health. Any restrictions on the adjustments in workforce by way of retrenchment of workers should also be removed and exit should be made easier by removing any restrictions on closures. Employment and wages should be governed by free play of market forces, as any measure to regulate them can discourage investment and also create inefficiency in production. Above all, in line with the overall philosophy of reduction in the role of the State, fiscal reforms should be undertaken to have generally low levels of taxation and government expenditure should be kept to the minimum to abide by the principle of fiscal prudence. All these are policy actions on the domestic front and are not directly related to the core items of the globalization agenda, namely free international flow of goods and finance.

- 220.** According to the passage, under the globalization, government interventions are viewed as processes leading to
- distortions and inefficiency in the economy.
 - optimum use of resources.
 - more profitability to industries.
 - free play of market forces with regard to industries.

- 221.** According to the passage, the basic philosophy of globalization is to

- give absolute freedom to producers to determine prices and production.
- give freedom to producers to evolve distribution patterns.
- give absolute freedom to markets to determine prices, production and employment.
- give freedom to producers to import and export.

- 222.** According to the passage, which of the following is/are necessary for ensuring globalization ?

1. Privatization of public enterprises
2. Expansionary policy of public expenditure
3. Free play of market forces to determine wages and employment
4. Privatization of social services like education and health

Select the correct answer using the code given below :

- 1 only
- 2 and 3 only
- 1, 3 and 4
- 2, 3 and 4

- 223.** According to the passage, in the process of globalization the State should have

- expanding role.
- reducing role.
- statutory role.
- none of the above roles.

SOLUTIONS

ANSWER KEY

1	(a)	21	(c)	41	(b)	61	(c)	81	(a)	101	(c)	121	(b)	141	(d)	161	(d)	181	(c)	201	(c)	221	(c)
2	(c)	22	(a)	42	(c)	62	(d)	82	(d)	102	(a)	122	(b)	142	(b)	162	(a)	182	(b)	202	(b)	222	(c)
3	(c)	23	(d)	43	(d)	63	(a)	83	(c)	103	(c)	123	(c)	143	(d)	163	(d)	183	(d)	203	(c)	223	(b)
4	(a)	24	(b)	44	(a)	64	(a)	84	(b)	104	(c)	124	(d)	144	(d)	164	(b)	184	(c)	204	(a)		
5	(b)	25	(b)	45	(c)	65	(c)	85	(d)	105	(d)	125	(a)	145	(d)	165	(d)	185	(d)	205	(a)		
6	(a)	26	(d)	46	(b)	66	(d)	86	(c)	106	(c)	126	(b)	146	(d)	166	(d)	186	(a)	206	(c)		
7	(c)	27	(a)	47	(a)	67	(a)	87	(b)	107	(c)	127	(c)	147	(c)	167	(c)	187	(a)	207	(c)		
8	(a)	28	(c)	48	(a)	68	(d)	88	(b)	108	(c)	128	(d)	148	(a)	168	(d)	188	(c)	208	(a)		
9	(d)	29	(a)	49	(a)	69	(a)	89	(a)	109	(b)	129	(b)	149	(d)	169	(c)	189	(b)	209	(d)		
10	(b)	30	(c)	50	(d)	70	(d)	90	(c)	110	(b)	130	(d)	150	(a)	170	(a)	190	(c)	210	(b)		
11	(b)	31	(b)	51	(d)	71	(b)	91	(d)	111	(a)	131	(b)	151	(b)	171	(c)	191	(b)	211	(c)		
12	(c)	32	(d)	52	(b)	72	(a)	92	(d)	112	(c)	132	(b)	152	(a)	172	(d)	192	(b)	212	(c)		
13	(b)	33	(b)	53	(a)	73	(c)	93	(c)	113	(d)	133	(c)	153	(c)	173	(d)	193	(c)	213	(d)		
14	(c)	34	(a)	54	(a)	74	(d)	94	(c)	114	(b)	134	(c)	154	(a)	174	(b)	194	(d)	214	(b)		
15	(c)	35	(d)	55	(c)	75	(c)	95	(a)	115	(d)	135	(b)	155	(b)	175	(d)	195	(a)	215	(a)		
16	(b)	36	(b)	56	(c)	76	(c)	96	(b)	116	(a)	136	(d)	156	(b)	176	(a)	196	(b)	216	(d)		
17	(d)	37	(a)	57	(d)	77	(a)	97	(a)	117	(c)	137	(d)	157	(b)	177	(c)	197	(c)	217	(b)		
18	(c)	38	(a)	58	(d)	78	(a)	98	(d)	118	(b)	138	(a)	158	(d)	178	(b)	198	(c)	218	(b)		
19	(c)	39	(b)	59	(d)	79	(d)	99	(a)	119	(d)	139	(b)	159	(a)	179	(b)	199	(c)	219	(b)		
20	(a)	40	(a)	60	(c)	80	(d)	100	(d)	120	(c)	140	(c)	160	(b)	180	(b)	200	(c)	220	(a)		

EXPLANATIONS

1. (a) The passage clearly suggests that education is not instrumentalist in its deepest sense. But the opening sentence calls it to be functional, instrumental and utilitarian. Thus the instrumentalist view of education is the functional and utilitarian dimension in its purposes.
2. (c) The second part of the passage clearly states education is not a commodity but a process of expansion and conversion of the mind – the moral-intellectual development. Acquiring qualifications, upward mobility and social status are the basic utility values of education.
3. (c) Again the second part clearly states the answer. a, b & d are the utilitarian dimensions of education. But ultimately education leads to self-critical awareness and independence of thought.
4. (a) Statement 1 is correct as passage clearly states “In all cases, it is the ... behalf of the child.”
5. (b) Statement 1 is not correct as not stated by the passage. Statements 2 and 3 are correct as stated in passage “This is ... to the education of girls.” Statement 4 is correct as the faulty education system.
6. (a) Statement 1 is correct as stated in the passage “one hardly needs denied or violated.” Statement 2 is irrelevant as developed countries have not been mentioned in the passage.
7. (c) Statement (c) is correct as the passage clearly states that “ This may be painfully ...if at all.”
8. (a) Since girl’s education is the key message, so, prejudice against the intellectual potential of girls.
9. (d) Statement 1 is correct as the writer talks of ‘moral act that should be done by our own will’. Statement 4 is also correct as the personal thinking and in order to be moral one can defy convention.
10. (b) According to the writer moral action is an action based on our sense of discretion.
11. (b) Only statements 1 and 2 are correct as let himself be swept away means he does not hold his own ground.
12. (c) 1 is eliminated as “ art form” is not mentioned in the passage. Social inequalities are not accepted. Only 3 and 4 are mentioned.
13. (b) According to passage Instigation by external forces (social group get politically) and “urge for granting privileges and self respect to disparaged section of the society” are manifestations of social movements.
14. (c) Statement 1 is correct as stated in the passage “The forms of in a country”. Statement 2 is correct as “phase of development active”.
15. (c) Some participants in the race are girls (I - type)
All girl participants in the race are invited for coaching (A - type)
(I + A = I - type)
16. (b) Thus, some participants in the race are invited for coaching
Hence, conclusions (a), (b) and (c) cannot be drawn from the above statements but conclusion (c) is the conversion of statement 1.
Hence, option (c) can be drawn.
17. (d) The first paragraph in the passage conveys the message that the detractors of democracy are quite vocal about the fact that a number of non-democratic governments particularly in East Asia have successfully achieved economic development.
Options (a), (c) and (d) are automatically ruled out.
18. (c) The “constitutive” connection between democracy and development is political freedom and democratic rights.
19. (c) In the Western context “deepening of democracy” means the increased participation of the individual in the democratic process.
So, the other option (a), (b) and (d) are automatically negated.
20. (a) According to the passage Democracy in the Indian context means the increased participation of communities based on religious, caste or sectarian identities. That is why greater democratization in India does not lead to the dilution of caste and communal identities of the individual.
In the context of this explanation options (b), (c) and (d) are automatically negated.
21. (c) The involvement of communities in the democratic process in India has led to a silent revolution. The upper castes held power in earlier days. This power is getting slowly, silently and surely transferred to the subaltern groups
In the context of this argument option (a), (b) and (d) are ruled out.
22. (a) Statement 3 is eliminated as the government should sideline with minimal interference. Statement 4 is eliminated as change in size of government.
23. (d) Strategy of inclusive growth can be effected by focusing on delivery of the basic services to the deprived section of the society. It is clearly stated in the passage “The aim must be state can realistically deliver.”
24. (b) According to given passage only 4 and 5 are that constitutes an enabling Government.
25. (b) State does not promote inclusive growth as stated in 2nd para “ the aim ... realistically deliver.”
26. (d) Options (a), (b) and (c) cannot be the message. The only sentence that talks of a message is option (d) which is the main idea of the passage.
27. (a) Only statements 1 and 2 are true as people who turn revolutionary are not ‘other wordly’ unless world shows the contradiction.

28. (c) Only assumptions 2 and 3 are valid as for achieving anything great one has to be free of worries of basic needs and should be mentally as well as physically free.
29. (a) The passage matically centres on the condition as they cannot dream of freedom or aspire for any kind of opportunity.
30. (c) Option (c) is the correct answer as stated in the passage “Every civilizationlife”
31. (b) This is the first of the passage. Group farming helps remove poverty, increases agricultural productivity and secures the individual from exploitation.
There is no mention of surplus production. So the other options are ruled out.
32. (d) By “gender impact” the author implies that women do not enjoy much power in the transition economies. This is the most appropriate meaning the others come close but are not as accurate.
33. (b)
- (a) There is compulsion on the transition economies to go in for group farming. Therefore, this is not the correct answer.
 - (b) The paragraph is all about the benefits of group approach to farming. This is the right answer.
 - (c) Both options correct included.
 - (d) Both cannot be negated.
34. (a) Only 1 makes sense. According to the 3rd paragraph second line, ‘And some growth natural resources.’ 2, 3 & 4 are irrelevant statements.
35. (d) The options provided in the question do not imply low-carbon growth.
A number of low-carbon growth options exist for reducing our net greenhouse gas emissions, particularly carbon dioxide, which could be implemented over different time horizons. These include: (1) improved efficiency in energy use, especially over the short to medium term, through technological and behavioral changes; (2) producing energy which minimizes carbon dioxide emitted, especially for new power plants, and realistically over the medium to long term; and (3) reducing carbon dioxide produced in non-energy sectors, such as agriculture and forestry, and industries, such as cement production. In addition to these, technologies are being developed to capture and permanently store greenhouse gases, especially carbon dioxide.
36. (b) 1 is not correct as economic prosperity can raise incomes and foster better institutions but it cannot foster sustainable economic growth. 2 is correct. Generating adaptive technologies can lead to a sustainable growth as discussed in para 2. 3 is correct. As investing on research in adaptation will help us in better handling of the changing climate.
37. (a) 1 is correct because if rainfed crops are grown in irrigated areas it would lead to overexploitation of natural resources. 2 is wrong as farming provides employability as well as food resources. The strategy must be not to overexploit and do limited farming.
38. (a) 1 is correct as the creative potential of man will provide better adaptability to the changing climate. 2 is wrong as the passage does not talk about intensive agriculture leading to an economic back lash. It is our growth – industrial and overexploitation of resources – which has lead to such changes.
3 is wrong as economic prosperity will enable us in better handling of the environmental changes.
39. (b) The central theme of the passage is clear that adaptation and mitigation should be integrated with development strategies. The author is not against development but a sustainable development is what he is talking about.
40. (a) The effect of FDI or Foreign Direct Investment should be to induce competition because this is ensured in most countries worldwide.
41. (b) The first option of multinational companies getting accustomed to domestic laws is not mentioned at all. So, this is not the correct answer. Option 2 says foreign companies may establish joint ventures with domestic or companies may get stronger as the parent companies merge overseas. Both options are mentioned in the paragraph. So, this is the correct answer.
Since option (1) is included (3) is not the right answer. Moreover option (4) where foreign companies lower costs finds no mention in the paragraph.
42. (c) The message conveyed in the passage is that it is important to have a competition law in the country to ensure that both domestic and foreign firms have a level playing field.
43. (d) The 1st and 3rd statement are correct on the basis of information in the above passage and they are part of option ‘d’ so ‘d’ is the correct answer. The lines of the passage which give clue regarding this are Non – renewable goods must be used only if their use is indispensable’ this line shows that Buddhist economist prohibit the use of non-renewable resources. The other line is ‘while complete non-violence may not be possible’.
44. (a) The Buddhist view point implies conservation should be given the highest consideration which is option ‘a’ so ‘a’ is the correct answer. The line from the passage which gives a clue regarding this is, ‘greatest care and highest concern for conservation.
45. (c) Buddhist Economists are not in favour of ‘using non-renewable sources indiscriminately’ which is option ‘c’, therefore ‘c’ is the correct answer. The line from the passage which gives clue regarding this is ‘Non – renewable goods must be used only if their use is indispensable’.
46. (b) In this passage, the author has tried to ‘underline the need for conserving natural resources’ which is option (b), therefore, (b) is the correct answer. All through the passage we find the writer is talking about how to use the resources effectively, with great care and highest concern for conservation.

47. (a) Option (a) states that ‘Persuasive skill - set is a prerequisite to an effective presentation’ The clue regarding this lies in the following lines of the passage “The art of effective presentation is the fruit of persistent efforts and practice, therefore, (a) is the correct answer.
48. (a) Option (a) states that “innate stage fright of a speaker can be countered by meticulous preparation of his presentation. The clue regarding this lies in the following lines of the passage – “A thorough preparation is the best antidote for nervousness” therefore, (a) is the correct answer.
49. (a) Option (a) states “Topic of the presentation must be of relevant interest to the audience to induce their responses,” The clue regarding this lies in the following lines of the passage – The topic of the presentation must be interesting to the audience “therefore, (a) is the correct answer.
50. (d) Neither statement (1) nor (2) is correct according to the information given in the passage, therefore, option (d) is the correct answer.
51. (d) Neither statement (1) nor (2) is correct according to the information given in the passage, therefore, option (d) is the correct answer.
52. (b) Option (b) states that “while making a presentation one should, at times, refer to his written material,” The clue regarding this lies in the following lines of the passage “one may consult his notes frequently when he is making his presentation. Therefore, (b) is the correct answer.
53. (a) Option (a) states that “An effective presentation about the product of a company can help in increasing sales volumes” The clue regarding this lies in the following lines of the passage “A successful presentation can help a person in winning orders for the company he works for,” therefore, option (a) is the correct answer.
54. (a) (A) follows because the passage talks of “water conflicts” between developing countries. However, we are told, such conflicts have not escalated into wars.
As for (C), the alteration has been done by water, not by water conflicts.
55. (c) Because they are logical developments.
56. (c) Highlight the seriousness of the threat posed by unresolved water conflicts.
57. (d) Note that the Prime Minister urges the state governments to show “an appreciation of the other’s point of view”.
58. (d) Water is a divisible resource.
59. (d) Rigid indifference to individual differences is the major flaw of the present system.
60. (c) Read the first sentence of the passage A and B are contrary to this
61. (c) Most teachers are trained mainly to cover the syllabus in a mechanical exam-oriented manner.
62. (d) Read the last sentence of the passage.
63. (a) This may be inferred from the third sentence of the first paragraph.
64. (a) National interest should be the first priority
65. (c) They are responsible for national disintegration.
66. (d) They are harmful to national integrity.
67. (a) The author wants India to remain as an ideal nation and the passage has certainly a message behind it.
68. (d) India became a political unit during the British rule.
69. (a) The people of India had taught for certain values.
70. (d) All the tares points (1), (2) and (3) were commonly applicable to both the Murya dynasty rule and Mughal rule.
71. (b) People tend to overlook the paramount importance of national interest because they give undue importance to their selfish motives.
72. (a) The people of India in the passage refers to the people of one unified nation.
73. (c) Transformation of our country into nationhood was possible because of people’s sense of national consciousness as well as generation of high sense of dedication to the nation among the people.
74. (d) This is what is implied by “greater transparency”.
75. (d) The passage does not give any specific reason.
76. (c) See the first sentence of the passage.
77. (c) “The best person available” implies the supremacy of merit.
78. (c) With reference to the passage, only 3 and 5 are adverse effect as potable fresh water and bio-diversity are drastically affected.
79. (a) Statement 2 is not correct as the efforts are being taken. 3 is also not correct as the short term gain have resulted into long term degradation of other.
80. (c) Both statements are correct as ecosystem provide people with variety of goods and benefits, they have to be modified considering the population expansion. Secondly technology will always remain expensive and nature is above man.
81. (c) Option (c) is correct answer as the author shows that not only mussels are affected but other 28 species also disappeared.
82. (d) Neither 1 nor 2 is correct as the dominant species is the keystone species and that is sea star. The sea stars do not live exclusively on mussels as their removal resulted in the disappearance of 28 species more.
83. (c) Only 1 and 3 are correct statements as the ‘sea stars’ are the keystone species which influences both richness of communities and flow of energy.
84. (c) Assumption 1 is correct as disappearance of 28 species along with mussels. Assumption 3 is also correct according to the passage.

108. (c)
- (a) There is a single example given of such a case but it is not always true.
 - (b) This statement is true in some cases but not always so.
 - (c) It is clearly stated that man is the only reason to convert local community compositions into more homogeneous ones.
 - (d) The option (c) is correct in this context.
109. (b)
- (a) To breed exotic species with local varieties is obviously not the purpose.
 - (b) Man intentionally introduces exotic species into new geographical areas for agricultural or recreational purposes. This is clearly stated in the passage.
 - (c) (1) is ruled out. So this answer is not correct.
 - (d) Again (1) is ruled out making the answer incorrect.
110. (b)
- (a) This is not the correct answer.
 - (b) This is the dominant idea in the whole passage. The presence of “physical barriers” have prevented homogenization.
 - (c) This is not clearly stated in the passage.
 - (d) This idea of “physical barriers” is the most important reasons for the others.
111. (a)
- (a) This obviously the correct answer, because it is the most practical one. It is humanly possible to smuggle live organisms and to build highways.
 - (b) It is not easy nor practical to make ecosystems sensitive. So this option is ruled out.
 - (c) This option is also ruled out for the above said reason.
 - (d) It is very difficult and quite unnecessary to ensure new species do not have an impact on local species. So this option is also ruled out.
112. (c)
- Both the options (1) and (2) are correct.
113. (d)
- Natural selection is a key mechanism of evolution. It is the gradual, non-random, process by which biological traits become either more or less common in a population as a function of differential reproduction of their bearers. Variation exists within all populations of organisms. This occurs partly because random mutations cause changes in the genome of an individual organism, and these mutations can be passed to offspring. Throughout the individuals' lives, their genomes interact with their environments to cause variations in traits.
114. (b)
- 1 is not correct because the passage does not talk about all the poor countries.
- 2 is not correct because the passage talks about the role of pesticides in sustainable agriculture especially in poor countries.
115. (d)
- 3 is correct as the 2nd para clearly illustrates Alabama leaf-worm developing resistance to aldrin, DDT, dieldrin, endrin, lindane and toxaphene.
116. (a)
- The widespread use of pesticides has not waned because the ratio of cost to benefit for the individual agricultural producer has remained in favour of pesticide use.
117. (c)
- 1 is not correct as organic farming is not mentioned in the passage. Further the passage justifies the cost benefit to developed countries like USA.
- 2 is correct. Because of this problem it becomes imperative to use pesticides.
- 3 is wrong as the social and health costs have to be ignored because of the frightening prospects of the epidemic diseases.
118. (b)
- The passage does not talk about any alternative option to chemical pesticides. It talks about a balance being drawn between sustainability and use of pesticides.
119. (d)
- Refer to the last sentence of the passage.
120. (c)
- Refer to the last sentence of the first paragraph.
121. (b)
- Refer to the third sentence of the third paragraph.
122. (b)
- Refer to the first half of the third paragraph.
123. (c)
- Refer to the first sentence of the last paragraph.
124. (d)
- Option (d) is clearly not responsible for untimely payment of NREGS wages.
125. (a)
- According to the passage, none of (1), (2), (3) has been the consequence of delayed wage payments.
126. (b)
- (1) and (2) are not true in the context of the passage.
127. (c)
- Refer to the third sentence of the last paragraph.
128. (d)
- Refer to the second sentence of the last paragraph.
129. (b)
- Refer to the first two sentences of the second paragraph.
130. (d)
- Refer to the fourth sentence of the second paragraph.
131. (b)
- The answer can be easily inferred.
132. (b)
- (b) is clearly not true in the context of the passage.
133. (c)
- Refer to the second last and third last sentences of the last paragraph.
144. (d)
- The answer can be inferred from the first two paragraphs.
145. (d)
- Refer to the first sentence of the last paragraph.
146. (d)
- Refer to the last paragraph of the passage.
147. (c)
- According to the author only (B) and (C) are factors responsible for the declining interest in scientific research.
148. (a)
- Refer to the third paragraph of the passage.
149. (d)
- The answer can be inferred from the third paragraph.

150. (a) (1) is not true in the context of the passage.
151. (b) Refer to the first sentence of the fourth paragraph.
152. (a) Refer to the third paragraph of the passage.
153. (c) Refer to the second sentence of the third paragraph and to the last sentence of the passage.
154. (a) The answer can be inferred from the third paragraph of the passage.
155. (b) Refer to the fifth sentence of the second paragraph.
156. (b) The answer can be easily inferred from the passage.
157. (b) Refer to the second-half of the sixth paragraph.
158. (d) Refer to the first few sentences of the seventh paragraph.
159. (a) The answer is quite clear and obvious.
175. (d) The passage revolves around the problem of habitat fragmentation which poses a serious threat to biodiversity conservation.
176. (a) When forest lands get fragmented human activities start on the edges of these fragmented lands which results in degradation of entire forests. Therefore continuity of the forested landscapes and corridors should be maintained.
177. (c) The discharge of agricultural slurry into watercourses should be restricted because watercourses do not contain the microorganisms that can decompose organic components of agricultural slurry. Secondly, the discharge may lead to the eutrophication of water bodies.
178. (b) Discharged agricultural slurry has been referred to as pollutant and decomposed slurry in soil as fertilizer.
179. (b) The pollutants are added to both the soil and water. Soil doesn't get polluted as microorganisms convert pollutant into fertilizer. Water is enriched with the nutrient which flows through streams, rivers and lakes. These nutrients are responsible for eutrophication which results in decomposition of algal blooms.
180. (b) Cultural eutrophication will result in loss of flora and fauna as eutrophication of water bodies do not allow oxygen to pass through it.
181. (c) The theme of the passage is based on how the agricultural slurry when discharged in water causes cultural eutrophication resulting ecosystem service loss. The magnitude of the problem has been so much that the scientists have noticed huge 'dead zones' near big water bodies which means destruction of aquatic life.
182. (b) Man's physical need is never going to cease as long as man is craving for it. Desire brings along miseries. If man doesn't realize this and keeps on doing what he is doing then no physical help can reduce his miseries. It is man's nature which is responsible for all the miseries. The only solution to this is man's spiritual growth and bringing change in his character.
183. (d) The author gives primary importance to spiritual growth in man in eradicating human misery.
184. (c) The democracies in the west have evolved over a period of time because of people's participation in the democratic process. The western democracies have institutionalized the various instruments of governance. As a result their democracies are far more robust than the newly formed democracies.
185. (d) Statement 1 is incorrect.
Statement 2 is also incorrect because it can be inferred from the first paragraph that sometimes western nations are trying to impose democracy on non-western nations but it cannot be inferred that western countries are always trying to impose democracy on non-western.
186. (a) Statement 1 is correct as it can be inferred from the information given in the passage that companies shall comply with all the laws of land.
187. (a) Good corporate influence have positive influence on the share price of the company as mentioned in last few lines of paragraph. Corporate governance is one of the criteria for the foreign institutional investors when they decide to buy a company.
188. (c) Malnutrition occurs due to not eating adequate quantity of food. The knowledge of the food needs of younger children can curb this problem.
189. (b) Taking care of a young child is often left to an older sibling by working mothers. Public health authorities do not find a mention in the passage hence (a) is correct.
190. (c) Policy intervention can save the farmers from agricultural risk. Because Indian farmers are risk averse. So they design inputs and cropping patterns to reduce risk not to maximize their profit.
191. (b) Agricultural risks can be tackled with many strategies like crop insurance, price stabilization, development of varieties resistant to pests and diseases. So no single risk specific policy is sufficient to reduce it.
192. (b) According to the passage, weak global economic prospects and continuing uncertainties in the international markets as well as sovereign risk concerns, particularly in the Euro area have had their impact on the emerging market economies.
193. (c) The Indian financial market are affected by global changes mainly due to the contagion of Greece's sovereign debt problem spreading to India.
194. (d) Since the Indian financial system is bank dominated banks' ability to withstand stress is critical to overall financial stability.
195. (a) With further globalization, consolidation, deregulation and diversification, risk and liquidity management assumes more importance in the Indian banking system in future.
196. (b) When Oxygen is shut from entering the decomposition doesn't take place completely. The carcasses inside the sedimentary rocks get transformed into crude oil due to heat and pressure.

197. (c) The layers of Sedimentary rocks become thicker and heavier due to deposition and create pressure on the marine creatures under it, which in turn change the carcasses into crude oil.
198. (c) The apologists of the free market system believe in the ability of the market to self correct. Their discussions are generally about free market operations and forces, on the efficiency of such enterprises and their ability for self correction.
199. (c) Ideological bias means an opinion that is of a partial nature. Here the idea expressed in the passage is that an unregulated market is free and competent.
200. (c) It is clearly said that the arguments betray meaning give away a biased opinion. So statement (1) referring to the false ideology of capitalism is one of the options. It is also mentioned that a more honest analysis would reflect the resultant gross inequality. So statement (4) is also the correct option.
201. (c) According to the passage net profits are only 2.2% as far as the central public sector undertakings are concerned. So statement (2) is correct. The private sector has grown. There is a larger base with more educated and moneyed people around. Hence statement (3) is correct too from the point of view of the paragraph. The role of governmental institutions in encouraging competition among the private sector enterprises ensures the continuing growth of this sector.
202. (b) The rural roads should be in the domain of the public sector only because the sparse or the little traffic in these roads makes it impossible to make profits on the road tax or tolls as they are called.
203. (c) The government does invest in different industrial sectors. This is what the paragraph says. Indeed there is governmental investment in a variety of industries from airlines, roads, steel, and finance to industries where the private sector plays a prominent role. For in the latter it acts as the umpire or the regulating agency so as to create a competitive atmosphere for the growth of entrepreneurship.
204. (a) The government acts as a regulating agency by prescribing broad norms within which the private enterprises can conduct their business in an atmosphere of fair and fearless competition. That is why the government is made the umpire in a field of business players.
205. (a) According to the passage the melting of glaciers from the Himalayas will lead to increased run offs or flow of water in the next 30 years, after which it will decrease so statement (1) is one of the factors which will force the shifting of location of existing crops due to climatic conditions. Temperatures will increase by 1 degree centigrade over the same period all over the world, and the sea level is expected to rise by 10cm, so obviously very hot places cannot be suitable for certain crops. So statement (2) is also correct. Due to drought conditions and monsoon variations certain areas will give poor crop productivity. So crop production will have to be shifted to more suitable areas to adjust with ecological imbalances. Hence statement (3) has to be included in the answer too.
206. (c) As India is likely to experience changed weather patterns in the future it is important to invest in research and development in agriculture so that it is possible to locate and identify the areas which will be most suitable for different crops.
207. (c) According to the passage there should be changes in lifestyle; especially the overuse of technology should be stopped at all cost as stated in statement (3). There should be less consumption of animal protein that is meat. The FAQ or the Food Administration Organization claims that nearly 18% of greenhouse gases are emitted from livestock. So statement (1) is also true.
208. (a) As Indians we continue to depend on fossil fuel heavily because of the lack of investment in research and development in other forms of energy which are so readily available. The lack of technological development prevents us from harnessing the resources of wind, solar and biomass energy, which are readily available.
209. (d) According to the passage the mitigation of greenhouse gases cause lower air pollution, this will lead to better health among the public, as a result there will be less expenditure on public health as stated in statement (1); scientists have already predicted that the emission of greenhouse gases will have disastrous impact on climate change in the next 30 years and worst still after that. So statement (4) is also correct.
210. (b) The essential message conveyed by the passage is that it is absolutely essential to reduce to a very great extent the emission of greenhouse gases into the atmosphere.
211. (c) In this passage the author wants to convey that the best way to ensure the prosperity and further economic growth of the nation is by implementing inclusive growth where the benefits of growth are shared by the entire population and not by certain segments only.
212. (c) To make the process of inclusive growth more effective the author suggests that we should not only concentrate on the poorer sections of society, but also ensure that the rich and middle class stand to gain certain points. In this way it will be possible to redistribute the economic gains made by these sections of society to those getting left behind.
213. (d) According to the passage eradication of poverty is not a sufficient condition for growth. So statement (1) is ruled out. Growth has to be treated as an instrument for ensuring prosperity for all. But this is yet to be attained. So India has to strive on. So statement (2) is also ruled out.

214. (b) If the price of crude oil is x and the exchange rate is y , and if such a transparent formula is set in place by the government the oil companies can make profits by innovating within the rules and regulations of anti-trust and other competition laws. To ensure greater profits they will also have to find out ways to cut costs. So statements (2) and (3) have been selected.
215. (a) According to the passage private oil companies can re-enter the oil producing market if a transparent rule based petrol pricing exists because they will be able to innovate, cut their costs and earn more profits which is an attractive incentive for any business.
216. (d) According to the passage due to the adverse impact of climatic change on the ecosystem can be a possible loss of certain species of animals and their habitats and also a decrease in the services of the ecosystem. (d) option is correct.
217. (b) The passage clearly states that the climatic change may have an adverse affect on the Himalayan ecosystem, by altering temperatures, changing precipitation patterns , leading to drought and consequently the death of several species of animals and plants including humans.
218. (b) The most important message conveyed in the passage is summed up in the last few lines. The idea is to shift the attention from merely the species-habitat focus to the entire biographical range meaning all the plants and animals including humans so that climatic adjustments can be taken care of more effectively.
219. (b) It is clear from the passage that not only human activity is causing environmental pollution, but also natural reasons can adversely affect climate systems. This is clearly stated in the first four lines of the passage.
220. (a) According to the passage government interference leads to distortions and inefficiency in the economy in the sense that there is room for corruption as well as a lack of interest in investment on the part of the entrepreneurs.
221. (c) The first paragraph states that the basic philosophy of globalization is to ensure absolute freedom for the markets, to set their prices, produce their goods, and distribute them as per their own criterion.
222. (c) The passage clearly states that in accordance with the conditions set by the WTO. Etc. for globalization, public sectors should be privatized. So statement (1) is correct. Employment and wages should be conditioned by the free play of the market forces involved, otherwise it might discourage investment as stated in statement (3). Even social services like health and education should welcome private players as is correctly expressed in statement (4).
223. (b) The entire passage focuses on the fact that the state should play a reducing role in the process of globalization. This is elaborated in the last few lines of the passage with particular reference to India.

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ISBN : 9789385846656

Max. Marks : 40

No. of Qs. 20

Time : 20 min.

Date :/...../.....

- Consider the following statements regarding asteroids:
 - Asteroids are rocky debris of varying size orbiting the sun.
 - Most of the asteroids are small but some have diameter as large and 1000 km.
 - The orbit of asteroids lies between the orbits of Jupiter and Saturn.

Of these statements:

- | | |
|----------------|-------------|
| (a) 1, 2 and 3 | (b) 2 and 3 |
| (c) 1 and 2 | (d) 1 and 3 |

- Which of the following are correct?

- In the behaviour of earthquake waves, we study only three types of waves and they are 'S' - Surface waves, 'L' - Longitudinal waves and 'P' transverse.
- The velocity of P - waves and S - waves increase with the depth throughout.
- L - waves do not pass through the mantle because it is a liquid layer.
- S - waves persist only to surface and do not penetrate deep into earth.

Select the correct answer from the codes given below:

- | | |
|-------------------|-------------|
| (a) 2 and 4 | (b) 1 and 3 |
| (c) 1, 2, 3 and 4 | (d) None |

- Consider the following statements:

- Albedo of an object determines its visual brightness when viewed with reflected light.
- Albedo of Mercury is much greater than the albedo of the Earth.

Which of the statements given above is/are correct?

- | | |
|------------------|------------|
| (a) 1 only | (b) 2 only |
| (c) 1 and 2 both | (d) None |

- Consider the following statements:

- On the planet Earth, the fresh water available for use amounts to about less than 1% of the total water found.
- Of the total fresh water found on the planet Earth 95% is bound up in polar ice caps and glaciers.

Which of the statements given above is/are correct?

- | | |
|------------------|------------|
| (a) 1 only | (b) 2 only |
| (c) 1 and 2 both | (d) None |

- Earthquakes are important in landform studies because they can trigger catastrophic events like

- Landslides and mudflows
- Glacier surges
- Tsunamis causing damage and shoreline changes

Select the correct answer from the codes given below.

- | | |
|----------------|-------------|
| (a) 1, 2 and 3 | (b) 3 only |
| (c) 1 and 2 | (d) 1 and 3 |

- Which of the following are true with respect to fold mountains?

- Their tops are often buried beneath snow and ice.
 - They form rugged peaks.
 - They are caused by contraction of the earth's crust.
 - They contain a core composed of metamorphic and igneous rocks.
- | | |
|----------------|----------------|
| (a) 1, 3 and 4 | (b) 2, 3 and 4 |
| (c) 1 and 2 | (d) 1 and 4 |

- Match list I with List II.

List-I	List-II
(A) L.Lonar	(1) Crater lake
(B) L.Chilka	(2) Lagoon
(C) Volcanoes of	(3) Shield volcano

Hawaiian islands

- | | |
|-----------------|-----------------|
| (D) Mt.Vesuvius | (4) Cinder cone |
|-----------------|-----------------|

Select the correct option from the codes given below:

- | |
|-----------------------------------|
| (a) A - 2 ; B - 1 ; C - 4 ; D - 3 |
| (b) A - 1 ; B - 2 ; C - 4 ; D - 3 |
| (c) A - 4 ; B - 3 ; C - 2 ; D - 1 |
| (d) A - 1 ; B - 2 ; C - 3 ; D - 4 |

- Consider the following statements about the 'Roaring Forties':

- They blow uninterrupted in the northern and Southern Hemispheres.
- They blow with great strength and constancy.
- Their direction is generally from north-west to east in the Southern Hemisphere.
- Overcast skies, rain and raw weather are generally associated with them.

Which of these statements are correct?

- | | |
|----------------|----------------|
| (a) 1, 2 and 3 | (b) 2, 3 and 4 |
| (c) 1, 3 and 4 | (d) 1, 2 and 4 |

- Which of the following are correct?

- The evaporation leads to the cooling of adjacent air.
- The basis for all factors which favours evaporation is the vapour pressure at a water surface.
- The specific humidity of air remains constant when there is no gain or loss of moisture, though the absolute humidity changes.
- The dew-point temperature is the temperature at which condensation starts if the air is sufficiently cooled.

Select the correct answer from the codes given below:

- | | |
|----------------|-------------------|
| (a) 1, 2 and 3 | (b) 1, 2, 3 and 4 |
| (c) 1, 2 and 4 | (d) 2, 3 and 4 |

- Which of the following statements are true with regard to tropical monsoon climate?

- Temperatures range from 32°C in the hot season to about 15°C in the cool season.
- Annual rainfall varies greatly.
- The climate is best developed in the southern continents.
- It consists of three main seasons, i.e., cool, dry season; hot, dry season; hot, wet season.

Choose the correct option:

- | | |
|-------------|----------------|
| (a) 1 and 4 | (b) 2, 3 and 4 |
| (c) 2 and 3 | (d) 1, 2 and 4 |

- Match list I with List II.

List-I

- | | |
|---------|---|
| (A) Fog | (1) A mass of minute droplets of water or tiny crystals of ice formed by the condensation of water vapour in free air at considerable elevations. |
|---------|---|

- | | |
|-----------|--|
| (B) Cloud | (2) Condensation at a dew point which is at or below freezing point. |
|-----------|--|

- | | |
|-----------------|---|
| (C) White Frost | (3) Moisture deposited in the form of water droplets on cooler surface of solid objects such as stones, grass blades etc. |
|-----------------|---|

- | | |
|---------|--|
| (D) Dew | (4) A mass of minute droplets of water formed by the condensation of water vapour in free air with its base at or near ground. |
|---------|--|

Select the correct option from the codes given below:

- | |
|-----------------------------------|
| (a) A - 4 ; B - 2 ; C - 1 ; D - 3 |
|-----------------------------------|

HINTS & EXPLANATIONS

1. (c) The asteroids are group of small pieces of rocky debris of different sizes. Some asteroids are small and some asteroids even have diameter 1000 km. The asteroids revolve between Mars and Jupiter.
2. (d) Seismic waves are waves of energy that travel through the Earth's layers, and are a result of an earthquake, explosion, or a volcano that imparts low-frequency acoustic energy. Many other natural and anthropogenic sources create low amplitude waves commonly referred to as ambient vibrations. Seismic waves are studied by geophysicists called seismologists. Seismic wave fields are recorded by a seismometer, hydrophone (in water), or accelerometer.
3. (a) Albedo is the fraction of the incident sunlight that is reflected. When an object reflects most of the light that hits it and looks bright then it has high albedo. Albedo of mercury is least among the plants.
4. (d) Only 1.2% of water is stored as fresh water and about 95% is stored in oceans.
5. (a) Earthquakes are important in landform studies because they can trigger off catastrophic events in erosion processes. These include large-scale landslides and mud flows. A number of spectacular glacier surges have been observed in Alaska, and some are thought to be associated with earthquakes. Tsunamis are seismic sea waves, which can arrive at coasts with great force, causing considerable damage and shoreline changes.
6. (a) Fold mountains are mountains formed mainly by the effects of folding on layers in the upper part of the Earth's crust. The term is rather out of date, though still fairly common in physical geography literature.
7. (d) Lonar Lake is a saline soda lake located at Lonar in Buldana district, Maharashtra, India, which was created by a meteor impact during the Pleistocene Epoch. Chilka Lake is a brackish water lagoon, spread over the Puri, Khurda and Ganjam districts of Odisha state on the east coast of India, at the mouth of the Daya River, flowing into the Bay of Bengal, covering an area of over 1,100 km². The Hawaiian Islands are at the southeastern end of a chain of volcanoes that began to form more than 70 million years ago. Many of these volcanoes formed islands that have subsided and eroded beneath sea level, and some of the old volcanoes probably never reached sea level. Mount Vesuvius is a stratovolcano in the Gulf of Naples, Italy, about 9 km (5.6 mi) east of Naples and a short distance from the shore. It is one of several volcanoes which form the Campanian volcanic arc.
8. (b) The Roaring forties blows in 40°S to 50°S, this wind blows only in south hemisphere because there is limited land mass to slow them down. It is a strong wind in South Indian Ocean.
9. (b) Evaporation is an essential part of the water cycle. The sun (solar energy) drives evaporation of water from oceans, lakes, moisture in the soil, and other sources of water. In hydrology, evaporation and transpiration (which involves evaporation within plant stomata) are collectively termed evapotranspiration. Evaporation of water occurs when the surface of the liquid is exposed, allowing molecules to escape and form water vapor; this vapor can then rise up and form clouds.
10. (d) Tropical monsoon climates have monthly mean temperatures above 18 °C in every month of the year and feature wet and dry seasons, as Tropical savanna climates do. Unlike tropical savanna climates however, a tropical monsoon climate's driest month sees less than 60 mm of precipitation but more than (100 - [total annual precipitation {mm}/25]). Also a tropical monsoon climate tends to see less variance in temperatures during the course of the year than a tropical savanna climate. This climate has a driest month which nearly always occurs at or soon after the "winter" solstice for that side of the equator.
11. (d) There are three distinct ways that rain can occur. These methods include orographic rainfall. Convective precipitation is generally more intense, and of shorter duration, than stratiform precipitation. Precipitation can also fall in two phases, either liquid or solid. Liquid forms of precipitation include rain and drizzle. Rain or drizzle which freezes on contact within a subfreezing air mass gains the preceding word of freezing, becoming known as freezing rain or freezing drizzle. Frozen forms of precipitation include snow, ice needles, sleet, hail, and graupel. Intensity is determined either by rate of fall, or by visibility restriction.
12. (d) All the statements given in the question are correct.
13. (b) Shivasamudram falls is located on river Cauvery. Jog waterfall is the highest waterfall in India of 253 metres on Sharavathi river.
14. (d) A glacier is a persistent body of dense ice that is constantly moving under its own weight; it forms where the accumulation of snow exceeds its ablation (melting and sublimation) over many years, often centuries. Glaciers slowly deform and flow due to stresses induced by their weight, creating crevasses. They also abrade rock and debris from their substrate to create landforms such as cirques and moraines. Glaciers form only on land and are distinct from the much thinner sea ice and lake ice that form on the surface of bodies of water.
15. (c) Silent valley is located in Nilgiri hills. The other two statements are correct.
16. (b) Andhra Pradesh is an exporter of many agricultural products and is also known as Rice Bowl of India. Four important rivers of India, the Godavari, Krishna, Penna, and Thungabhadra flow through the state, providing irrigation. Besides rice, farmers of this state also grow wheat, jowar, bajra, maize, minor millet, coarse grain, many varieties of pulses, oil seeds, sugarcane, cotton, Chili pepper, mango nuts and tobacco.
17. (b) All the statements given in the options are correct.
18. (b) Both eastern and western ghats of India is covered by evergreen forests as the areas receive near about 250 cm rainfall per year.

19. (c) The Tehri Dam is the highest dam in India and one of the tallest in the world. It is a multi-purpose rock and earth-fill embankment dam on the Bhagirathi River near Tehri in Uttarakhand, India. It is the primary dam of the THDC India Ltd. and the Tehri hydroelectric complex.
20. (a) The best quality iron ore is Magnetic with 72.36% iron followed by Hemitite with 69.94%, Sideritic with 48.20% and Limentic 36.80%.

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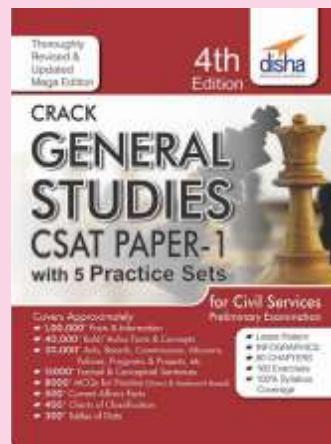
EMEMPLOYMENT NEWS

IMPORTANT COMMISSIONS / INSTITUTIONS – Statement Based MCQ's with Explanations



Statement Based MCQ

This Chapter is taken from :



ISBN : 9789385846236

9. Consider the following statements about the recent amendments to the Election Law by the Representation of the People (Amendment) Act, 1996 :

 1. Any conviction for insulting the Indian National flag or the Constitution of India shall entail disqualification for contesting elections to Parliament and state legislatures for six years from the date of conviction.
 2. There is an increase in the security deposit which a candidate has to make to contest the election to Lok Sabha.
 3. A candidate cannot stand for election from more than one parliamentary constituency.
 4. No election will now be countermanded on the death of a contesting candidate.

Which of the above statements are correct?

 - (a) 2 and 3 (b) 1, 2 and 4
 - (c) 1 and 3 (d) 1, 2, 3 and 4

10. Which statements are correct about the rights of the District Council of an autonomous district?

Council may make regulations to

 1. license money-lending business
 2. prescribe the maximum rate of interest to be charged by a money-lender
 3. prevent non-Schedule Tribe residents from carrying on business without a license
 4. do any of the above provided it is passed by a majority of 2/3 of the total membership of the District Council

Which of the following statements is/are correct?

 - (a) 1 and 2 (b) 1, 2 and 3
 - (c) 2 and 3 (d) 1, 2, 3 and 4

11. National Commission of Scheduled Castes:

 1. has a chairperson, a vice chairperson and four other members
 2. the tenure of office of the chairperson is fixed as three years
 3. conditions of service of the members are as the President may by rule determine

Which of the following statements is/are correct?

 - (a) 1 and 2 (b) 2 only
 - (c) 1 and 3 (d) 3 only

12. National Commission for Scheduled Tribes

 1. is a constitutional body
 2. inquires into specific complaints with respect to deprivation of rights and safeguards of the Scheduled Tribes
 3. has a chairman, vice-chairman and three other members
 4. is to present to Parliament, an annual report upon the working of safeguards of the Scheduled Tribes

Which of the following statements is/are correct?

 - (a) 1, 2 and 3 (b) 2, 3 and 4
 - (c) 1 and 2 (d) 1, 2, 3 and 4

13. Consider the following statements about the minorities in India:

 1. The Government of India has notified five communities, namely, Muslims, Sikhs, Christians, Buddhists and Zoroastrians as Minorities.
 2. National Commission for Minorities was given statutory status in 1993.
 3. The smallest religious minority in India are Zoroastrians.
 4. Constitution of India recognises and protects religious and linguistic minorities.

Which of these statements are correct?

 - (a) 2 and 3 (b) 1 and 4
 - (c) 2, 3 and 4 (d) 1, 2 and 4

14. Article 164 of the Constitution provides for a minister in charge of tribal welfare in:

 1. Bihar 2. Chhattisgarh
 3. Madhya Pradesh 4. Odisha

Which of the above is/are correct?

 - (a) 1, 2 and 3 (b) 2, 3 and 4
 - (c) 2 and 3 only (d) 1, 2, 3 and 4

15. A political party becomes a national party if:

 1. it is recognised as a State party in at least three States
 2. it wins 2% of seats in the Lok Sabha from at least three different States

Which of the above is/are correct?

 - (a) 1 and 2 (b) 1 only
 - (c) Neither 1 nor 2 (d) 2 Only

16. To be recognised as a State party, a political party should:

 1. win at least one seat for every 25 Lok Sabha seats, or any fraction thereof.
 2. secure 6% of valid votes polled in that State at a general election to the House of the People

Which of the following statements is/are correct?

 - (a) 1 only (b) 2 only
 - (c) Both 1 and 2 (d) Neither 1 nor 2

17. According to the anti-defection law:

 1. it is not possible for 1/3 of a legislature party to go over to another party claiming a 'split'.
 2. all disputes arising out of interpretation of the anti-defection law are decided by the Election Commission.

Which of the following statements is/are correct?

 - (a) 1 only (b) 2 only
 - (c) Both 1 and 2 (d) Neither 1 nor 2

18. The UPSC derives its functions from which of the following sources?

 1. Constitution
 2. Parliamentary laws
 3. Executive rules and orders
 4. Conventions

Which of the above is/are correct?

 - (a) 1 only (b) 1 and 2
 - (c) 1 and 3 (d) 1, 2, 3 and 4

19. Which of the following statements are correct?

 1. The Constitution does not fix the number of members of the UPSC.
 2. One-half of the members of the UPSC should be persons who have held office under the Government of India or of a state atleast for five years.

3. The Chairman and members of the UPSC hold office for a term of five years or until they attain the age of 60 years.
4. The salaries and allowances of the members of the UPSC are determined by the Parliament.
5. The entire expanses of UPSC are charged on the Consolidated Fund of India.
- Which of the following statements is/are correct?
- (a) 2, 4 and 5 (b) 1 and 5
 (c) 2, 3 and 4 (d) 1, 4 and 5
20. Which of the following statements are correct with regard to the prohibition as to the holding of offices by members of Public Service Commissions on ceasing to be such members?
1. The Chairman of the UPSC shall be ineligible for further employment either under the Government of India or under the government of a state.
 2. The Chairman of a SPSC shall be eligible for appointment as Chairman or any other member of the UPSC or as Chairman of any other SPSC, but not for any other employment either under the Government of India or under the government of a state.
 3. A member other than Chairman of the UPSC shall be eligible for appointment as Chairman of the UPSC or as Chairman of a SPSC, but not for any other employment, either under the Government of India or under the government of a state.
 4. A member other than Chairman of the SPSC shall be eligible for appointment as Chairman or any other member of the UPSC or as Chairman of that or any other SPSC, but not for any other employment either under the Government of India or under the government of a state.
- Which of the following statements is/are correct?
- (a) 1 only (b) 2 and 4
 (c) 1 and 3 (d) 1, 2, 3 and 4
21. Which of the following statements related to the Central Administrative Tribunal are correct?
1. It is a statutory body.
 2. Its members are drawn from administrative background only.
 3. It is not bound by the procedure prescribed in the code of civil procedure.
 4. Its jurisdiction covers the members of All India Services as well as Central Services and Central Government posts.
 5. It was setup in 1985.
- Which of the following statements is/are correct?
- (a) 2, 3 and 5 (b) 1 and 4
 (c) 1, 3, 4 and 5 (d) 2 and 3
22. Which of the following civil services find mention in the Constitution?
1. Indian Administrative Service
 2. Indian Forest Service
 3. Indian Police Service
 4. All-India Judicial Service
 5. Indian Foreign Service
23. Which of the above is/are correct?
- (a) 1 and 3 (b) 1, 2 and 3
 (c) 1, 3 and 5 (d) 1, 3 and 4
24. Which of the following are not the concerns of the UPSC?
1. Classification of services
 2. Promotion
 3. Training
 4. Disciplinary matters
 5. Talent hunting
- Which of the above is/are correct?
- (a) 2, 4 and 5 (b) 1, 3 and 4
 (c) 1 and 3 (d) 1 and 4
25. Which of the following are correct with regard to the functions of the UPSC?
1. To conduct examinations for appointments to the services of the Union.
 2. To assist states, if requested, in framing and operating schemes of joint recruitment for any services for which candidates possessing special qualifications are required.
 3. To advise the Union and state governments on all matters relating to methods of recruitment to civil services and for civil posts.
 4. To present, annually, to the President a report as to the work done by it.
- Which of the following statements is/are correct?
- (a) 1, 2 and 3 (b) 1, 3 and 4
 (c) 1, 2 and 4 (d) 1, 2, 3 and 4
26. Consider the following functionaries:
1. Cabinet Secretary
 2. Chief Election Commissioner
 3. Union Cabinet Ministers
 4. Chief Justice of India
- Their correct sequence, in order of precedence is
- (a) 3, 4, 2, 1 (b) 4, 3, 1, 2
 (c) 4, 3, 2, 1 (d) 3, 4, 1, 2
27. Consider the following statements about the minorities in India:
1. The government of India has notified five communities, namely, Muslims, Sikhs, Christians, Buddhists and Zoroastrians as Minorities.
 2. The National Commission for Minorities was given statutory status in 1993.
 3. The smallest religious minority in India are the Zoroastrians.
 4. The Constitution of India recognizes and protects religious and linguistic minorities.
- Which of these statements are correct?
- (a) 2 and 3 (b) 1 and 4
 (c) 2, 3 and 4 (d) 1, 2 and 4
28. Consider the following statements regarding the National Human Rights Commission of India:
1. Its Chairman must be retired Chief Justice of India.
 2. It has formations in each state as State Human Rights Commission
 3. Its powers are only recommendatory.
 4. It is mandatory to appoint a woman as a member of the Commission.

- Which of the above statements are correct?
- 1, 2, 3 and 4
 - 2 and 4
 - 2 and 3
 - 1 and 3
28. Consider the following statements regarding the political parties in India.
- The representation of the People's Act, 1951 provides for the registration of political parties.
 - Registration of political parties is carried out by the Election Commission.
 - A national level political party is one which is recognized in four or more states.
 - During the 1999 general elections, there were 6 national and 48 state level parties recognized by the Election Commission.
- Which of these statements are correct ?
- 1, 2 and 4
 - 1 and 3
 - 2 and 4
 - 1, 2, 3 and 4
29. Consider the following statements with reference to India.
- The Chief Election Commissioner and other election commissioners enjoy equal powers but receive unequal salaries.
 - The Chief Election Commissioner is entitled to the same salary as is provided to a judge of the Supreme Court.
 - The Chief Election Commissioner shall not be removed from his office except in like manner and on like grounds as a judge of the Supreme Court.
 - The term of office of the Election Commissioner is 5 years from the date he assumes his office or till the day he attains the age of 62 years, whichever is earlier.
- Which of these statements are correct ?
- 1 and 2
 - 2 and 3
 - 1 and 4
 - 2 and 4
30. Which of the following have recommended the establishment of public sector corporations ?
- Administrative Reforms Commission
 - Krishna Menon Committee
 - Estimates Committee
 - Arjun Sengupta Committee
- 1 only
 - 1 and 3
 - 1 and 4
 - 1 and 2
31. Consider the following statements :
- Central Administrative Tribunal (CAT) was set up during the Prime Ministership of Lal Bahadur Shastri.
 - The Members for CAT are drawn from both judicial and administrative streams.
- Which of the statements given above is/are correct ?
- 1 only
 - 2 only
 - Both 1 and 2
 - Neither 1 nor 2
32. Which of the following can be said to be essentially the parts of 'Inclusive Governance'?
- Permitting the Non-Banking Financial Companies to do banking
 - Establishing effective District Planning Committees in all the districts
3. Increasing the government spending on public health
4. Strengthening the Mid-day Meal Scheme
- Select the correct answer using the codes given below :
- 1 and 2
 - 3 and 4
 - 2, 3 and 4
 - 1, 2, 3 and 4
33. Consider the following:
- Disputes with mobile cellular companies
 - Motor accident cases
 - Pension cases
- For which of the above are Lok Adalats held?
- 1 only
 - 1 and 2
 - 2 only
 - 1, 2 and 3
34. Which of the following is/are extra-constitutional and extra-legal device(s) for securing cooperation and coordination between the States in India?
- The National Development Council
 - The Governor's Conference
 - Zonal Councils
 - The Inter-State Council
- Codes:
- 1 and 2
 - 1, 2 and 3
 - 1, 2 and 4
 - 2 only
35. Arrange the following stages in recruitment process in proper order—
- | | |
|--------------|------------------|
| 1. Selection | 2. Appointment |
| 3. Placement | 4. Certification |
| 5. Probation | 6. Orientation |
- 1, 4, 2, 6, 3, 5
 - 4, 1, 2, 6, 3, 5
 - 4, 1, 2, 5, 3, 6
 - 1, 2, 4, 6, 3, 5
36. Consider the following statements
- Report of the Administrative Reforms Commission, headed by late Morarji Desai, recommended the establishment of Lokpal and Lokayukta institutions.
 - Lokpal is the highest institution in India to investigate corruption at higher places in Government.
- Which of the statements given above is/are correct?
- 1 only
 - 2 only
 - Both 1 and 2
 - Neither 1 nor 2
37. Which among the following statements with respect to the Comptroller and Auditor General of India is/are correct?
- The procedure and grounds for his removal from the office are the same as of a Judge of Supreme Court.
 - He prescribes the form in which accounts of the Union and the States are to be kept.
- Select the correct answer using the code given below
- I only
 - II only
 - Both I and II
 - Neither I nor II
38. Assertion (A) The number of the Members of the Union Public Service Commission is preserved in the Constitution of India.
Reason (R) The Union Public Service Commission was constituted under the provisions in the Constitution of India.

- Codes:**
- Bath A and R are true and R is the correct explanation of A
 - Both A and R are true, but R is not the correct explanation of A
 - A is true, but R is false
 - A is false, but R is true
39. Consider the following statements
- The maximum number of the Judges of the Supreme Court of India is prescribed in the Constitution of India.
 - The maximum number of the Members of the Union Public Service Commission is prescribed in the Constitution of India.
- Which of the statements given above is/are correct?
- Only 1
 - Only 2
 - Both 1 and 2
 - Neither 1 nor 2
40. Consider the following statements
- The Chairman and the Members of the UPSC are appointed by the President.
 - The Chairman and the Members of the UPSC are eligible for further employment under the Government.
- Which of the statements given above is/are correct?
- Only 1
 - Only 2
 - Both 1 and 2
 - Neither 1 nor 2
41. Consider the following statements with respect to the Attorney General of India
- He is appointed by the President.
 - He must have the same qualifications as are required by a Judge of High Court.
 - In the performance of his duties he shall have the right of audience in all courts of India.
- Which of the statements given above is/are correct?
- Only 1
 - 1 and 3
 - 2 and 3
 - 1, 2 and 3
42. Consider the following statements with respect to the Comptroller and Auditor General of India
- He shall only be removed from office in like manner and on the ground as a Judge of the Supreme Court.
 - He shall not be eligible for further office either under the Government of India or under the Government of any State after he has ceased to hold his office.
- Which of the statements given above is/are correct?
- Only 1
 - Only 2
 - Both 1 and 2
 - Neither 1 nor 2
43. Consider the following statements
- The Anti-Defection Law bans an elected member from voting against the explicit mandate of his/her party.
 - The Anti-Defection provisions do not apply if one-third of the members of a party disobey the mandate of the party and constitute themselves as a separate party.
- Which of the statement(s) given above is/are correct?
- Only 1
 - Only 2
 - Both 1 and 2
 - Neither 1 nor 2
44. Which one among the following is not a constitutional body in India?
- Comptroller and Auditor General
 - National Commissioner for religious and Linguistic Minorities
 - National Commission for Scheduled Castes
 - National Human Rights Commission in the eyes of the law.
45. Which of the following statements relating to Comptroller and Auditor General in India is/are correct?
- He/She is not an officer of the Parliament but an officer under the President.
 - He/She is an independent constitutional authority not directly answerable to the House.
- Select the correct answer using the codes given below
- Only 1
 - Only 2
 - Both 1 and 2
 - Neither 1 nor 2
46. Which of the following is/are extra-constitutional and extralegal device(s) for securing cooperation and coordination between the States in India?
- The National Development Council
 - The Governor's Conference
 - Zonal Councils
 - Inter-State Council
- Codes:**
- 1 and 2
 - 1, 2 and 3
 - 3 and 4
 - 4 only
47. Consider the following statements about the Attorney General of India:
- He is appointed by the President of India
 - He must have the same qualifications as are required for a judge of the Supreme Court
 - He must be a member of either House of Parliament
 - He can be removed by impeachment by Parliament
- Which of these statements are correct?
- 1 and 2
 - 1 and 3
 - 2, 3 and 4
 - 3 and 4
48. Consider the following statements:
- National Development Council is an organ of the Planning Commission.
 - The Economic and Social Planning is kept in the Concurrent List in the Constitution of India.
 - The Constitution of India prescribes that Panchayats should be assigned the task of preparation of plans for economic development and social justice.
- Which of the statements given above is/are correct?
- 1 only
 - 2 and 3 only
 - 1 and 3 only
 - 1, 2 and 3
49. Which of the following political parties is/are national political parties?
- Muslim League
 - Revolutionary Socialist Party
 - All India Forward Block
 - Peasants and Workers Party of India
- Codes:**
- 1, 2 and 3
 - 2 and 4
 - 3 only
 - None

50. Consider the following statements regarding the political parties in India:
1. The Representation of the People Act, 1951 provides for the registration of political parties
 2. Registration of political parties is carried out by the Election Commission
 3. A national level political party is one which is recognized in four or more states
 4. During the 1999 general elections, there were six national and 48 state level parties recognised by the Election commission
- Which of these statement are correct?
- (a) 1, 2 and 4 (b) 1 and 3
 (c) 2 and 4 (d) 1, 2, 3 and 4
51. Consider the following statements with reference to India:
1. The Chief Election Commission and other Election Commissioners enjoy equal powers but receive unequal salaries
 2. The Chief Election Commissioner is entitled to the same salary as is provided to a judge of the Supreme Court
 3. The Chief Election Commissioner shall not be removed from his office except in like manner and on like grounds as a judge of the Supreme Court
 4. The term of office of the Election Commissioner is five years from the date he assumes his office or till the day he attains the age of 62 years, whichever is earlier
- Which of these statements are correct?
- (a) 1 and 2 (b) 2 and 3
 (c) 1 and 4 (d) 2 and 4
52. Consider the following statements:
- The function(s) of the Finance commission is/are:
1. to allow the withdrawal of the money out of the Consolidated Fund of India
 2. to allocate between the States the shares of proceeds of taxes
 3. to consider applications for grants-in-aid from States
 4. to supervise and report on whether the Union and State governments are levying taxes in accordance with the budgetary provisions
- Which of these statements is/are correct?
- (a) Only 1 (b) 2 and 3
 (c) 3 and 4 (d) 1, 2 and 4
53. Consider the following tasks:
1. Superintendence, direction and conduct of free and fair elections
 2. Preparation of electoral rolls for all elections to the Parliament, state Legislatures and the Office of the President and the Vice-President
 3. Giving recognition to political parties and allotting election symbols to political parties and individuals contesting the election.

54. 4. Proclamation of final verdict in case of election disputes
- Which of the above are the functions of the Election Commission of India?
- (a) 1, 2 and 3 (b) 2, 3 and 4
 (c) 1 and 3 (d) 1, 2 and 4
54. Consider the following statements:
1. The Advocate General of a State in India is appointed by the President of India upon the recommendation of the Governor of the concerned State.
 2. As provided in Civil Procedure Code, High Courts have original, appellate and advisory jurisdiction at the State level.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only
 (c) Both 1 and 2 (d) Neither 1 nor 2
55. In India, other than ensuring that public funds are used efficiently and for intended purpose, what is the importance of the office of the Comptroller and Auditor General (CAG)?
1. CAG exercises exchequer control on behalf of the Parliament when the President of India declares national emergency/financial emergency.
 2. CAG reports on the execution of projects or programmes by the ministries are discussed by the Public Accounts Committee.
 3. Information from CAG reports can be used by investigating agencies to frame charges against those who have violated the law while managing public finances.
 4. While dealing with the audit and accounting of government companies, CAG has certain judicial powers for prosecuting those who violate the law.
- Which of the statements given above is/are correct?
- (a) 1, 3 and 4 only (b) 2 only
 (c) 2 and 3 only (d) 1, 2, 3 and 4
56. Consider the following statements : Attorney General of India can
1. take part in the proceedings of the Lok Sabha
 2. be a member of a committee of the Lok Sabha
 3. speak in the Lok Sabha
 4. vote in the Lok Sabha
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 and 4
 (c) 1, 2 and 3 (d) 1 and 3 only
57. The Departmental Committee of the Parliament of India on the welfare of the Schedule Castes (SCs) and the Scheduled Tribes (STs) shall
1. examine whether the Union Government has secured due representation of the SCs and the STs in the services and posts under its control.
 2. report on the working of the welfare programmes for the SCs and the STs in the Union Territories.
- Select the correct answer using the codes given below
- (a) Only 1 (b) Only 2
 (c) Both 1 and 2 (d) Neither 1 nor 2

Matching Based MCQ

DIRECTIONS (Qs. 58 and 61) : Match List-I with List-II and select the correct answer using the codes given below the lists.

- | | |
|--|---|
| 58. List-I | List-II |
| (A) Schedule | (1) Oath or affirmation |
| (B) Schedule Three | (2) Details of seat allotted to States in Rajya Sabha |
| (C) Schedule Four | (3) Administration and control of scheduled areas |
| (D) Schedule Five | (4) Salaries of President |
| (a) A - 1 ; B - 2 ; C - 3 ; D - 4 | |
| (b) A - 2 ; B - 3 ; C - 4 ; D - 1 | |
| (c) A - 4 ; B - 1 ; C - 2 ; D - 3 | |
| (d) A - 4 ; B - 2 ; C - 1 ; D - 3 | |
| 59. List I (Events) | |
| (A) Formation of the Bharatiya Janata Party | List II (Years) |
| (B) Acceptance of the Mandal Commission report | (1) 1990 |
| (C) Formation of the first communist government in an Indian state | (2) 1980 |
| (D) Passing of the 42 nd Amendment Act | (3) 1957 |
| | (4) 1976 |
| | (5) 1947 |

60. Match the following-
- | List-I | List-II |
|--------------------------|-----------------------|
| A. Third Pay Commission | 1. Varadachariar |
| B. First Pay Commission | 2. Raghbir Dayal |
| C. Fourth Pay Commission | 3. Jagannath Das |
| D. Second Pay Commission | 4. Singhal Rajamannar |
- Codes:
- | A | B |
|-------|---|
| (a) 1 | 3 |
| (b) 3 | 2 |
| (c) 2 | 1 |
| (d) 2 | 3 |
61. Consider the following statements about the Attorney-General of India?
1. He is appointed by the President of India
 2. He has the right to take part in the proceeding of the Parliament.
 3. He has the right of audience in all courts in India.
- Which of the statements given above are correct?
- (a) 1 and 2
 - (b) 1 and 3
 - (c) 2 and 3
 - (d) All of these

HINTS AND EXPLANATIONS

EXERCISE-2

- | | | | | | |
|---------|---|---------|---------|---------|--|
| 1. (d) | 2. (b) | 3. (d) | 4. (b) | 5. (c) | |
| 6. (a) | 7. (b) | 8. (c) | 9. (b) | 10. (b) | |
| 11. (d) | 12. (a) | 13. (d) | 14. (b) | 15. (d) | |
| 16. (b) | 17. (a) | 18. (d) | 19. (b) | 20. (d) | |
| 21. (c) | 22. (d) | | | | |
| 23. (c) | 24. (c) | 25. (c) | 26. (c) | 27. (a) | |
| 28. (d) | 29. (b) | 30. (d) | 31. (b) | 32. (c) | |
| 33. (d) | 34. (b) | | | | |
| 35. (c) | | | | | |
| 36. (c) | Lokpal and Lokayukta are established under the report of the administrative reforms commission headed by Morarji Desai to investigate corruption at higher places in government. | | | | |
| 37. (c) | | | | | |
| 38. (d) | A is false because the constitution without specifying the strength of the Commission has left the matter to the discretion of the president, who determines its composition. According to article 315, the UPSC consists of a chairman and other members appointed by the president of India. Articles 315 to 323 of Part XIV of the constitution provide for a Public Service Commission for the Union and for each state. | | | | |
| 39. (a) | Article 124 (a) of the Indian Constitution stipulates that "There shall be a Supreme Court of India constituting of a Chief Justice of India and, until Parliament by law prescribes a larger number, of not more than seven other Judges". At present the Supreme Court consists of thirty one judges (one chief justice and thirty other judges). Under article 315 the UPSC consists of a chairman and other members appointed by the president of India. The constitution without specifying the strength of the Commission has left the matter to the discretion of the president, who determines its composition. | | | | |
| 40. (a) | According to Article 316(a) of the Indian Constitution, the chairman and the members of the UPSC are appointed by the president. Under Article 316(c) a person who holds office as a member of a Public Service Commission shall, on the expiration of his term of office, be ineligible for re-appointment to that office. | | | | |
| 41. (b) | The Attorney General of India is the chief legal advisor of Indian government. He is appointed by the President of India under Article 76(a) of the Constitution. He must be a person qualified to be appointed as a Judge of the Supreme Court. The Attorney General has the right of audience in all Courts in India as well as the right to participate in the proceedings of the Parliament. He holds office during the pleasure of the President. The current Attorney General is Mukul Rohatgi (14th Attorney General). | | | | |
| 42. (c) | Under Article 148 of the Indian Constitution the Comptroller and Auditor General (CAG) of India is an authority who audits all receipts and expenditure of the Government of India and the state governments, including those of bodies and authorities substantially financed by the government. The CAG shall only be removed from office in like manner and on the like grounds as a judge of the Supreme Court of India : Article 148(a) | | | | |
| 43. (a) | The Comptroller and Auditor General shall not be eligible for further office either under the Government of India or under the Government of any State after he has ceased to hold his office : Article 148(d) | | | | |
| 44. (b) | The grounds for disqualification under the Anti-Defection Law are as follows: If he votes or abstains from voting in such House contrary to any direction issued by his political party or anyone authorised to do so, without obtaining prior permission. As a pre-condition for his disqualification, his abstention from voting should not be condoned by his party or the authorised person within 15 days of such incident. As per the 1985 Act, a 'defection' by one-third of the elected members of a political party was considered a 'merger'. Finally, the 91st Constitutional Amendment Act, 2003, changed this. So now at least two-thirds of the members of a party have to be in favour of a "merger" for it to have validity in the eyes of the law. | | | | |
| 45. (b) | National Commission for Religious and Linguistic Minorities was constituted by Government on 29 October 2004 to look into various issues related to Linguistic and Religious minorities in India. It is also called Ranganath Misra Commission because it was chaired by former Chief Justice of India Justice Ranganath Misra. | | | | |
| 46. (a) | The Comptroller and Auditor-General of India is appointed by the President of India. CAG is an authority that was established by the Constitution of India under article 148. Report of CAG of Union Accounts to be submitted to President who causes them to be laid before each house of parliament. | | | | |
| 47. (a) | Best answer is 1, 2 and 3. Because only Inter State Council is a constitutional body under article 263. So option 4 should not be included. | | | | |
| 48. (b) | Under Article 76, impeachment procedure of the Attorney-General is not provided. He shall hold office during the pleasure of the President. He must not be a member of either House of Parliament. | | | | |
| 49. (d) | Out of 52 items on the concurrent list, Economic and Social Planning is placed under Article 40 of the Constitution. Directive Principles of State Policy lays down that the State shall take steps to organize village panchayats and endow them with such powers and authority as may be necessary to enable them to function as units of self government. Planning for economic development and social justice is one such power given to village panchayats. | | | | |
| 50. (d) | All the parties mentioned are state level parties.
All the statements are correct. | | | | |

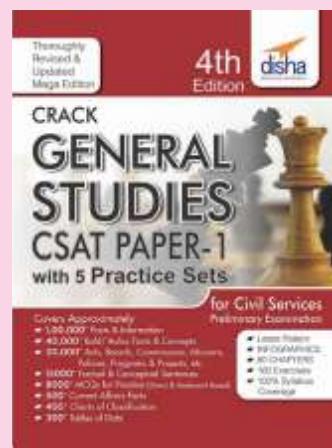
51. (b) The Chief Election Commissioner and other Election Commissioners enjoy equal powers and salaries. The term of office of the Election Commissioner is 6 years or till he attains the age of 65 years or whichever is earlier.
52. (b) Article 280 of the Constitution of India provides for a Finance Commission as a quasi-judicial body. It is constituted by the President of India every fifth year or at such earlier time as he considers necessary. The commission makes recommendations to the president with regard to the distribution of the proceeds of taxes between the union and the states. The principles which should govern the grants-in-aid to be given to the states. Any other matter referred to the Commission by the President in the interest of sound finance.
53. (a) The High Court (and not the Election Commission) is the final authority to give a final verdict in case of election disputes. In the alternative special election benches may be constituted in high courts and earmarked exclusively for the disposal of election petitions and disputes.
54. (d) Statement 1 is incorrect as Advocate General of the state is appointed by the governor of the State. Statement 2 is incorrect as High Courts have Original, Appellate and Writ jurisdiction (not advisory jurisdiction).
55. (c) Only 2nd and 3rd are correct statements.
 (2) CAG reports on execution of projects or programmes by the ministries are discussed by the Public Accounts Committee.
 (3) Information from CAG reports can be used by investigating agencies to press charges against those who have violated the law while managing public finance.
56. (c) The Attorney General of India has a post parallel to any minister in Parliament. He can take part in the proceedings of either house. He can be a member of any committee of Parliament. He has the right to speak in the Parliament but he has no right to vote.
57. (a) The main functions of the Committee are to consider all matters concerning the welfare of the Scheduled Castes and Scheduled Tribes, falling within the purview of the Union Government and the Union Territories, to consider the reports submitted by the National Commission for Scheduled Castes and Scheduled Tribes and to examine the measures taken by the Union Government to secure due representation of the Scheduled Castes and Scheduled Tribes in services and posts under its control.
58. (c) 59. (c) 60. (c)
61. (d) Attorney General of India is appointed by the President of India under Article 76(a) of the Constitution and holds office during the pleasure of the President.

IMPORTANT COMMISSIONS/ INSTITUTIONS – Simple MCQ's with Explanations



1. In case of national emergency, the State Government
 - (a) cannot legislate
 - (b) can legislate only on subjects in the Concurrent List
 - (c) can legislate on the subjects in the State List
 - (d) Legislative power is suspended
2. Chairman of the Finance Commission must be:
 - (a) Qualified to be a High Court judge
 - (b) A person with background of economics
 - (c) A person in public affairs
 - (d) All of the above
3. President's Rule can be declared
 - (a) on the written advice of the Union Cabinet
 - (b) only on the recommendation of the Governor of the concerned State
 - (c) if the President is satisfied that the government of a state cannot be carried on in accordance with the provisions of the Constitution
 - (d) if a State ministry is defeated on the floor of the Legislative Assembly
4. Impact of financial emergency excludes
 - (a) Union getting the power to issue directions to State to observe canons of financial propriety
 - (b) President's power to direct a reduction in the salaries of Supreme Court and High Court judges
 - (c) President's right to direct States to reserve even money bills for his consideration
 - (d) President's power to suspend fundamental rights in Article 19
5. The Constitution envisages
 - (a) two types of civil services administrative and police
 - (b) two types of civil services Indian and provincial
 - (c) three types of civil services : all-India, central and regional
 - (d) three types of civil services : all-India, central and state
6. Composition of the UPSC is
 - (a) laid down in the Constitution
 - (b) determined by Parliament
 - (c) determined by the President
 - (d) determined by the Chairman of UPSC
7. Members of a State Public Service Commission can be removed by the
 - (a) Governor on a report by the Supreme Court
 - (b) Governor on a resolution passed by the Parliament
 - (c) President on a report by the Supreme Court
 - (d) President on a resolution passed by the Parliament
8. Resignation letter of a State Public Service Commission member is addressed to the
 - (a) President
 - (b) Governor of the state
 - (c) Chief Justice of India
 - (d) Chief Minister of the state
9. A Joint Public Service Commission may be set up for two or more states
 - (a) if the Parliament provides for it after Rajya Sabha resolves to that effect
 - (b) only if the States are very small
 - (c) if the State Legislatures approve of the decision
 - (d) if the Parliament provides for it after a resolution to that effect is passed by the State
10. Which statement is/ are false ?
 - (a) Supreme Court can appoint officers of the Court after consulting the UPSC
 - (b) Joint Public Service Commission member retires at 62 years
 - (c) UPSC may in case of a parliament resolution agree to serve the needs of a State
 - (d) Public Service Commissions are to be consulted on matters relating to system of recruitment to civil posts

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11. System of representation used in India for elections of the Lok Sabha and State Assemblies is
 - (a) proportional representation
 - (b) territorial representation
 - (c) functional representation
 - (d) none of the above
12. Constitution stipulates that
 - (a) Election Commission may consist of a Chief Election Commissioner and not more than three other Election Commissioners
 - (b) when any other Election Commissioner is appointed the Chief Election Commissioner shall act as Chairman of the Election Commission
 - (c) Election Commissioners can be removed only on the recommendation of the Supreme Court
 - (d) Supreme Court may set aside an election on the ground that the electoral roll was defective
13. Permission for the use of English for official purposes was extended beyond the fifteen years initially allowed by the Constitution through
 - (a) a Constitutional amendment
 - (b) an act of Parliament
 - (c) President's order
 - (d) a government order
14. The Constitution protects the interests of the Anglo-Indian community by
 - (a) Reserving seats for them in the defence forces
 - (b) Reserving seats for them in the services and legislatures
 - (c) Reserving seats for them in the Indian Army
 - (d) authorizing the President to nominate two members of the community to the Lok Sabha
15. Election Commission holds election for the:
 - (a) Parliament
 - (b) Parliament and State Legislative Assemblies
 - (c) Parliament, State Legislative Assemblies and State Legislative Councils
 - (d) Parliament, State Legislatures and elections of President and the Vice President
16. Who, under the anti-defection act, is the final authority to decide whether a member of Lok Sabha has incurred disqualification?
 - (a) Speaker of the House
 - (b) President of India
 - (c) Central Election Commission
 - (d) High Court of the State
17. After the Constitutional Amendment to the Anti-Defection Act in 2003,
 - (a) a merger is no longer valid even if 2/3 of the members of a political party join another party
 - (b) a split of a legislature party is invalid even if 1/3 of the party leaves
 - (c) a defector has to resign and cannot stand for re-election till the term of the legislature ends
 - (d) all the above have been legislated
18. National Commission for Backward Classes
 - (a) has been set up by a Constitutional decree
 - (b) has three members
 - (c) has the powers of a civil court
 - (d) is a permanent body whose members enjoy a four-year term
19. A political party that loses recognition still retains its symbol:
 - (a) for two years
 - (b) for six years
 - (c) till the next elections
 - (d) only so far as another party does not claim it
20. For recognition as a state party, a political party
 - (a) must secure at least 6% of valid votes in the general elections in the state plus two seats in the State Assembly
 - (b) must win at least six seats in the State Assembly
 - (c) must secure at least 2% of the valid votes polled in the state's elections to the Lok Sabha
 - (d) get at least 11 MPs in the Lok Sabha
21. Which statement correctly describes the 4th Schedule of the Constitution of India?
 - (a) It lists the distribution of powers between the Union and the states
 - (b) It contains the languages listed in the Constitution
 - (c) It contains the provisions relating to administration of tribal areas
 - (d) It allocates seats in the Council of States
22. Proclamation of emergency by the President:
 - (a) Cannot apply to J&K
 - (b) Is effective in J&K only with concurrence of the State Legislature
 - (c) Apply to J&K after endorsement by the Governor
 - (d) Has to be separately issued
23. State Election Commissioner can be removed from office:
 - (a) only by the Governor
 - (b) in the same manner and grounds as a Judge of the Supreme Court
 - (c) only the President on the advice of the Chief Justice of the state
 - (d) in the same manner as the Vice President of India
24. Single-member constituency system means
 - (a) a constituency having only one candidate
 - (b) there can be only one voter in the constituency
 - (c) a constituency which elects only one representative though there can be many candidates.
 - (d) a constituency having only one political party to contest election
25. For which one of the following reforms was a Commission set up under the Chairmanship of Veerappa Moily by the Government of India?
 - (a) Police Reforms
 - (b) Tax Reforms
 - (c) Reforms in Technical Education
 - (d) Administrative Reforms

26. The personnel system of any local authority, corporate body or public institution can be placed within the jurisdiction of the UPSC by:
- President of India
 - Central Ministry of Personnel
 - Parliament
 - Supreme Court
27. A Joint Public Service Commission can be created by:
- An order of the President
 - A resolution of the Rajya Sabha
 - An act of Parliament
 - A resolution of the concerned state legislatures
28. According to the constitution of India, a new all India service can be instituted with the initiative taken by
- more than two-thirds of the states
 - The inter-states council
 - the Lok Sabha
 - The Rajya Sabha
29. Which one of the following is not explicitly stated in the Constitution of India but followed as a convention?
- The Finance Minister is to be a member of the lower House
 - The Prime Minister has to resign if he loses majority in the lower house
 - All the parts of India are to be represented in the Council of Ministers
 - In the event of both the President and the Vice-President decommittting office simultaneously before the end of their tenure, the Speaker of the lower house of the Parliament will officiate as the President.
30. The finance commission is constituted to recommend criteria for
- Framing a finance bill
 - preparing the annual budget of union government
 - Distribution of financial resources between union and the states
 - Auditing the receipts and expenditures of the union government
31. Which of the following expenditures shall be charged on the Consolidated Fund of India?
- The emoluments and allowances of the President and other expenditure relating to his office
 - The emoluments and allowances of the Prime Minister and other expenditure relating to this office
 - The salaries and allowances of the chairman and the deputy chairman of the council of states
 - The salaries and allowances of the speaker and the deputy speaker of the Lok Sabha
32. Whose duty is it to recommend to the President of India on the issue of the distribution and allocation of the net proceeds of taxes in the context of Centre-State fiscal relations?
- Planning commission
 - National Development Council
 - Union Ministry of Finance
 - Finance Commission
33. With reference to Indian polity, which one of the following statements is correct?
- Planning Commission is accountable to the Parliament
 - President can make ordinance only when either of the two Houses of Parliament is not in session
 - The minimum age prescribed for appointment as a Judge of the Supreme Court is 40 years
 - National Development Council is constituted of Union Finance Minister and the Chief Ministers of all the States
34. From time to time, the Government of India approves various Foreign Direct Investment (FDI) proposals. Which among the following bodies recommends this approval prior to the ministry of Finance/Cabinet Committee on Economic Affairs?
- National Development Council
 - Foreign Investment Promotion Board
 - Central Economic Intelligence Bureau
 - Ministry of Commerce, Govt. of India
35. The Primary function of the Finance Commission in India is to:
- Distribution of revenue between the centre and the states
 - Prepare the Annual Budget
 - Advise the President on financial matters
 - Allocate funds to various ministries of the Union and State Governments
36. With reference to Indian polity, which one of the following statements is correct?
- National Development Council (NDC) is constituted of Union Finance Minister and the Chief Minister of all the States
 - Planning Commission is accountable to State Legislature
 - President can make ordinance even when both houses are in session
 - The minimum age to contest election for Member of Parliament is 40 years
37. Five year plan in India is finally approved by:
- Union Cabinet
 - President
 - Planning Commission
 - National Development Council
38. Financial distribution between the Union and the States takes place on the basis of the recommendation of
- The Planning Commission
 - The National Development Council
 - Inter-State Council
 - The Finance Commission
39. The jurisdiction of the Finance Commission does not extend to:
- recommendation of the allocation of funds among the various heads of expenditure in the Union and State budgets
 - recommendation of the distribution between the Union and the States of the net proceeds of taxes

58. Under the Comptroller and Auditor General of India there is in each state:
- Accountant General
 - Audit Chief General
 - Comptroller Accountant
 - Chief of the state Accounts
59. What are the functions of the Finance Commission?
- The distribution between the union and states, on the net proceeds of taxes which are to be, or may be divided between them and the allocation between the states, of the respective shares of such proceeds.
 - Regarding the principles which should govern the grants-in-aid of the revenue of the states in need of such assistance out of the consolidated fund of India.
 - Any other matter referred to the Commission by the President in the interest of sound finance.
 - All of the above
60. Which among the following is an extraconstitutional growth in Indian democracy ?
- Attorney General of India
 - Autonomous Districts
 - Political Parties
 - Deputy Chairman of the Council of States
61. Who among the following has a right to speak and otherwise take part in proceedings of either House of Parliament and to be a member of any parliamentary committee but is not entitled to vote ?
- Chairman, Finance Commission
 - The Attorney General
 - The Comptroller and Auditor General
 - The Chief Election Commissioner
62. Which one among the following is not a function of the Comptroller and Auditor General of India?
- Auditing the transactions of Centre and state Governments relating to contingency funds and public accounts
 - Compiling the accounts of Defence
 - Auditing the accounts of institutions financed by the Government
 - Compiling the accounts of States
63. Who of the following constitutes a Finance Commission for a State in India?
- The President of India
 - The Governor of the State
 - The Union Finance Minister
 - The Union Cabinet
64. Who among the following can be the Chairperson of the National Human Rights Commission?
- A Member of either House of Parliament
 - A Chief Justice of the Supreme Court of India
 - A social worker actively involved in the promotion of human rights
 - Any sitting Judge of High Court or Supreme Court
65. Financial distribution between the Union and the State takes place on the basis of the recommendations of which one of the following?
- The National Development Council
 - The Inter-State Council
 - The Planning Commission
 - The Finance Commission
66. Department of Official Language (Raj Bhasha Vibhag) comes under which one of the following Ministries?
- Ministry of Culture
 - Ministry of Home Affairs
 - Ministry of Human Resource Development
 - Ministry of Information and Broadcasting
67. Which one of the following Commissions is not provided in the Constitution of India?
- Planning Commission
 - UPSC
 - Finance Commission
 - Election Commission
68. Which one among the following is not true of the Planning Commission?
- It is an advisory body and makes recommendations to the Cabinet
 - It is responsible for the execution of development programmes and plans
 - It is responsible for formulation of a plan for the most effective and balanced utilisation of the country's resources
 - It indicates the factors which tend to retard economic development
69. The Chief Election Commissioner of India holds office for a period of
- six years
 - during the pleasure of the President
 - for 6 years or till the age of 65 years, whichever is earlier
 - for 5 years or till the age of 60 years, whichever is earlier
70. Which one among the following is the distinguishing factor between a pressure group and a political party?
- Pressure groups are confined to a few, while political parties involve larger number of people
 - Pressure groups do not seek active political power, political parties do
 - Pressure groups do not politically motivate people, while political parties do
 - Political parties take political stance, while pressure groups do not bother about political issues
71. Under which law it is prescribed that all proceedings in the Supreme Court of India shall be in English language?
- The Supreme Court Rules, 1966
 - A Legislation made by the Parliament
 - Article 145 of the Constitution of India
 - Article 348 of the Constitution of India

HINTS AND EXPLANATIONS

EXERCISE-1

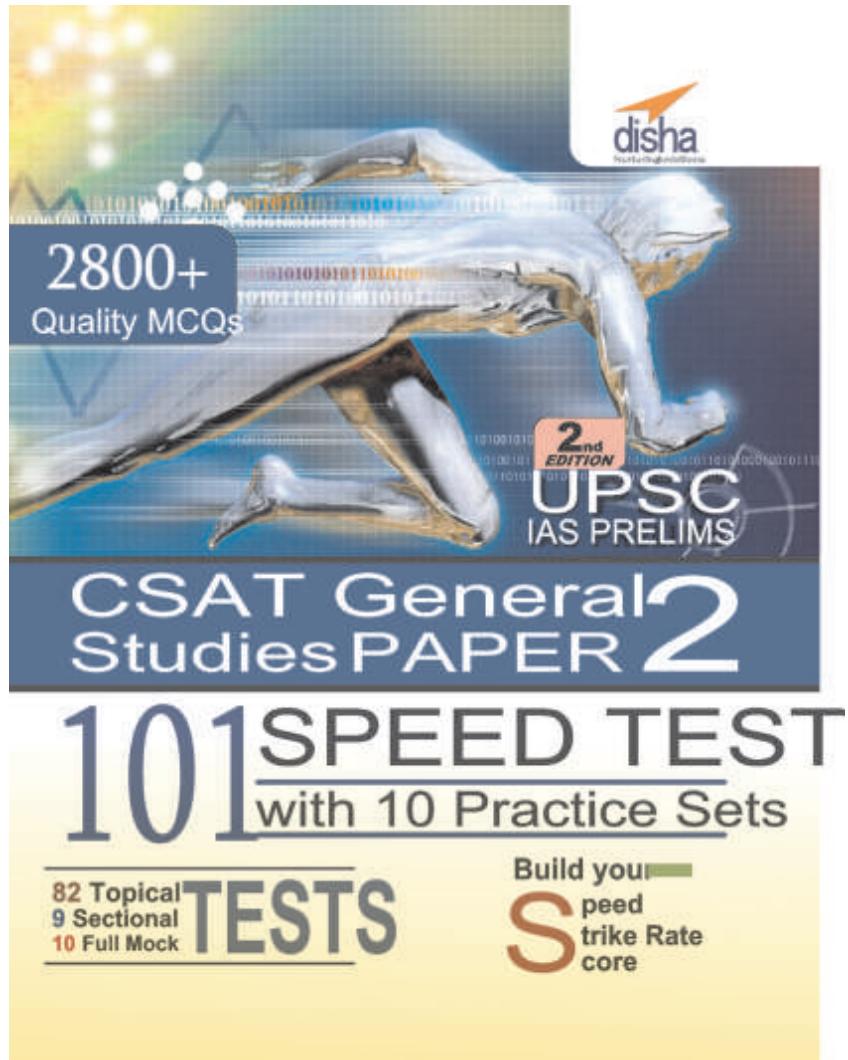
- | | | | | | | |
|---------|---|---------|---------|---------|---------|--|
| 1. (d) | 2. (c) | 3. (c) | 4. (d) | 5. (d) | 68. (b) | The Planning Commission was established in March 1950 by an executive resolution of the government of India. The Planning Commission is neither constitutional nor a statutory body. In India, it is the supreme organ of planning for social and economic development. It is not responsible for taking and implementing decisions. It is only a staff agency, an advisory body and has no executive responsibility. |
| 6. (c) | 7. (c) | 8. (b) | 9. (d) | 10. (c) | 69. (c) | The Chief Election Commissioner holds office for a term of six years or until they attain the age of 65 years, whichever is earlier. |
| 11. (b) | 12. (b) | 13. (b) | 14. (d) | 15. (d) | 70. (b) | Pressure groups do not seek active political power, political parties do. Political parties exist to gain power over governmental policy by winning elections for political office. Interest groups do not necessarily have their members run for office and they vote in a nonpartisan way, supporting candidates who promote their point of view. |
| 16. (a) | 17. (b) | 18. (c) | 19. (b) | 20. (a) | 71. (d) | Article 348 of Indian Constitution mentions the language to be used in Supreme Court and the High Courts. According to the article 348, the language of all proceedings in the Supreme court and in every high court shall be English. |
| 21. (d) | 22. (b) | 23. (b) | 24. (c) | 25. (d) | 72. (b) | Delimitation commission of India is a Commission established by Government of India under the provisions of the Delimitation Commission Act. In India, such Delimitation Commissions have been constituted 4 times - in 1952 under the Delimitation Commission Act, 1952, in 1963 under Delimitation Commission Act, 1962, in 1973 under Delimitation Act, 1972 and in 2002 under Delimitation Act, 2002. The main task of the commission is to redraw the boundaries of the various assembly and Lok Sabha constituencies based on a recent census. The representation from each state is not changed during this exercise. However, the number of SC and ST seats in a state is changed in accordance with the census. |
| 26. (c) | 27. (c) | 28. (d) | 29. (c) | 30. (c) | 73. (a) | "Political parties give political education to the people" is not the function of political parties in a democracy. |
| 31. (c) | | | | | 74. (c) | All doubts and disputes arising out of or in connection with the election of a President or Vice-President shall be inquired into and decided by the Supreme Court whose decision shall be final (Article 71(a)). |
| 32. (d) | An instrument which the constitution has evolved for the purpose of distributing financial resources between the centre and the states is the finance commission. According to Article 280 of the constitution, it is to be constituted by the president once five year and consist of a chairman and four other members appointed by the president. | | | | 75. (c) | The Planning Commission was established in March 1950 by an executive resolution of the Government of India, on the recommendation of the Advisory Planning Board constituted in 1946, under the chairmanship of KC Neogi. Thus, the Planning Commission is neither constitutional nor a statutory body. Planning commission has been replaced by new institution namely NITI Aayog. |
| 33. (a) | 34. (b) | 35. (a) | 36. (a) | 37. (d) | 76. (c) | The power to decide the date of an election a state legislative assembly rests with the election commission of India. |
| 38. (d) | 39. (a) | 40. (d) | 41. (a) | 42. (d) | | |
| 43. (d) | 44. (a) | 45. (c) | 46. (b) | 47. (b) | | |
| 48. (a) | 49. (c) | 50. (c) | 51. (b) | 52. (d) | | |
| 53. (d) | 54. (c) | 55. (d) | 56. (a) | 57. (c) | | |
| 58. (a) | 59. (d) | | | | | |
| 60. (d) | Deputy Chairman of the council of states is an extra-constitutional growth in Indian democracy. | | | | | |
| 61. (b) | The Attorney General for India is the Indian government's chief legal advisor, and its primary lawyer in the Supreme Court of India. He is appointed by the President of India under Article 76(1) of the Constitution and holds office during the pleasure of the President. He must be a person qualified to be appointed as a Judge of the Supreme Court. | | | | | |
| 62. (b) | The Comptroller and Auditor General (CAG) of India is an authority, established by the Constitution of India under Chapter V, who audits all receipts and expenditure of the Government of India and the state governments, including those of bodies and authorities substantially financed by the government. The CAG is also the external auditor of government-owned companies. | | | | | |
| 63. (b) | According to Article 243 (I) the governor of the state shall set up the Finance Commission within the period of one year. State Finance Commissions receive grants from the Finance Commission that is set up by the central government. | | | | | |
| 64. (b) | The Human Right Commission consists of a chairman and other four members. The chairman should be a retired chief justice of India. | | | | | |
| 65. (d) | The Finance Commission is constituted by the President under article 280 of the Constitution, mainly to give its recommendations on distribution of tax revenues between the Union and the States and amongst the States themselves. | | | | | |
| 66. (b) | Department of Official language (Raj Bhasha Vibhag) comes under Ministry of Home affairs. | | | | | |
| 67. (a) | The Planning Commission was set up by a Resolution of the Government of India in March 1950. It is not provided in the constitution of India. | | | | | |

77. (a) According to Article 280 it shall be the duty of the Commission to make recommendations to the President as to (1) the distribution between the Union and the States of the net proceeds of taxes which are to be, or may be, divided between them under this Chapter and the allocation between the States of the respective shares of such proceeds; (2) the principles which should govern the grants in aid of the revenues of the States out of the Consolidated Fund of India; (3) any other matter referred to the Commission by the President in the interests of sound finance; (4) The Commission shall determine their procedure and shall have such powers in the performance of their functions as Parliament may by law confer on them.
78. (c) Article 350A was inserted by 7th Constitutional Amendment act 1956. It says, it shall be the endeavour of every State and of every local authority within the State to provide adequate facilities for instruction in the mother-tongue at the primary stage of education to children belonging to linguistic minority groups; and the President may issue such directions to any State as he considers necessary or proper for securing the provision of such facilities. Article 349 – Special Procedure for enactment of certain laws relating to language; Article 350 – Language to be used in representations for redress of grievances; Article 351 – Directive for development of the Hindi language.
79. (d) As per provisions under Article 149, the Comptroller and Auditor General shall perform such duties and exercise such powers in relation to the accounts of the Union and of the States and of any other authority or body as may be prescribed by or under any law made by Parliament and, until provision in that behalf is so made, shall perform such duties and exercise such powers in relation to the accounts of the Union and of the States as were conferred on or exercisable by the Auditor General of India immediately before the commencement of this Constitution in relation to the accounts of the Dominion of India and of the Provinces respectively.
80. (b) President can issue an ordinance only when both houses of parliament are not in session (Art 123). No minimum age is prescribed for appointment as a judge of the Supreme Court in the Constitution. The age of a Judge of the SC shall be determined by such authority and in such manner as parliament may by law provide. NDC is composed of the PM as its head, all Union Cabinet ministers, the CMs of all states, CMs/Administrators of all UTs and the members of the Planning Commission. There is no constitutional provision regarding the accountability of the planning commission the parliament.
81. (d) National Development council is not a constitutional body. It is an extra-constitutional body. Planning Commission is a non-constitutional and non-statutory body. It was created by the Govt. of India in 1950 by a resolution. Zonal councils have been recognized in the 74th Constitutional Amendment Act of 1992.
82. (a) Elections in India are conducted according to the constitutional provisions, supplemented by laws made by Parliament. The major laws are Representation of the People Act, 1950, which mainly deals with the preparation and revision of electoral rolls, the Representation of the People Act, 1951 which deals, in detail, with all aspects of conduct of elections and post election disputes.
83. (b) In Gujarat and Maharashtra the Chief Ministers come under the ambit of Lok Ayukta Act.
84. (d) A defeated candidate who fails to secure more than one sixth of the valid votes polled in the constituency will lose his security deposit. When a very large number of candidates contest the election, due to distribution of votes, the winning candidate may get less than 1/6 th of valid voters.
85. (b) Political scientists speculate that proportional representation leads logically to multi-party systems, since it allows new parties to build a niche in the legislature.
86. (d) Party funding in Austria has been subject to public regulation and public subsidies since 1975. Party finance in Germany is the subject of statutory reports, which up to 35 parties file annually with the administration of the German parliament.



LOGICAL REASONING SECTION TEST WITH SOLUTIONS

This section test is taken from :



ISBN : 9789385846663

Max. Marks : 20**No. of Qs. : 20****Time : 20 min.****Date :/...../.....**

DIRECTIONS (Qs. 1&2): Study the following information and answer the given question.

Point F is 10 m to the south of E. Point G is 3 m to the east of F. Point H is 5 m to south of G. Point I is 6 m to the west of H. Point J is 10 m to the North of I. Point K is 6 m to the east of J. Point L is 5 m to the north of K.

1. Which of the following represents the direction of point G with respect to point J?

(a) South-east	(b) North-west
(c) South-west	(d) South
2. How far and in which direction is point E from point L?

(a) 5 metres south	(b) 3 metres east
(c) $\sqrt{234}$ metres north	(d) 3 metres west

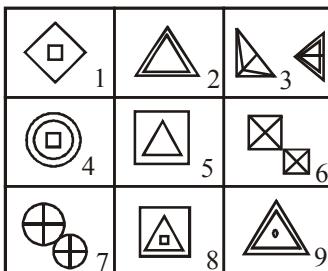
DIRECTIONS (Q. 3): In these questions relationship between different elements is shown in the statements. The statements are followed by conclusions. Study the conclusions based on the given statement and select the appropriate answer.

3. **Statements:** $E < C = U \geq T; B > C \geq A$

Conclusions: I. $A < E$

II. $T < B$

- (a) Neither conclusion I nor II is true.
- (b) Either conclusion I or II is true.
- (c) Only conclusion I is true.
- (d) Only conclusion II is true.
4. In the following question, group the given figures into three classes on the basis of identical properties.



- (a) 1, 2, 8; 3, 5, 6; 7, 4, 9
- (b) 1, 2, 5; 3, 6, 7; 4, 8, 9
- (c) 1, 4, 8; 2, 7, 9; 3, 5, 6
- (d) 1, 8, 9; 5, 6, 7; 2, 3, 4

DIRECTIONS (Q. 5): In the question, from the given alternatives select the word which cannot be formed using the letters of the given word.

5. DISAPPOINTMENT

- | | |
|--------------|--------------|
| (a) POINTER | (b) OINTMENT |
| (c) TENEMENT | (d) POSITION |

DIRECTIONS (Qs. 6&7): Read the information carefully and answer the given questions:

P + Q means P is the sister of Q

P # Q means P is the husband of Q

P \$ Q means P is the daughter of Q

P % Q means P is the mother of Q

P @ Q means P is the brother of Q

6. What should come in place of the question mark, to establish that B is the child of K in the expression?

$$T \% K \# F \% L + N ? B$$

- | | |
|------------|-------------------|
| (a) Only % | (b) Either + or @ |
| (c) Only # | (d) Either @ or % |

7. Which among the given expressions indicate that J is the wife of F?

(a) $P \$ J \% R + K \% F$	(b) $F @ R + K + P \% J$
(c) $J \% P + K @ R \$ F$	(d) $J \% P \# K + R \$ F$

DIRECTIONS (Qs. 8& 9): In each question, the main statement is followed by four sentences. Select the pair of sentences that relate logically to the given statement.

8. Either Sita is sick or she is careless

1. Sita is not sick.
 2. Sita is not careless.
 3. Sita is sick.
 4. Sita is careless.
- | | |
|-------------|-------------|
| (a) 1 and 2 | (b) 1 and 4 |
| (c) 2 and 1 | (d) 4 and 1 |

9. Ram gets a swollen nose whenever he eats hamburgers

1. Ram gets a swollen nose.
 2. Ram does not eat hamburgers.
 3. Ram does not get a swollen nose.
 4. Ram eats hamburgers.
- | | |
|-------------|-------------|
| (a) 1 and 2 | (b) 4 and 3 |
| (c) 1 and 3 | (d) 1 and 4 |

DIRECTIONS (Qs. 10&11): Each question has a set of four statements. Each statement has three segments. Choose the alternative where the third segment in the statement can be logically deduced using both the preceding two, but not just from one of them.

10. 1. All good people are knights. All warriors are good people. All knights are warriors.

2. No footballers are ministers. All footballers are tough. Some ministers are players.
3. All pizzas are snacks. Some meals are pizzas. Some meals are snacks.
4. Some barkers are musk deer. All barkers are sloth bears. Some sloth bears are musk deer.

- | | |
|-------------|-------------|
| (a) 3 and 4 | (b) 2 and 3 |
| (c) 1 only | (d) 3 only |

11. 1. All earthquakes cause havoc. Some landslides cause havoc. Some landslides are earthquakes.

2. All glass things are transparent. Some curios are glass things. Some curios are transparent.
3. All clay objects are brittle. All XY are clay objects. Some brittle are XY.
4. No criminal is a patriot. Ram is not a patriot. Ram is a criminal.

- | | |
|-------------|------------|
| (a) 4 only | (b) 2 only |
| (c) 3 and 2 | (d) 1 only |

DIRECTIONS (Qs. 12&13): Answer these questions on the basis of the following information:

Four families decided to attend the marriage ceremony of one of their colleagues. One family has no kids, while the others have at least one kid each. Each family with kids has at least one kid attending the marriage. Given below is some information about the families reaching to attend the marriage.

The family with 2 kids came just before the family with no kids. Shanthi who does not have any kids reached just before Sridevi's family.

Sunil and his wife reached last with their only kid.

Anil is not the husband of Joya.

Anil and Raj are fathers.

Sridevi's and Anita's daughter go to the same school.

Joya came before Shanthi and meet Anita when she reached the venue.

Raman stays the farthest from the venue.

Raj said his son could not come because of his exams.

12. Name the correct pair of husband and wife

(a) Raj and Shanthi (b) Sunil and Sridevi

(c) Anil and Sridevi (d) Raj and Anita

13. Of the following pairs, whose daughter go to the same school

(a) Anil and Raman (b) Sunil and Raman

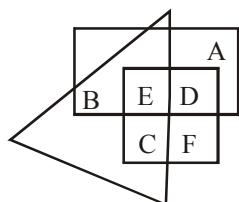
(c) Sunil and Anil (d) Raj and Anil

14. Arun, Barun and Kiranmala start from the same place and travel in the same direction at speeds of 30, 40 and 60 km per hour respectively. Barun starts two hours after Arun. If Barun and Kiranmala overtake Arun at the same instant, how many hours after Arun did Kiranmala start?

(a) 3 (b) 3.5

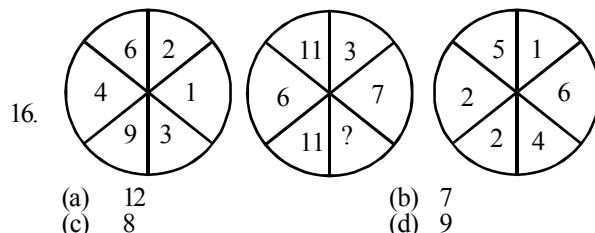
(c) 4 (d) 4.5

15. In the given diagram, square represents Teachers, rectangle represents Players and triangle represents Workers. Which region represents Teachers who are Players?



- (a) E
(c) D, E

- (b) F
(d) C, F

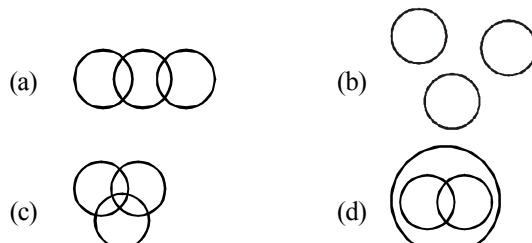


17.

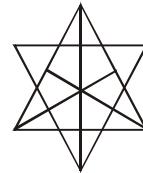
6	7	30	4	3
3	8	?	6	2
9	4	20	2	8

(a) 8
(c) 15
(b) 12
(d) 36

18. Which of the following diagrams shows the relation between Patients, People and Doctor?



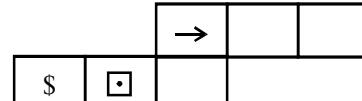
19. How many triangles are there in the figure given below?



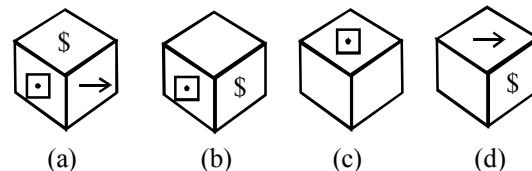
- (a) 27
(c) 25
(b) 20
(d) 21

20. Which of the following boxes can be formed by folding the Question Figure?

Question Figure

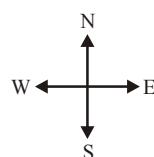
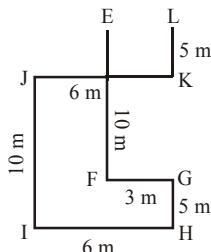


Answer Figures



HINTS & Solutions

1. (a)



2. (d)

3. (d)

4. (b)

5. (a) The letter R is not there in the given word.

6. (b)

7. (c)

8. (b) Either A or B means if not B then A and vice versa.
Hence, either Sita is sick or she is careless implies (if)
Sita is not sick (then) she is careless.

9. (d)

10. (a)

11. (c)

12. (b)

13. (c)

14. (c) Arun covers 60 km in 2 hours.

So, Barun takes $\frac{60}{10} = 6$ hours to meet Arun. In $2 + 6 = 8$ hrs.

Arun travels $8 \times 30 = 240$ km.

Kiranmala also overtakes both at this point

She takes $\frac{240}{60} = 4$ hours to overtake Arun.

Hence, Kiranmala starts $8 - 4 = 4$ hour after Arun.

15. (c)

16. (b)

The number in a section of the middle circle is the sum of the numbers in the corresponding sections of the other two circles.

Thus,

2nd circle = 1st circle + 3rd circle

$$\text{top-left } 11 = 6 + 5$$

$$\text{top-right } 3 = 2 + 1$$

$$\text{middle-left } 6 = 4 + 2$$

$$\text{middle-right } 7 = 1 + 6$$

$$\text{bottom-left } 11 = 9 + 2$$

$$\text{bottom-right } 7 = 3 + 4$$

17. (b) $6 \times 7 - 4 \times 3 = 42 - 12 = 30$

$$3 \times 8 - 6 \times 2 = 24 - 12 = 12$$

$$9 \times 4 - 2 \times 8 = 36 - 16 = 20$$

18. (d)

19. (a)

20. (a)

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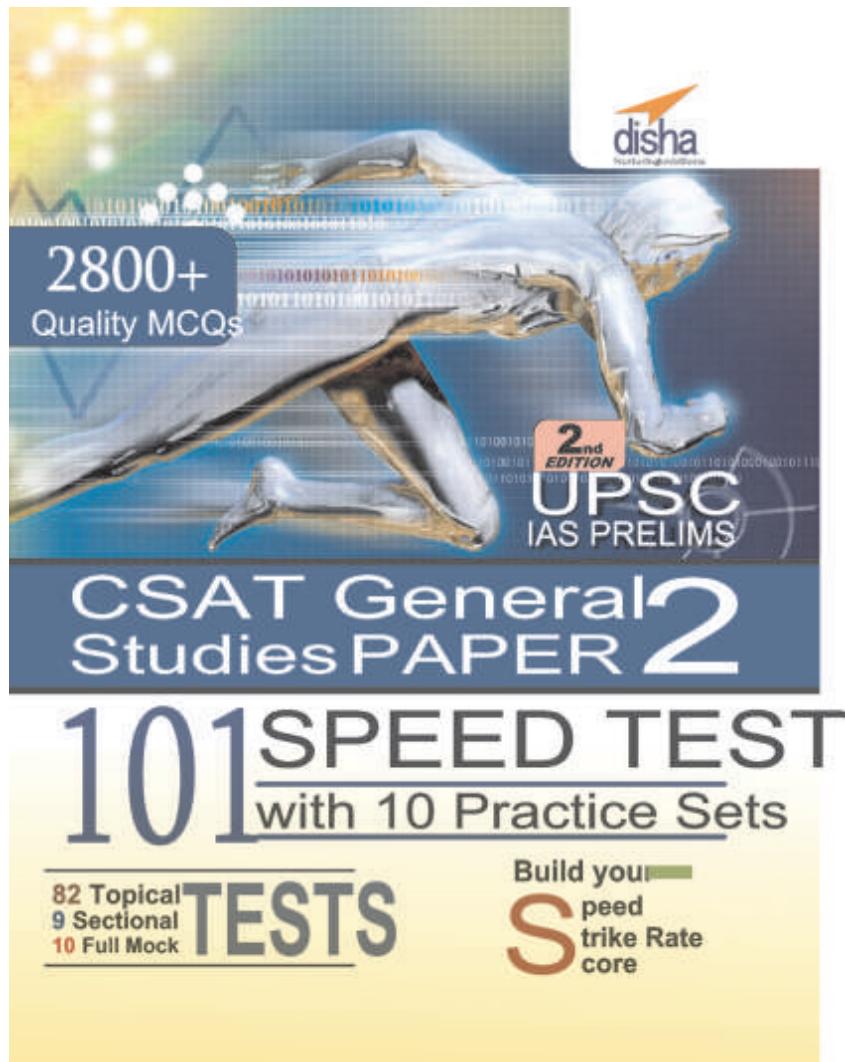
MOVIE & NOVEL

EMEMPLOYMENT NEWS



MENTAL ABILITY SECTION TEST WITH SOLUTIONS

This section test is taken from :



ISBN : 9789385846663

Max. Marks : 20

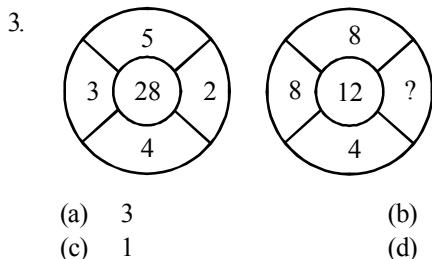
No. of Qs. : 20

Time : 20 min.

Date :/...../.....

DIRECTIONS (Qs. 1-3): Complete the following series.

1. 4 3 2
 36 2 100 7 ? 5
 (a) 71 (b) 49
 (c) 64 (d) 81
2. 12, 32, 72, 152, ?
 (a) 252 (b) 312
 (c) 325 (d) 612

**DIRECTIONS (Qs. 4&5):** Find the odd man out.

4. (a) 4, 63 (b) 1, 0
 (c) 2, 15 (d) 5, 124
5. (a) LNJ (b) RTP
 (c) NPK (d) FHD
6. If the expressions, R < P and Q ≥ T are true, then which of the following symbols should be placed in the blank spaces respectively in the given expression?
 $R_P > N = T_Q$

- | | |
|----------|----------|
| (a) >, ≥ | (b) ≤, < |
| (c) <, ≤ | (d) >, ≥ |

7. Which of the following expressions is not necessarily true, if the given expression is true?

- $S > T \geq R > P = N \leq O > Q$
- | | |
|-----------|-----------|
| (a) S > P | (b) T > N |
| (c) T > P | (d) P > Q |

8. Which of the following symbols should be placed in the blank spaces respectively to make the expressions $T > O$, $R \leq O$ and $S < R$ definitely true?

- O_S_R_T
- | | |
|-------------|-------------------|
| (a) <, >, < | (b) <, <, ≤ |
| (c) >, >, < | (d) None of these |

9. Which of the following expressions is true, if the given expression is true?

- $B < U \leq E > V \geq L$
- | | |
|-----------|-----------|
| (a) L < E | (b) L > V |
| (d) L ≥ E | (d) U > V |

DIRECTIONS (Qs. 10&11): Study the following information carefully to answer the given questions.

In a certain code language ‘weather is so cool’ is written as ‘la pa ma se’, ‘so are we going’ is written as ‘ma ne ta ra’, ‘as going cool’ is written as ‘pa ne he’, ‘is weather hot’ is written as ‘la se ka’, ‘desert are hot’ is written as ‘ka te ra’ and ‘mountains are cool’ ‘is written as ‘pa ra ha’?

10. What is the code for ‘mountains’?

- | | |
|--------------|--------|
| (a) pa | (b) ra |
| (c) pa or ha | (d) ha |

11. What is the code for ‘going hot desert’?

- | | |
|--------------|--------------|
| (a) ne ka la | (b) ka te se |
| (c) ka te ne | (d) ka ta na |

DIRECTIONS (Qs. 12&13) : Which set of letters when sequentially placed in the gaps in the given letter series shall complete it?

12. ba _ b _ aab _ a _ bba _ b

- | | |
|-----------|-----------|
| (a) abbaa | (b) aabab |
| (c) aabba | (d) baaba |

13. cb _ ab _ c _ aa _ c _ ba _ bc

- | | |
|-------------|------------|
| (a) cabbcbb | (b) bbcaac |
| (c) abcabc | (d) acbbca |

14. If the vowels in the English alphabet are coded as 1, 2, 3, 4 and 5 and the consonants appearing immediately after the vowels are coded as 6, 7, 8, 9 and 10, while all other consonants are coded as 11, then what will be the sum of the numbers appearing as codes for the letters in the word ‘QBLIQUE’?

- | | |
|--------|-------------------|
| (a) 52 | (b) 40 |
| (c) 43 | (d) None of these |

15. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group?

- | | |
|---------|---------|
| (a) 62 | (b) 42 |
| (c) 152 | (d) 110 |

16. In a certain code, BREAK-THROUGH is written as EAOUHRBRGH-KT. How is DISTRIBUTION written in that code?

- | | |
|------------------|------------------|
| (a) STTIBUDIONRI | (b) STTIBUONRIDI |
| (c) TISTBUONDIRI | (d) RISTTIBUDION |

DIRECTIONS (Qs. 17&20): Choose the most appropriate option.

17. $B_2CD, \dots, B_5CD, BC_6D$.

- | | |
|---------------|-------------|
| (a) B_2C_2D | (b) BC_3D |
| (c) B_2C_3D | (d) BCD_7 |

18. mend : sewing :: edit : _____

- | | |
|----------------|---------------|
| (a) darn | (b) repair |
| (c) manuscript | (d) makeshift |

19. whole : faction :: _____ : _____

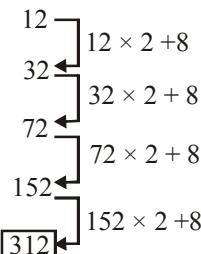
- | | |
|------------------|-------------------|
| (a) plus : minus | (b) star : planet |
| (c) rain : water | (d) ocean : drop |

20. Find the odd one

- | | |
|-----------------|-----------|
| (a) cannon-ball | (b) sword |
| (c) bullet | (d) arrow |

HINTS & Solutions

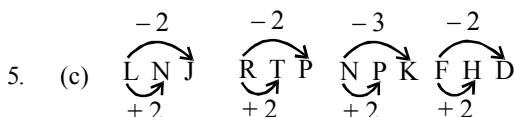
1. (b) $36 \rightarrow (4+2)^2$
 $100 \rightarrow (7+3)^2$
 $49 \rightarrow (2+5)^2$

2. (b)
- 

3. (d) As, $(5^2 + 4^2) - (3^2 + 2^2)$
 $= (25 + 16) - (9 + 4)$
 $= 41 - 13 = 28$

Same as,
 $(8^2 + 4^2) - (8^2 + ?^2) = 12$
 $(64 + 16) - (64 + ?^2) = 12$
 $64 + ?^2 = 80 - 12$
 $?^2 = 80 - 12 - 64 = 4$
 $\therefore ? = 2$

4. (c) $(4)^3 - 1 = 64 - 1 = 63$
 $(1)^3 - 1 = 1 - 1 = 0$
 $(5)^3 - 1 = 125 - 1 = 124$



6. (c) **Check the options one by ones**

Option (a) $R > P > N = T \geq Q$

This leads to $R > P$ and $T \geq Q$.

Hence does not follow.

Option (b) $R \leq P > N = T < Q$

This leads to $R \leq P$ and $Q > T$. Hence it is false and does not follow.

Option (c) $R < P > N = T \leq Q$

This leads to $R < P$ and $Q \geq T$, which is true and hence follows.

Option (d) $R > P > N = T \geq Q$

This leads to $R > P$ and $T \geq Q$, which is false and hence does not follow.

Hence only option (c) is true.

7. (d) **Given expression:**

$$S > T \geq R > P = N \leq O > Q$$

Thus, $S > P$ is true, hence (a) does not follow.

Again, $T > N$ is true and hence (b) does not follow.

And, $T > P$ is true and hence (c) does not follow.

We can't compare P and Q . Hence option (d) follows.

8. (d) **Check options one by one:**

(a) $O < S > R < T$

Thus T and O can't be compared. Hence does not follow.

- (b) $O < S < R \leq T$
 Thus, $T > O$. But $R > O$. Hence does not follow.
 (c) $O > S > R < T$
 Again, T and O can't be compared. Hence does not follow.

9. (a)

(10 and 11):

- weather is so cool \rightarrow la pa ma se ... (i)
 so are we going \rightarrow ma ne ta ra ... (ii)
 as going cool \rightarrow pa ne he ... (iii)
 is weather hot \rightarrow la se ka ... (iv)
 desert are hot \rightarrow ka te ra ... (v)
 mountains are cool \rightarrow pa ra ha ... (vi)
From (i) and (ii), so \rightarrow ma ... (vii)
From (i), (iii) and (vi), cool \rightarrow pa ... (viii)
From (ii), (v) and (vi), are \rightarrow ra ... (ix)
From (ii) and (iii), going \rightarrow ne ... (x)
From (iii), (vi) and (x), as \rightarrow he ... (xi)
From (iv) and (v), hot \rightarrow ka ... (xii)
From (v), (ix) and (xii), desert \rightarrow te
From (vi), (viii) and (ix), mountains \rightarrow ha
From (i) and (iv), weather/is \rightarrow la/se
From (ii), (vii), (ix) and (x), we \rightarrow ta

10. (d)

11. (c)

12. (a) baab/baab/baab/baab

13. (d) cba/abc/cba/abc/cba/abc

14. (d)

15. (a) $62 = 2 \times$ Prime Number

All other numbers are equal to $2 \times$ composite number.

16. (a) BR EA KT HR OU GH

1 2 3 4 5 6

EA OU HR BR GH KT

2 5 4 1 6 3

\therefore DI ST RI BU TI ON

1 2 3 4 5 6

ST TI BU DI ON RI

2 5 4 1 6 3

17. (b) $B_2 CD \xrightarrow{+1} BC_3 D \xrightarrow{+1} BCD_4 \xrightarrow{+1} B_5 CD \xrightarrow{+1} BC_6 D$

18. (c) As in sewing mend is done, in the same way in manuscript edit is done.

19. (d) As, 'fraction' is the part of 'whole', same as, drop is the part of ocean.

20. (b) All but sword require medium to hit.



POLITY SECTION TEST WITH SOLUTIONS

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ISBN : 9789385846656

Max. Marks : 50

No. of Qs. 25

Time : 20 min.

Date :/...../.....

1. With reference to membership of the Rajya Sabha, consider the following statements:

1. Membership is limited to 250 members, 12 of whom are nominated by the President of India for their contributions to art, literature, science, and social services.
2. The remainder of body is elected by the state and territorial legislatures.
3. Members sat for six-year terms, with one-third of the members retiring every two years.

Select the correct answer using the codes given below:

- | | |
|-------------|----------------|
| (a) 1 only | (b) 2 and 3 |
| (c) 1 and 3 | (d) 1, 2 and 3 |

2. With reference to National Human Rights Commission of India, consider the following statements:

1. The National Human Rights Commission (NHRC) of India is an autonomous public body constituted on 12 October 1993 under the Protection of Human Rights Ordinance of 28 September 1993.
2. It was given a statutory basis by the Protection of Human Rights Act, 1993 (TPHRA).
3. The NHRC is the National Human Rights Institution, responsible for the protection and promotion of human rights, defined by the Act as "rights relating to life, liberty, equality and dignity of the individual guaranteed by the Constitution or embodied in the International Covenants".

Select the correct answer using the codes given below:

- | | |
|---------------------|------------------|
| (a) 1, 2 and 3 only | (b) 1 and 2 only |
| (c) 3 only | (d) 1 and 3 |

3. Consider the following statements with reference to amendments in the fundamental rights:

1. Changes to the fundamental rights require a constitutional amendment which has to be passed by a special majority of both houses of Parliament.
2. This means that an amendment requires the approval of two-thirds of the members present and voting.

Select the correct answer using the codes given below:

- | | |
|-------------|------------|
| (a) 1 only | (b) 2 only |
| (c) 1 and 2 | (d) None |

4. Consider the following statements with reference to right to property:

1. The Forty-Forth Amendment of 1968 deleted the right to property from the list of fundamental rights.

2. A new provision, Article 200-A, was added to the Constitution which provided that "no person shall be deprived of his/ her property save by authority of law".

3. Thus if a legislature makes a law depriving a person of his/ her property, there would be no obligation on the part of the state to pay anything as compensation.
4. The aggrieved person shall have no right to move the court under Article 32.

Select the incorrect answer using the codes given below:

- | | |
|----------------|----------------|
| (a) 3 and 4 | (b) 1 and 2 |
| (c) 1, 2 and 3 | (d) 1, 2 and 4 |

5. Consider the following statements:

1. The conferment of a person, as a citizen of India, is governed by Articles 5 to 11 (Part II) of Indian Constitution.
2. The legislation related to this matter is the Citizenship Act 1955, which has been amended by the Citizenship (Amendment) Act 1986, the Citizenship (Amendment) Act 1992, the Citizenship (Amendment) Act 2003, and the Citizenship (Amendment) Act, 2005.
3. Article 9 of Indian Constitution says that a person who voluntarily acquires citizenship of any other country is no longer an Indian citizen.
4. Indian nationality law largely follows the *jus sanguinis* (citizenship by right of blood) as opposed to the *jus soli* (citizenship by right of birth within the territory).
5. The President of India is termed the first citizen of India. Legal provisions relating to acquisition and termination of citizenship of India are contained in the Citizenship Act, 1955.

Select the correct answer using the codes given below:

- | | |
|-------------------|----------------------|
| (a) 1, 2, 3 and 4 | (b) 2, 3, 4 and 5 |
| (c) 1, 2, 3 and 4 | (d) 1, 2, 3, 4 and 5 |

6. Consider the following statements:

1. The Right of Citizens for Time Bound Delivery of Goods and Services and Redressal of their Grievance Bill, 2011 was introduced in the Lok Sabha on December 20, 2011.
2. The bill lapsed due to dissolution of the 15th lok sabha.
3. The bill makes it mandatory for every public and private authority to publish a citizen's charter within four months of the commencement of the Act.

Select the correct answer using the codes given below:

- | | |
|-------------|-------------|
| (a) 1 only | (b) 2 only |
| (c) 1 and 2 | (d) 1 and 3 |

7. Consider the following statements with reference to significance the Prime Minister in power structure:

1. The Prime Minister is the senior member of cabinet in the executive branch of government in a parliamentary system.
2. The Prime Minister selects and can dismiss other

members of the cabinet;

3. allocates posts to members within the government;
4. is the presiding member and chairman of the cabinet
5. is responsible for bringing proposal of legislation.
6. The resignation or death of the Prime Minister dissolves the cabinet.
7. The Prime Minister is appointed by the President to assist the latter in the administration of the affairs of the executive.

Select the correct answer using the codes given below:

- (a) 1, 3, 4, 6 and 7 (b) 1, 2, 3, 5 and 6
 (c) 2, 4, 5 and 7 (d) 1, 2, 3, 4, 5, 6 and 7

- 8.** The Constitution defines the duties of the Prime Minister, and in the discharge of those duties reacts as a link between the President and the Cabinet in this regard consider the following statements .The Prime Minister is:

1. to communicate to the President all decisions of the Council of Ministers,
2. to furnish such information relating to the administration of the affairs of the Union and proposals for legislation as the President may call for; and
3. if the President so requires, to submit for the consideration of the Council of Ministers any matter of which a decision has been taken by a minister but which has not been considered by the council.

Select the correct answer using the codes given below:

- (a) 1 and 2 (b) 1, 2 and 3
 (c) 1 and 3 (d) 2 and 3

- 9.** Consider the following statements:

1. The municipal bodies in most cases have been left only with the functions of garbage collection, garbage disposal, street lighting, construction and maintenance of roads, etc.
2. In terms of fiscal federalism, functions whose benefits largely confine to municipal jurisdictions and may be termed as the essentially municipal functions.
3. Similarly, functions that involve substantial economics of scale or are of national interest may not be assigned to small local bodies.

Select the correct answer using the codes given below:

- (a) 1 only (b) 2 and 4
 (c) 1, 2 and 3 (d) 1 and 3

- 10.** Consider the following statements:

1. The Twelfth Schedule of Constitution (Article 243 w) provides an illustrative list of eighteen functions, that may be entrusted to the municipalities.
2. Whereas Bihar, Gujarat,Himachal Pradesh, Haryana, Manipur, Punjab and Rajasthan have included all the functions as enlisted in the Twelfth Schedule in their amended state municipal laws.
3. Andhra Pradesh has not made any changes in the existing list of municipal functions. Karnataka, Kerala, Madhya Pradesh, Maharashtra, Odisha, Tamil Nadu, Uttar Pradesh and West Bengal states have amended their municipal laws to add additional functions in the

list of municipal functions as suggested in the twelfth schedule.

4. Whereas functions like planning for the social and economic development, urban forestry and protection of the environment and promotion of ecological aspects are obligatory functions for the municipalities of Maharashtra, in Karnataka these are discretionary functions.
5. In Tamil Nadu, Madhya Pradesh and Gujarat, water supply and sewerage works are being carried out by the state level Public Health Engineering Department or Water Supply and Sewerage Boards, while liability for repayment of loans and maintenance are with the municipalities.

Select the correct answer using the codes given below:

- (a) 1, 2, 3 and 4 (b) 2, 3, 4 and 5
 (c) 1, 2, 3 and 4 (d) 1, 2, 3, 4 and 5

- 11.** Consider the following statements regarding national policy on voluntary organisations:

1. A national policy on voluntary organisations was announced in 2009.
2. Voluntary organisations are meant organisations engaged in public service, based on ethical, cultural, social, economic, political, religious, spiritual, philanthropic, or scientific and technological considerations.
3. Voluntary organisations include formal as well as informal groups, such as community based organisations, non-governmental development organisations, charitable organisations, support organisations, networks or federations of such organisations, as well as professional membership associations.

Which of the above statement is/ are incorrect?

- (a) only 1 (b) 2 and 3
 (c) 1 and 3 (d) 1 and 2

- 12.** The Constitution of India has no direct provision expressly conferring right to information to the citizens. However, the Supreme Court has been stating since 1975 that the right to information is an intrinsic part of the right to freedom of speech and expression and right to life and personal liberty guaranteed by the Constitution of India. In India, various laws and rules restrict the disclosure of official information to the people and thus favour secrecy in administration. They are given below.

1. Official Secrets Act 1923
2. Indian Evidence Act 1872
3. Commission of enquiry Act 1952
4. All India Services Rules 1954

Which of the above Acts is/are true?

- (a) 1, 2 and 3 (b) 1, 2, 3 and 4

through the instrumentality of the standing/ad hoc committees of secretaries. Through this mechanism new policy initiatives are also promoted.

Select the correct answer using the codes given below:

- | | |
|-------------|------------|
| (a) 1 only | (b) 2 only |
| (c) 1 and 2 | (d) None |

20. Consider the following statements with reference to right to education:

1. Article 21A – On 1 April 2011, India joined a group of few countries in the world, with a historic law making education a fundamental right of every child coming into force.
2. Making elementary education an entitlement for children in the 6–14 age group, the Right of Children to Free and Compulsory Education Act will directly benefit children who do not go to school at present.
3. Prime Minister Manmohan Singh announced the operationalisation of the Act.
4. Children, who had either dropped out of schools or never been to any educational institution, will get elementary education as it will be binding on the part of the local and state governments to ensure that all children in the 6–14 age group get schooling.
5. As per the Act, private educational institutions should reserve 25 per cent seats for children from the weaker sections of society.

Select the correct answer using the codes given below:

- | | |
|-------------------|----------------------|
| (a) 1, 2, 3 and 4 | (b) 2, 3, 4 and 5 |
| (c) 1, 2, 3 and 4 | (d) 1, 2, 3, 4 and 5 |

21. Recently the term “E-governance vision 2020” was in news, because-

1. The Election Commission of India is working on it.
 2. Will provide inclusive, integrated single window view of services to all stakeholders in all phases of the electoral cycle using multiple channel of delivery.
 3. Will have six strategic goals and 10 mission mode projects wherein some of priority areas will be in mobile apps, social media, knowledge and learning management.
 4. increase of use of Information, Communication and Technology (ICT) in elections.
- choose the correct option.

- | | |
|---------------|-------------|
| (a) 1 and 2 | (b) 2 and 3 |
| (c) 1,2 and 4 | (d) 1 and 4 |

22. Consider the following statement about RURBAN Mission launched by Prime Minister recently?

1. launched from Kurubhat village in Dongargarh block of Rajnandgaon district in Chhattisgarh.
2. seeks to develop smart village on the line of smart cities and reduce the burden of migration to the cities through adopting ‘cluster approach’.
3. Launched as “Shyama Prasad Mukherjee National Rurban Mission”
4. In the first stage, five districts of the state will be covered under the scheme.

Which of the above statement/s is/are incorrect?

- | | |
|-------------|-------------|
| (a) 1 and 2 | (b) Only 4 |
| (c) Only 3 | (d) 1 and 4 |

23. Consider the following statements.

1. India hosted second edition meeting of Forum for India-Pacific Islands Cooperation (FIPIC) on 21 August 2015 in Jaipur, Rajasthan.
2. The FIPIC meeting paves the way for agreements in various potential areas between India and other nations.
3. It includes sectors such as agriculture, fisheries, food processing, solar energy etc.

Which among the above is/are correct?

Codes:

- | | |
|-----------------|------------------|
| (a) 2 only | (b) 1 and 2only |
| (c) 2 and 3only | (d) All of these |

24. When is the World Day of Social Justice observed?

- | | |
|-----------------|-----------------|
| (a) February 20 | (b) February 10 |
| (c) January 20 | (d) January 10 |

25. Which of the following state fixed fix matriculation as minimum educational qualification for elections to Panchayati Raj Institutions (PRIs)?

- | | |
|-------------|-------------|
| (a) Gujarat | (b) Haryana |
| (c) Punjab | (d) Bihar |

HINTS & EXPLANATIONS

1. (d) Rajya Sabha is the upper house and Lok Sabha is the lower house. The two houses meet in separate chambers in the Sansad Bhavan (located on the Sansad Marg or “Parliament Street”) in New Delhi. Those elected or nominated (by the President) to either house of Parliament are referred to as members of Parliament or MPs.
2. (a) TPHRA mandates the NHRC to perform the following functions: Proactively or reactively inquire into violations of human rights or negligence in the prevention of such violation by a public servant by leave of the court, to intervene in court proceeding relating to human rights visit any jail or other institution under the control of the state government, where persons are detained or lodged for purposes of treatment, reformation or protection, for the study of the living conditions of the inmates and make recommendations review the safeguards provided by or under the Constitution or any law for the time being in force for the protection of human rights and recommend measures for their effective implementation review the factors, including acts of terrorism that inhibit the enjoyment of human rights and recommend appropriate remedial measures.
3. (c) However, the number of members voting should not be less than the simple majority of the house – whether the Lok Sabha or Rajya Sabha. The right to education at elementary level has been made one of the fundamental rights under the Eighty-Sixth Amendment of 2002.
4. (b) The Constitution originally provided for the right to property under Articles 19 and 31. Article 19 guaranteed to all citizens the right to acquire, hold and dispose of property. Article 31 provided that “no person shall be deprived of his/her property save by authority of law.” It also provided that compensation would be paid to a person whose property has been taken for public purposes.

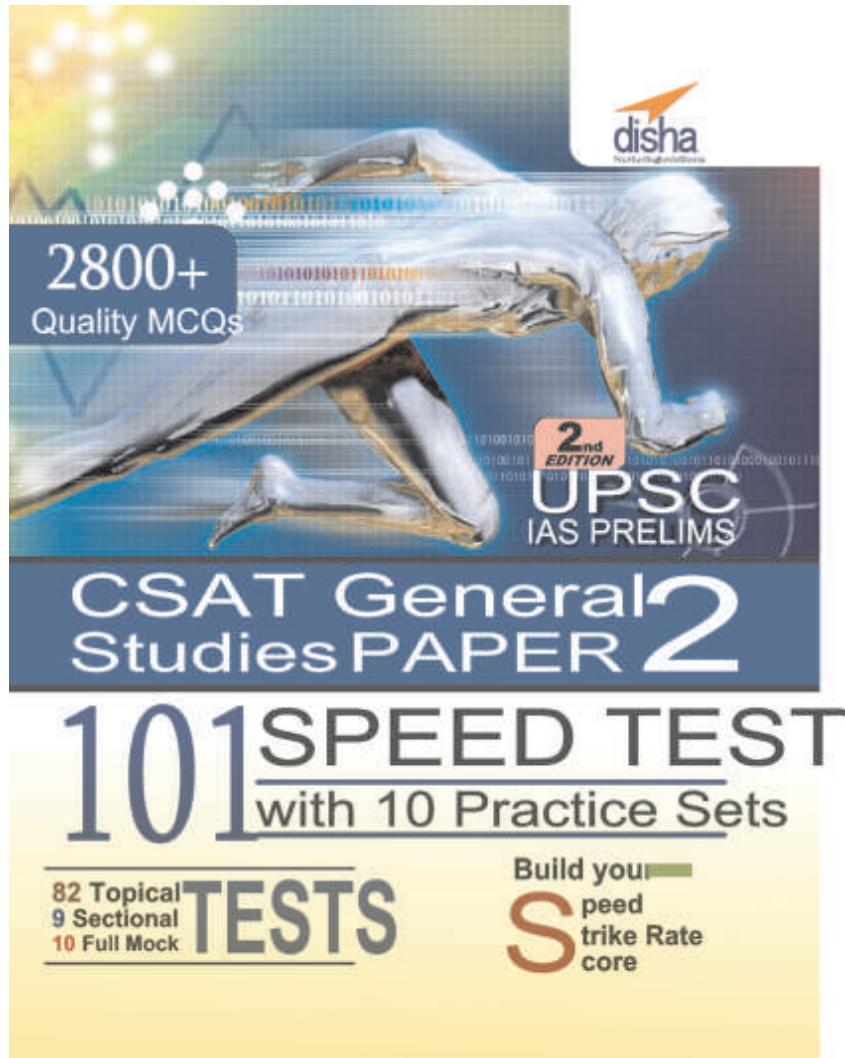
The provisions relating to the right to property were changed a number of times. Thus, the right to property is no longer a fundamental right, though it is still a constitutional right. If the government appears to have acted unfairly, the action can be challenged in a court of law by citizens.
5. (d) The commencement of this Constitution, every person who has his domicile in the territory of India and—
 - (a) who was born in the territory of India; or
 - (b) either of whose parents was born in the territory of India; or
 - (c) who has been ordinarily resident in the territory of India for not less than five years immediately preceding such commencement, shall be a citizen of India. Notwithstanding anything in article 5, a person who has migrated to the territory of India from the territory now included in Pakistan shall be deemed to be a citizen of India at the commencement of this Constitution
6. (c) The bill makes it mandatory for every public authority to publish a Citizen’s Charter within six months of the commencement of the Act. A “public authority” is defined as an institution of self-government constituted (a) under the Constitution; (b) by law made by Parliament or a state legislature. It also includes a government company, a non-government organisation substantially financed directly or indirectly by the appropriate government, and a company which supplies goods or services under an obligation imposed by an Act.
7. (d) All statements are correct.
8. (b) With India following a parliamentary system of government the Prime Minister is generally the leader of a party (or coalition of parties) that has a majority in the Lok Sabha, the lower house of the Parliament of India. The Prime Minister, in common with all other ministers at central & state level, either has to be a current member of one of the houses of Parliament, or be elected within six months of being appointed.
9. (c) For valid reasons, certain functions of higher authorities are appropriate to be entrusted with the municipalities – as if under principal-agent contracts and may be called agency functions that need to be financed by intergovernmental revenues. Thus instead of continuing the traditional distinction between obligatory and discretionary functions, the municipal responsibilities may be grouped into essentially municipal, joint and agency functions.
10. (d) All statements are correct.
11. (a) All of the above statements regarding national policy on voluntary organisations are correct to be covered under the policy, voluntary organisations should private, self-governing and informal groups with defined aims and objectives. They do not return the profits generated to their owners or directors.
12. (b) Along with the above acts, two other laws and rules restrict the disclosure of official information to the people and thus favour secrecy in administration. They are Central Civil Services (conduct) Rules, 1955 and Railway Services (conduct) rules, 1956. Recognising the need for setting out a practical regime for securing of information by citizens from the public authorities, and to promote transparency and accountability in the working of all public authorities, the Parliament enacted the Right to Information Act 2005.
13. (c) The member in the Rajya Sabha has a term of 6 years. A person should be at least of 30 years of age to contest the

- election for Rajya Sabha. It is never dissolved as only one-third of its members retire after every two years.
14. (b) The Constitution is silent on who performs the duties of the Vice-President, when a vacancy occurs in the office of the Vice-President of India, before the expiry of his/ her term, or when the Vice-President acts as the President of India. The only provision in the Constitution is with regard to the Vice-President's function as the Chairperson of the Council of States (Rajya Sabha), which is performed, during the period of such vacancy, by the Deputy Chairperson of the Rajya Sabha, or any other member of the Rajya Sabha authorised by the President of India.
15. (a) The Parliament includes the Lok Sabha, the Rajya Sabha and the Parliament. The President is not a member of any of the two houses.
16. (d) The Speaker is the presiding officer of the lower house (Lok Sabha) of Parliament of India. His/her role is similar to that of Speakers elsewhere in other countries that use the westminster system of government. The speaker is elected in the very first meeting of the Lok Sabha after the general elections for a term of 5 years from amongst the members of the Lok Sabha.
17. (a) The Supreme Court, after the judgment in the Kesavananda Bharati case, has adopted the view of the Fundamental Rights and Directive Principles being complementary to each other, each supplementing the other's role in aiming at the same goal of establishing a welfare state by means of social revolution.
18. (d) Every public authority shall appoint Grievance Redress Officers (GRO) within six months of the Act coming into force. These officers shall be appointed at various levels, i.e. central, state, district, Panchayat and municipality to inquire and redress any complaints. The complaint has to be acknowledged within two days of making the complaint.
19. (c) The Cabinet Secretariat is responsible for the administration of the Government of India (Transaction of Business) Rules, 1961 and the Government of India (Allocation of Business) Rules 1961, facilitating smooth transaction of business in ministries/departments of the government by ensuring adherence to these rules.
20. (b) The centre and the states have agreed to share the financial burden in the ratio of 55:45, while the Finance Commission has given Rs.250 billion to the states for implementing the Act. The centre has approved an outlay of Rs.150 billion for 2010–2011. The school management committee or the local authority will identify the drop-outs or out-of-school children aged above six and admit them in classes appropriate to their age after giving special training. The act came into force on 1 April 2010.
21. (c) The Vision 2020 will have five strategic goals and 11 mission mode projects wherein some of priority areas will be in mobile apps, social media, knowledge and learning management.
22. (b) In the first stage, four districts - Rajnandgaon, Dhamtari, Kabirdham and Bastar of the state will be covered under the scheme.
23. (d) India host second edition meeting of Forum for India-Pacific Islands Cooperation (FIPIC) on 21 August 2015 in Jaipur, Rajasthan. The meeting was attended by the heads of 14 island nations from Indo-Pacific oceanic region.
24. (a) World Day of Social Justice was observed on 20 February 2016 with the theme A Just Transition - environmentally sustainable economies and societies.
25. (b) Haryana Assembly has passed Haryana Panchayati Raj (Amendment) Bill, 2015 that seeks to fix matriculation as minimum educational qualification for elections to Panchayati Raj institutions (PRIs). With this Haryana became second state in India after Rajasthan to fix educational and other qualifications for the candidates contesting Panchayat elections.



PROBLEM SOLVING SECTION TEST WITH SOLUTIONS

This section test is taken from :



ISBN : 9789385846663

Max. Marks : 20

No. of Qs. : 20

Time : 20 min.

Date :/...../.....

DIRECTIONS (Qs. 1 -5) : Study the given information carefully and answer the questions that follow :

- (i) A, B, C, D, E, F and G are sitting on a wall and all of them are facing east.
 - (ii) C is on the immediate right of D.
 - (iii) B is at an extreme end and has E as his neighbour.
 - (iv) G is between E and F.
 - (v) D is sitting third from the south end.
1. Who is sitting to the right of E?
 - (a) A
 - (b) C
 - (c) D
 - (d) None of these
 2. Which of the following pairs of people are sitting at the extreme ends?
 - (a) AB
 - (b) AE
 - (c) CB
 - (d) Cannot be determined
 3. Name the person who should change places with C such that he gets the third place from the north end.
 - (a) E
 - (b) F
 - (c) G
 - (d) D
 4. Immediately between which of the following pairs of people is D sitting?
 - (a) AC
 - (b) AF
 - (c) CE
 - (d) CF
 5. Which of the conditions (i) to (v) given above is not required to find out the place in which A is sitting?
 - (a) (i)
 - (b) (ii)
 - (c) (iii)
 - (d) All are required

DIRECTIONS (Qs. 6-8) : Study the following information carefully and answer the question that follow:

Six products U, V, W, X, Y and Z are to be placed in display windows of a shop. There are six display windows – numbered 1, 2, 3, 4, 5, 6 and one product is to be put in one window. Moreover, U cannot be immediately to the left or immediately to the right of V. W must be immediately to the left of X. Z cannot be in window number 6 :

6. Which of the following products cannot be placed in window no. 1 ?
 - (a) U
 - (b) V
 - (c) W
 - (d) X
7. If X is placed in window no. 3, then W must be placed in which window ?
 - (a) 1
 - (b) 2
 - (c) 4
 - (d) 5
8. If U is placed in window no. 5, then which of the following products must be placed in window no. 6 ?
 - (a) V
 - (b) W
 - (c) X
 - (d) Y

DIRECTIONS (Qs. 9-12) : Study the following information carefully and answer the questions that follow :

Indian Olympic Association is in the process of selecting a team of four athletes for participating in the relay race in the forthcoming Olympics. After watching their performance in the national events, the Association has short-listed seven athletes. Their names are Zacharia, Yohana, Wasim, Dalbir, Chakarvarti, Bishan and Ali. The association wants that, in the final team, there should be two athletes who have participated in the Olympic earlier. Zacharia, Yohana and Wasim have represented the country earlier. The association also wants that the team should be well-kind and friendly but is faced with a situation wherein Yohana and Anil are not friendly while Zacharia and Chakarvarti don't see eye to eye with each other. To make the matters more difficult, Anil and Bishan do not like each other.

Based on the above requirements and assumptions, answer the following questions :

9. If both Zacharia and Yohana have to be included as experienced, athletes, then which of the other athletes must be in the team as well ?
 - (a) Dalbir and Chakarvarti
 - (b) Bishan and Dalbir
 - (c) Krishan and Anil
 - (d) Dalbir
10. If Bishan is selected and Yohana is rejected, then the team will consist of :
 - (a) Wasim, Zacharia, Anil and Bishan
 - (b) Wasim, Zacharia, Dalbir and Bishan
 - (c) Wasim, Zacharia, Chakarvarti and Bishan
 - (d) Zacharia, Dalbir, Chakarvarti and Bishan
11. If Anil is in the team, then which other athletes must be in the team as well ?
 - (a) Zacharia, Wasim and Dalbir
 - (b) Wasim, Yohana and Dalbir
 - (c) Wasim, Zocharia and Bishan
 - (d) Wasim, Zocharia and Chakarvarti
12. Which of the following is/are not true ?
 - A : Yohana and Chakarvarti are never selected together.
 - B : Bishan and Zacharia are never selected together.
 - C : Zacharia and Dalbir are never selected together.
 - (a) A only
 - (b) B only
 - (c) C only
 - (d) A, B and C.
13. In five flats, one above the other, live five professionals. The professor has to go up to meet his IAS officer friend. The doctor is equally friendly to all, and has to go up as frequently as go down. The engineer has to go up to meet his MLA friend above whose flat lives the professor's friend. From the ground floor to the top floor, in what order do the five professionals live ?
 - (a) Engineer, Professor, Doctor, IAS officer, MLA
 - (b) Professor, Engineer, Doctor, IAS officer, MLA
 - (c) IAS officer, Engineer, Doctor, Professor, MLA
 - (d) Professor, Engineer, Doctor, MLA, IAS officer

DIRECTIONS (Qs.14-18): Study the following information carefully and answer the given questions.

Eight people - E, F, G, H, J, K, L and M are sitting around a circular table facing the centre. Each of them is of different profession- Chartered Accountant, Columnist, Doctor, Engineer, Financial Analyst, Lawyer, Professor and Scientist but not necessarily in the same order. F is sitting second to the left of K. The Scientist is an immediate neighbour of K. There are only three people between the Scientist and E. Only one person sits between the Engineer and E. The Columnist is to the immediate right of the Engineer. M is second to the right of K. H is the Scientist. G and J are immediate neighbours of each other. Neither G nor J is an Engineer. The Financial Analyst is to the immediate left of F. The Lawyer is second to the right of the Columnist. The Professor is an immediate neighbour of the Engineer. G is second to the right of the Chartered Accountant.

14. Who is sitting second to the right of E?
 - (a) The Lawyer (b) G
 - (c) The Engineer (d) F
15. Who amongst the following is the Professor?
 - (a) F (b) L
 - (c) M (d) K
16. Four of the following five are alike in a certain way based on the given arrangement and hence form a group. Which of the following **does not** belong to that group?
 - (a) Chartered Accountant - H
 - (b) M - Doctor

(c) J - Engineer

(d) Financial Analyst - L

17. What is the position of L with respect to the Scientist?
 - (a) Third to the left (b) Second to the right
 - (c) Second to the left (d) Third to the right
18. Which of the following statements is true according to the given arrangement?
 - (a) The Lawyer is second to the left of the Doctor
 - (b) E is an immediate neighbour of the Financial Analyst
 - (c) H sits exactly between F and the Financial Analyst
 - (d) Only four people sit between the Columnist and F

DIRECTIONS (Qs. 19 & 20) Study the information below and answer questions based on it.

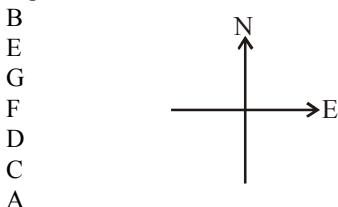
There are six people A, B, C, D, E and F. Two of them are housewives, one is an accountant, one is an architect, one is a lawyer and one is a lecturer. A, the lawyer is married to D & E is not the housewife. None of the females is the architect or the accountant. There are two married couples. C is the accountant, Married to the lecturer F.

19. What is the profession of E
 - (a) Accountant (b) Lecturer
 - (c) Architect (d) None of these
20. How many males are there
 - (a) 2 (b) 3
 - (c) 4 (d) can't be determined

HINTS & Solutions

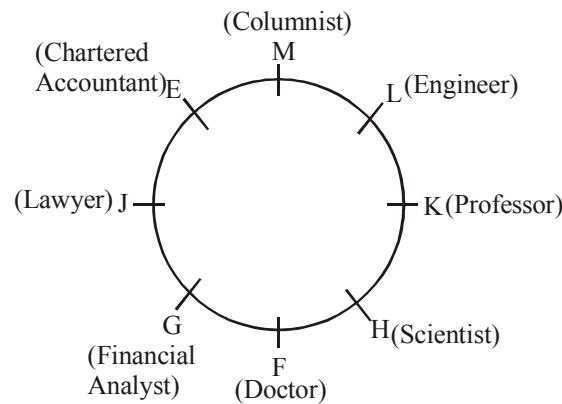
Sol. for (1-5):

C is to the right of D and D is third from south. So, B will be at the extreme end from north because it should have E as its neighbour. G is between E and F. So the sequence is:



1. (d) G is sitting to the right of E.
2. (a) A and B are sitting at the extreme ends.
3. (c) G should change place with C to make it third from north.
4. (d) D is sitting between C and F.
5. (d) All the statements are required to determine the place of A.
6. (d) As W is to be placed immediately to the left of X, we cannot place X in window 1.
7. (b) Clearly, W must be placed in window no. 2 as dictated by the restrictions.
8. (d) If U is placed in window no. 5, then Y will placed in window 6.
9. (b) If Zacharia is included, Chakravarti should not be selected while Anil should not be selected when Yohana is selected. Therefore, other athletes in the group may be Bishan and Dalbir.
10. (b) If Bhishan is selected and Yohana is rejected, then Wasim should be included as the player who was earlier represented in Olympics. Now, Anil is not to be in team as Bishan is there and Chakravarty has to be rejected as Zacharia is in team. Therefore, the team consists of Wasim, Zacharia, Dalbir and Bishan.
11. (a) Other athletes in the team are Zacharia, Wasim and Dalbir.
12. (d) All the three statements are not true.

Professionals	Flats
IAS	5th
MLA	4th
Doctor	3rd
Engineer	2nd
Professor	1st

Sol. for (14-18):


14. (b)
15. (d)
16. (c)
17. (b)
18. (a)

Sol. for (19-20):

The information provided in the problem can be tabulated as follows :

Husband	Occupation	Wife	Occupation
A	Lawyer	D	(Housewife)
C	Accountant	F	Lecturer

E can only be the architect, hence has to be male. D can only be a housewife, which means that A is a male. Consequently, B also has to be a housewife. The males are A, C and E.

19. (c) E is architect
20. (b) There are three males in all.

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enabled platform for next generation knowledge management.

- (b) The network will serve as a strategic ‘virtual think tank’

(c) The outcome target will be the germination of ideas on development and articulating and mapping out solutions through innovation and technological interventions

(d) The network is being developed by Reliance communication

17. Which one of the following pairs with respect to computer is not correctly matched?

(a) 1 megabyte : $(1024) \times (1024)$ bytes

(b) Compiler : A programme which translates a high-level language programme into machine language

(c) Liveware: The users working on the system

(d) Plotter : An electronic device used to convert digital electronic signals to communication channel electronic signals and vice versa

18. Consider the following statements:

 1. Smart card is a plastic card with an embedded microchip.
 2. Digital technology is primarily used with new physical communication medium such as satellite and fibre optics

transmission.

3. A digital library is a collection of documents in an organized electronic form available on the internet only.

Which of the statements given above is/are correct?

19. Consider the following:

- 1. Bluetooth device
 - 2. Cordless phone
 - 3. Microwave oven
 - 4. Wi-Fi device

Which of the above can operate between 2.4 and 2.5 GHz range of radio frequency band?

20. A new optical disc format known as the Blu-ray Disc (BD) is becoming popular. In what way is it different from the traditional DVD ?

1. DVD supports Standard Definition video while BD supports high definition video
 2. Compared to a DVD, the BD format has several times more storage capacity
 3. Thickness of BD is 2.4 mm while that of DVD is 1.2 mm.

Which of the statements given above is/are correct?

HINTS & EXPLANATIONS

1. (c) A geostationary satellite is a satellite whose orbit on the Earth repeats regularly over point on the Earth over time. The orbit of the satellite is known as geosynchronous/geostationary orbit. It has an approximate height of 35000 km from the surface of the Earth.
2. (d) Dream-Dynamic Response of the Environment at the Moons ARTEMIS-Accelaration, Reconnection, Turbulence and Electrodynamics of the Moon's Interaction with the Sun LADEE-Lunar Atmosphere Dust Environment Explorer MAVEN-Mars Atmosphere and Volatile Evolution (a mission to mars and not moon)
3. (d) GSLV is three staged vehicle equipped with solid propellant at first stage, liquid at second and cryogenic engine at third and PSLV is 4 marked by alternate solid and liquid boosters.
4. (d) Agni is a surface to surface missile developed in India under Integrated Guided Missile Programme.
5. (d) Airborne Early Warning and Control System is an airborne radon system designed to detect aircraft at long ranges. AEWACS-Phalcon was inducted in the Indian Air Force in 2009.
6. (d) BrahMos is a supersonic cruise missile that is developed jointly by India's DRDO and Russia's NPO. The acronym of BrahMos is perceived as the confluence of the nations represented by two rivers, the Brahmaputra of India and the Moskva of Russia.
7. (d) Admiral Gorshkov has been renamed as INS Vikramaditya by the Indian Navy, it is all set to be procured by India and it is estimated to enter in service after 2012. Admiral Gorshkov is a modified Kiev class aircraft carrier of Russian Navy.
8. (a) All the four statements are correct
9. (b) Kiran MK 11: Aerobatic aircraft
MI 35 : Attack helicopter
Mirage 2000 is a jet fighter aircraft
10. (d) The Lakshya is an Indian remotely piloted high speed target drone system developed by the ADE of DRDO. It is a Pilotless Target Aircraft (PTA). So far 23 PTA have been inducted in the defence system. It has a range of 150 km.
11. (c) The NSG (National Security Guards) is a special response unit in India that has primarily been utilized for counter-terrorism activities. NSG is modelled on Germany's GSH 9. The NSG is also known as Black Cats. The NSG's roles include protecting VIP's, conducting anti-sabotage checks, rescuing hostages, neutralizing terrorist threats to vital installation, engaging terrorists and responding to hijacking and piracy.
12. (b) In a nuclear disaster, the main focus is to cool the nuclear reactor. Pumping of water to the reactors and use of boric acid are some of the options.
13. (d) India has declared 'no-first-use' policy and is in the process of developing a nuclear of doctrine based on credible minimum deterrence. In August 1999, the Indian government released a draft of the doctrine. The authority to release nuclear weapons for use is on the President of India.
14. (c) The United States-India Peaceful Atomic Energy cooperation Act, 2006 was named after chairman of the House committee on international relations Henry J. Hyde. The agreement is also known as 123 agreement. Under the agreement, India agreed to separate its civil and military nuclear facilities and place all its civil nuclear facilities under IAEA (International Atomic Energy Agency) safeguards.
15. (b) More than 3.8 billion people worldwide used the Global System for Mobile Communications (GSM) family of technologies as of May 2009. GSM is the most widely used wireless technology in the world. GSM has straightforward, cost-effective migration path to 3G through GPRS, EDGE and UMTS-HSPA, as well as beyond 3G via the HSPA Evolution (HSPA+). LTE and System Architecture Evolution (SAE) initiatives.
16. (d) Prime Minister at the Pravasiya Bhartiya Divas held 2009, at Chennai had inaugurated a portal-Global Indian Network of Knowledge. The network is being developed by Tata Consultancy Services (TCS).
17. (d) Plotter is a computer printing device for printing vector graphics, whereas a compiler is a computer programme that transforms source code written in a computer language into another computer language. Liveware was used in the computer industry as early as 1966 to refer to computer users in humorous contexts by analogy with hardware and software.
18. (b) A digital library is a library in which collections are stored in digital formats (as opposed to print, microform, or other media) and accessible by computers. The digital content may be stored locally, or accessed remotely via computer networks. Thus, it can be available extra then internet also. Thus, statement 3 is wrong while 1 and 2 are correct. A smart card, chip card, or integrated circuit card (ICC), is any pocket-sized card with embedded integrated circuits. American engineers began developing digital technology in the mid-twentieth century. Digital technology enables immense amounts of information to be compressed on small storage devices that can be easily preserved and transported. Digitization also quickens data transmission speeds. Telecommunications has relied on digital methods to transmit messages. In the early 1980s, enhanced fibre optics enabled the development of digital communication networks. Communication satellites known as direct broadcast satellite (DBS) transmitted compressed digital signals for viewers to receive several hundred television programming choices.
19. (d) Microwaves are electromagnetic waves with wavelengths ranging from as long as one meter to as short

as one millimeter, or equivalently, with frequencies between 300 MHz (0.3 GHz) and 300 GHz. A microwave oven passes (nonionizing microwave radiation (at a frequency near 2.45 GHz) through food, causing dielectric heating by absorption of energy in the water, fats and sugar contained in the food. Bluetooth and Wi-Fi have many applications: setting up networks, printing, or transferring files. They also work in

the given frequency range. All cordless sold in the US use the 1.9 GHz or 2.4-GHz bands.

20. (b) Statement 3 is incorrect as the thickness of BD is 1.1 mm while that of DVD is 1.2 mm. The difference lies in capacity so statement 2 is correct. As far as statement 1 is concerned.

UNION GOVERNMENT – Simple MCQ's with Explanations



1. The President takes an oath before taking office in the presence of Chief Justice of India. If the Chief Justice is not available, he takes the oath in the presence of the
(a) Vice-President
(b) Senior-most Judge of the Supreme Court
(c) Attorney-General
(d) Election Commissioner

2. _____ elects the Vice-President?
(a) Electoral college which elects the President
(b) Members of the Rajya Sabha and Lok Sabha
(c) Electoral college consisting of members of Parliament
(d) Members of Parliament in a joint meeting

3. Candidate for Vice-presidential election must possess the qualifications prescribed for a Presidential candidate except that he must be:
(a) a citizen of India
(b) over 35 years of age
(c) hold no office of profit under the Government
(d) Qualified to be a member of the Rajya Sabha

4. A resolution for impeaching the President can be moved after 14 days' notice signed by
(a) not less than 50 members of the House
(b) not less than one-third of the total number of members of the House
(c) not less than one-fourth of the total number of members of the House
(d) at least 100 members of Lok Sabha and 50 members of Rajya Sabha

5. If a resolution impeaching the President is passed, the President is considered to have been removed
(a) from the date on which the resolution is passed
(b) when the Chief Justice of India passes such an order
(c) notification in the Gazette of India
(d) once a new incumbent is elected

6. _____ powers are exercised both by the President and the Governors?
(a) Power to pardon a sentence by court martial
(b) Power to remit a sentence in an offence relating to matters on the State List

7. Legislative powers of the President EXCLUDES the power to :
(a) summon or prorogue the Houses of Parliament
(b) call a joint sitting of the Houses to resolve deadlocks
(c) nominate 12 members to the Lok Sabha
(d) address either House at any time

8. An ordinance promulgated by the President :
(a) has an indefinite life
(b) effective only if the Lok Sabha is dissolved
(c) must be laid before the Parliament when it meets
(d) is a parallel power of legislation available to the President even when Parliament is in session

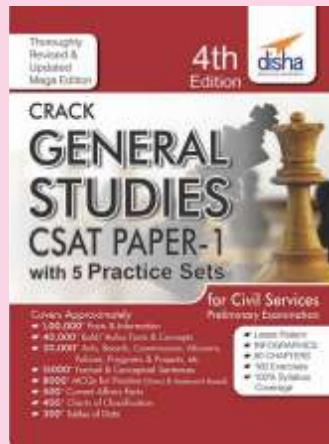
9. _____ requires previous sanction of the President for introducing legislation
(a) Money bill
(b) Bill affecting taxation in which States are interested
(c) State bills imposing restrictions upon freedom of trades
(d) All of the above

10. If the President returns a bill to the legislature for reconsideration:
(a) a re-passage of the bill by two-thirds majority forces him to give his assent
(b) a re-passage of the bill by a majority will make him give an assent
(c) joint sitting of the parliament is needed to pass the bill.
(d) legislature must accept the amendments proposed by the President

11. If the Chairman of Rajya Sabha becomes acting President, his duties as a Chairman are performed by
(a) Continues as Chairman
(b) A newly elected Chairman
(c) Deputy Chairman
(d) Member of Rajya Sabha deputed by the Chairman

12. President may send the advice received from the Council

This Chapter is taken from :



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- of Ministers back for reconsideration. This power can be exercised by him
- Once
 - Twice
 - Thrice
 - Unlimited number of times
13. Military powers of the President EXCLUDES
- Supreme command of the armed forces
 - President's power to declare war or peace is subject to control by the Parliament
 - President needs the sanction of Parliament to approve training and maintaining of armed forces
 - President is independent of all legislative control
14. President does NOT APPOINT the
- Finance Commission
 - Planning Commission
 - Commission on Official Languages
 - UPSC
15. Post of the Prime Minister of India:
- is based on conventions
 - has been created by the Parliament
 - has been created by the Constitution
 - is less powerful than that of the President
16. In case of resignation or death of the Prime Minister
- Council of Ministers is dissolved
 - General elections are held
 - Cabinet elects another leader
 - Lok Sabha is dissolved
17. Prime Minister holds his office during the pleasure of the President but can continue if he enjoys the confidence of the
- Electorate
 - Lok Sabha
 - Party to which he belongs
 - Parliament
18. In parliamentary democracy the
- Executive controls the Legislature
 - Executive and Legislature are separate
 - Judiciary controls both legislature and Executive
 - Legislature controls the Executive
19. According to the Constitution
- Prime minister allocates work amongst ministers based on specific guidelines
 - Number of ministers, including the prime minister should not be more than 15% of total number of members of Lok Sabha
 - a member of either House of Parliament from any political party who is disqualified under the, Anti-Defection Act appointed a minister during that term even if elected again
 - all of the above are correct
20. If an unqualified or disqualified person attends and votes in either house of the Parliament
- he is prosecuted and jailed
 - he is fined ` 500 per day of his sitting
 - he may be imprisoned
21. Money Bill
- cannot be introduced in the Rajya Sabha
 - has to be certified by the President
 - can be amended by the Council of States
 - both (a) and (b)
22. Amendments cannot be put up in either House to
- Annual Financial Statement
 - Appropriation Bill
 - Demand for grants
 - Any of the above
23. Privileges of the members of Parliament include:
- Freedom from arrest in all cases
 - Freedom of attendance as witness if Parliament is in session
 - Total freedom of speech
 - All of the above
24. Parliament does not have the power to remove:
- Comptroller and Auditor General
 - Supreme Court Judges
 - Chairman of UPSC
 - High Court Judges
25. _____ is not a Financial Committee of the Parliament
- Public Accounts Committee
 - Estimates Committee
 - Committee on Public Under-takings
 - Rules Committee
26. Members of Rajya Sabha are:
- Elected indirectly
 - All are nominated
 - Elected both directly and indirectly
 - Elected by members of State Legislative assemblies and Legislative Councils
27. A dissolution does not affect:
- A bill that originated in the Rajya Sabha and is with Lok Sabha the President calls upon it to do so
 - Rajya Sabha passes a resolution by simple majority that it is necessary in national interest
 - Speaker certifies the need
 - There is a national emergency
28. Parliament can legislate on a subject in the State List if:
- The President calls upon it to do so
 - Rajya Sabha passes a resolution by simple majority that it is necessary in national interest
 - Speaker certifies the need
 - There is a national emergency
29. A No-Confidence Motion:
- is expressed against an individual minister or council of ministers
 - no grounds are needed.
 - 100 members' have to support it
 - always against the Prime Minister
30. _____ ensures that no unauthorized money is spent out of the Consolidated Fund of a State.
- Public Accounts Committee

- Parliament, which one of the following statements is correct?
- The decision of the Union Finance Minister is final on the question whether a bill is Money Bill or not
 - A Money Bill can be introduced only in the Lok Sabha
 - After a money bill is passed by Lok Sabha and transmitted to Rajya Sabha, it should be returned within one month
 - When Rajya Sabha returns the Money Bill with its recommendations, the Lok Sabha has to accept such recommendations
47. In the absence of both the President of India and the Vice-President, who shall act as the President of India?
- Prime Minister
 - Speaker of the Lok Sabha
 - Chief Justice of the Supreme Court
 - Deputy Chairman of Rajya Sabha
48. Which one of the following statements is not correct ?
- All the expenditure other than that which is charged on the Consolidated Fund of India is to be submitted to the Lok Sabha in the form of demands for grants
 - No demand for a grant is made except on the recommendation of the President of India
 - The Lok Sabha can refuse assent to any demand for grant
 - The Lok Sabha can suggest an increase in the expenditure
49. Article 75 of the Constitution of India provides that the Council of Ministers of the Union shall be collectively responsible to
- the House of the People
 - both the Houses of Parliament
 - the President only
 - the President and both the Houses of the Parliament
50. The Union Executive of India consists of:
- The President; Vice-President, Lok Sabha Speaker and the Council of Ministers
 - The President, Deputy Chairman of the Rajya Sabha, Lok Sabha Speaker and the Prime Minister
 - The President and the Council of Ministers only
 - The President, Vice-President and the Council of Ministers only
51. When an ordinary Bill is referred to a joint sitting of both the Houses of Indian Parliament, it has to be passed by a
- simple majority of the total number of members of both the Houses present and voting
 - two-third majority of the total number of members of both the Houses
 - simple majority of the total number of members of both the Houses
 - two-third majority of the total number of members of both the Houses present and voting
52. Which one of the following statements about a Money Bill is not correct?
- (a) A Money Bill can be tabled in either House of Parliament
- (b) The Speaker of Lok Sabha is the final authority to decide whether a Bill is a Money Bill or not
- (c) The Rajya Sabha must return a Money Bill passed by the Lok Sabha and send it for consideration within 14 days
- (d) The President cannot return a Money Bill to the Lok Sabha for reconsideration
53. Which one of the following duties is not performed by Comptroller and Auditor general of India?
- To audit and report on all expenditure from the Consolidated Fund of India
 - To audit and report on all expenditure from the Contingency Funds and Public Accounts
 - To audit and report on all trading, manufacturing, profit and loss accounts
 - To control the receipt and issue of public money, and to ensure that the public revenue is lodged in the exchequer
54. What is a ‘charged expenditure’?
- An expenditure which has been incurred already and for the bills which are pending for payment
 - Expenditure on the essential aspects of administration
 - The expenditure that can be incurred by the president without the approval of the parliament.
 - The expenditure from the Consolidated Fund of India for which the approval of the Parliament is not necessary, according to the Constitution.
55. Which of the following statements is not correct?
- The president shall not be answerable to any court for the exercise and performance of the powers and duties of his office
 - Parliament can initiate, in accordance with the procedure laid down in the Constitution, impeachment proceedings against the President during the term of his office
 - Civil proceedings can be instituted against the President, in respect of any act done in his personal capacity before he entered upon his office as President, during the term of his office
 - No criminal proceedings shall be instituted or continued against the President in any Court during his term of office
56. The Comptroller and Auditor General of India
- Can be appointed as a member of U.P.S.C. after his retirement
 - Can be appointed as Chairman of the State Public Service Commission
 - Shall not be eligible for any further office either under the government of India or under the Government of any State after his retirement
 - Can be appointed to any office after his retirement
57. Which one of the following is not a main feature of the

- Cabinet system of government as it prevails in India?
- The members of the Council of Ministers are chosen by the president and not by the Prime Minister
 - The proceedings of the Cabinet are kept secret
 - The Prime Minister presides over the Cabinet meetings
 - All of the above
58. Which one of the following is not a department in the ministry of Human Resource Development?
- Department of Elementary Education and Literacy
 - Department of Secondary Education and Higher Education
 - Department of Technical Education
 - Department of women and child development
59. The Comptroller and Auditor General is appointed by the president. He can be removed
- by the president
 - on an address from both Houses of Parliament
 - on the recommendation of the president by the supreme court
 - by CJI
60. Which one of the following expenditure is not charged on the consolidated fund of India?
- Salary and allowances of the president of India
 - Salary and allowances of the vice president of India
 - Salary and allowances of the justice of the supreme court of India
 - Salary and allowances of the speaker of the Lok Sabha
61. Who has the right to seek advisory opinion of the supreme court of India, on any question of law?
- Prime Minister
 - President
 - Any of the high courts
 - All of the above
62. Recommendations to the President of India on the specific Union state fiscal relation are made by the
- Finance Minister
 - Reserve Bank of India
 - Planning Commission
 - Finance Commission
63. Who amongst the following is not entitled to take part in the activities of Lok Sabha?
- The Comptroller and Auditor General of India
 - The Attorney General of India
 - The solicitor General
 - The secretary to president of India
64. A bill presented in Parliament becomes an Act after
- It is passed by both the Houses
 - The president has given his Assent
 - The Prime minister has signed it
 - The Supreme Court has declared it to be within the competence of the Union Parliament
65. Which one of the following statements about the parliament of India is not correct?
- The constitution provides for a parliamentary form of Government
 - The foremost function of the parliament is to provide a cabinet
 - The membership of the cabinet is restricted to the lower house
 - The cabinet has to enjoy the confidence of the majority in the popular chamber
66. The 'Contingency Fund' of the state is operated by
- The Governor of the state
 - The Chief Minister of the state
 - The State Finance Minister
 - None of the above
67. Who of the following Presidents of India was associated with trade Union Movement?
- V.V. Giri
 - N. Sanjiva Reddy
 - K.R. Narayanan
 - Zakir Hussain
68. The office of the President does not characterize the combination of governmental systems of
- Parliamentary and Federal
 - Republican and Parliamentary
 - Presidential and Republican
 - Democratic and Republican
69. The system of Proportion of representation as an electoral mechanism ensures
- Representation of minorities
 - Rule of majority
 - Stability in government
 - Common political thinking
70. The President of India enjoys emergency powers of
- Two types
 - Three types
 - Four types
 - Five types
71. Who is the highest civil servant of the Union Government?
- Attorney General
 - Cabinet Secretary
 - Home Secretary
 - Principal Secretary of the P.M.
72. The speaker's vote in the Lok Sabha is called
- Casting vote
 - Sound vote
 - Direct vote
 - Indirect vote
73. The Parliamentary Committee which scrutinizes the report of the CAG of India is
- Estimates Committee
 - Select Committee
 - Public Accounts Committee
 - None of these
74. What is the period of appointment of the comptroller and Auditor General of India?
- 6 years
 - upto 65 years of age
 - 6 years or 65 years of age, whichever earlier
 - upto 64 years of age
75. In order to be recognised as an official opposition group

- in the parliament
- 1/3rd of the total strength
 - 1/4th of the total strength
 - 1/6th of the total strength
 - 1/10th of the total strength
76. Who among the following is the chairman of the National Integration council?
- The President
 - The Vice-president
 - The Prime Minister
 - The Chief Justice of India
77. Who advises the Government of India on legal matters?
- Attorney General
 - Chief justice of supreme court
 - Chairman, Law Commission
 - None of these
78. The Committee of parliament on official language comprises the members
- 20 from Lok Sabha, 10 from Rajya Sabha
 - 10 from Lok Sabha, 20 from Rajya Sabha
 - 10 from Lok Sabha, 10 from Rajya Sabha
 - 20 from Lok Sabha, 20 from Rajya Sabha
79. In case the President wishes to resign, to whom is he to address his resignation letter?
- Chief Justice of India
 - Secretary of Lok Sabha
 - Vice President
 - Prime Minister
80. Who among the following Indian Prime Ministers resigned before facing a vote of no-confidence in the Lok Sabha?
- Chandra Shekhar
 - Morarji Desai
 - Chaudhary Charan Singh
 - V.P. Singh
81. 'Zero Hour' in political Jargon refers to
- Suspended motion
 - Question hour
 - Adjourned time
 - Question-answer session
82. Which of the following types of authorities are attributed to the President of India?
- Real and Popular
 - Titular and de jure
 - Constitutional and Nominal
 - Both (b) and (c)
83. When the offices of both Speaker and Deputy Speaker falls vacant –
- The members of Lok Sabha immediately elect a Speaker.
 - The senior most willing member of Lok Sabha becomes the speaker.
 - The President appoints any member of Lok Sabha as speaker.
 - The Deputy Chairman of Rajya Sabha presides over till the next speaker is elected.
84. With Regard to Constitutional Amendment Bill –
- The President can reject the bill but cannot return the bill.
 - The President cannot reject the bill but can return the bill.
 - The President can neither reject the bill nor return the bill.
 - The President can either reject the bill or return the bill.
85. The Vice President can be removed from office before completion of his term in which of the following manner?
- She/he can be impeached in similar manner as President.
 - A Resolution of Rajya Sabha passed by special majority and agreed to by the Lok Sabha.
 - A Resolution of Rajya Sabha passed by simple majority and agreed to by the Lok Sabha.
 - A Resolution of Rajya Sabha passed by an absolute majority and agreed to by the Lok Sabha.
86. The office of the 'Whip' is mentioned in:
- Constitution of India.
 - Rules of the house.
 - In a separate Parliamentary Statute.
 - None
87. The office of the Leader of the opposition is mentioned in:
- Constitution of India
 - Rules of the house
 - A separate Parliamentary Statute
 - None of these
88. A minister who is not a member of either house (Note: A person can remain a minister for six months, without being a member of either house of parliament):
- Can participate in the proceedings of Lok Sabha only.
 - Can participate in the proceedings of Rajya Sabha only.
 - Can participate in the proceedings of either house of parliament.
 - Cannot participate till he becomes a Member of either house of parliament.
89. The first reading of the Bill in a House of Parliament refers to :
- The motion for leave to introduce a Bill in the House
 - The general discussion on the Bill as whole where only the principle underlying the Bill is discussed and not the details of the bill.
 - The general discussion on the Bill where the bill is discussed in details.
 - The stage when the Bill is referred either to select committee of the House or to the joint committee of the two houses.
90. Department of official languages is subordinate office of which ministry?
- Ministry of social justice and Empowerment

123. The President of India is elected by a proportional representation system through single transferable vote. This implies that
- each elected MP or MLA has an equal number of votes
 - MPs and MLAs of a State have the same number of votes
 - all MPs and MLAs have one vote each
 - MPs and MLAs of different States have different numbers of votes
124. With reference to the conduct of government business in the Parliament of India, the term ‘closure’ refers to
- suspension of debate at the termination of a day’s sitting of the Parliament
 - a rule of legislative procedure under which further debate on a motion can be halted
 - the termination of a Parliamentary session
 - refusal on the part of the Government to have the opposition look at important documents
125. While a proclamation of emergency is in operation the duration of the Lok Sabha can be extended for a period
- not exceeding three months
 - not exceeding nine-months
 - of one year at a time
 - of two years at a time
126. With regard to the powers of the Rajya Sabha, which one among the following statements is not correct?
- A money bill cannot be introduced in the Rajya Sabha
 - The Rajya Sabha has no power either to reject or amend a money bill
 - The Rajya Sabha cannot discuss the Annual Financial Statement
 - The Rajya Sabha has no power to vote on the Demands for Grants
127. In the Rajya Sabha, the states have been given seats
- in accordance with their population
 - equally
 - on the basis of population and economic position
 - on the basis of present economic status
128. The Speaker of the Lok Sabha may be removed from office by
- the majority party in the house adopting a no-confidence motion
 - a resolution passed by not less than half of the total membership of the house
 - a resolution passed by at least two-thirds of the total membership of the house
 - a resolution passed by a majority of all the members of the house
129. Which one among the following committees of the Parliament of India has no members of the Rajya Sabha?
- Public Accounts Committee
 - Estimates Committee
 - Public Undertakings Committee
 - Departmentally Related Standing Committee on Finance
130. Besides representation, the Parliament of India is also a deliberative body with diverse functions. Which one among the following is not a function of the Parliament of India?
- Ventilating the grievances of the people
 - Executing major policy decisions
 - Holding the government accountable for its actions and expenditure
 - Amending the Constitution
131. Which of the following statements is not correct?
- A Money Bill shall not be introduced in the Council of States
 - The Council of States has no power to reject or amend a Money Bill
 - the Council of Ministers is responsible to the House of the People and not to the Council of States
 - The House of the People has special powers with respect to the State List compared to the Council of States
132. Who among the following have the right to vote in the elections to both the Lok Sabha and the Rajya Sabha?
- Elected members of the Lower House of the Parliament
 - Elected members of the Upper House of the Parliament
 - Elected members of the Upper House of the State Legislature
 - Elected members of the Lower House of the State Legislature
133. Which one of the following statements about the duties of Prime Minister is correct?
- Is free to choose his minister only from among members of either House of the Parliament
 - Can choose his cabinet after consulting the President of India.
 - Has full discretion in the choice of persons who are to serve as ministers in his cabinet
 - Has only limited power in the choice of his cabinet colleagues because of the discretionary powers vested the President of India
134. If the Prime Minister of India belonged to the Upper House of Parliament:
- he will not be able to vote in his favour in the event of a no-confidence motion
 - he will not be able to speak on the budget in the Lower House
 - he can make statements only in the Upper House
 - he was to become a member of the Lower House within six months after being sworn in
135. Which one of the following statements about a Money Bill is not correct?
- A Money Bill can be tabled in either House of Parliament
 - The Speaker of Lok Sabha is the final authority to

- decide whether a Bill is a Money Bill or not
- The Rajya Sabha must return a Money Bill passed by the Lok Sabha and send it for consideration within 14 days
 - The President cannot return a Money Bill to the Lok Sabha for reconsideration
136. The Parliament can make any law for whole or any part of India for implementing international treaties
- with the consent of all the States
 - with the consent of the majority of States
 - with the consent of the States concerned
 - without the consent of any State
137. The term of the Lok Sabha:
- cannot be extended under any circumstances
 - can be extended by six months at a time
 - can be extended by one year at a time during the proclamation of emergency
 - can be extended for two years at a time during the proclamation of emergency
138. Under which Article of the Indian Constitution did the President give his assent to the ordinance on electoral reforms when it was sent back to him by the Union Cabinet without making any changes (in the year 2002) ?
- Article 121
 - Article 122
 - Article 123
 - Article 124
139. Which one of the following Articles of the Indian Constitution provides that ‘It shall be the duty of the Union to protect every State against external aggression and internal disturbance’?
- Article 215
 - Article 275
 - Article 325
 - Article 355
140. Which one of the following Bills must be passed by each House of the Indian Parliamentary separately by special majority?
- Ordinary Bill
 - Money Bill
 - Finance Bill
 - Constitution Amendment Bill
141. With reference to Indian Parliament, which one of the following is not correct?
- The Appropriation Bill must be passed by both the Houses of Parliament before it can be enacted into law
 - No money shall be withdrawn from the Consolidated Fund of India except under the appropriation made by the Appropriation Act
 - Finance Bill is required for proposing new taxes but no additional Bill/Act is required for making changes in the rates of taxes which are already under operation.
 - No Money Bill can be introduced except on the recommendation of the President
142. Which of the following special powers have been conferred on the Rajya Sabha by the Constitution of India?
- To change the existing territory of a State and to change the name of a State
 - To pass a resolution empowering the Parliament to make laws in the State List and to create one or more All India Services
 - To amend the election procedure of the President and to determine the pension of the President after his/her retirement
 - To determine the functions of the Election Commission and to determine the number of Election Commissioners
143. The Parliament can make any law for the whole or any part India for implementing international treaties:
- with the consent of all the State
 - with the consent of the majority of States
 - with the consent of the States concerned
 - without the consent of any State
144. In what way does the Indian Parliament exercise control over the administration?
- Through Parliamentary Committees
 - Through Consultative Committees in various ministries
 - By making the administrators send periodic reports
 - By compelling the executive to issue writs
145. Which one of the following statements is correct?
- Only the Rajya Sabha and not the Lok Sabha can have nominated members
 - There is a constitutional provision for nominating two members belonging to the Anglo-Indian community to the Rajya Sabha
 - There is no constitutional bar for a nominated member to be appointed as a Union minister
 - A nominated member can vote both in the Presidential and Vice Presidential elections
146. Which one of the following statements is not correct?
- In the Lok Sabha, a no-confidence motion has to set out the grounds on which it is based
 - In the case of a no-confidence motion in Lok Sabha, no conditions of admissibility have been laid down in the Rules
 - A motion of no-confidence once admitted, has to be taken up within ten days of the leave being granted
 - Rajya Sabha is not empowered to entertain a motion of no-confidence
147. The resolution for removing the Vice-President of India can be moved in the:
- Lok Sabha alone
 - Either House of Parliament
 - Joint Sitting of Parliament
 - Rajya Sabha alone
148. The authorization for the withdrawal of funds from the Consolidated Fund of India must come from
- The President of India
 - The Parliament of India
 - The Prime Minister of India
 - The Union Finance Minister

149. In the Parliament of India, the purpose of an adjournment motion is
- to allow a discussion on a definite matter of urgent public importance
 - to let opposition members collect information from the ministers
 - to allow a reduction of specific amount in demand for grant
 - to postpone the proceedings to check the inappropriate or violent behaviour on the part of some members
150. The Prime Minister of India, at the time of his/her appointment
- need not necessarily be a member of one of the Houses of the Parliament but must become a member of one of the Houses within six months
 - need not necessarily be a member of one of the Houses of the Parliament but must become a member of the Lok Sabha within six months
 - must be a member of one of the Houses of the Parliament
 - must be a member of the Lok Sabha
151. What will follow if a Money Bill is substantially amended by the Rajya Sabha?
- The Lok Sabha may still proceed with the Bill, accepting or not accepting the recommendations of the Rajya Sabha
 - The Lok Sabha cannot consider the bill further
 - The Lok Sabha may send the Bill to the Rajya Sabha for reconsideration
 - The President may call a joint sitting for passing the Bill
152. Certain Bills can not be introduced or proceeded with unless the recommendation of the President is received. However, no recommendation is required in some other cases. In which one of the following cases such recommendation is not required? [CSAT-2014-I]
- For introduction of Bills and for moving amendments relating to financial matters
 - For introduction of a Bill relating to formation of new states or of alteration of areas of existing states
 - For moving of an amendment making provision for the reduction or abolition of any tax
 - For introduction of a Bill or moving of an amendment affecting taxation in which states are interested
153. After a Bill has been passed by the Houses of the Parliament, it is presented to the President who may either give assent to the Bill or withhold his assent. The President may [CSAT-2014-I]
- assent within six months
 - assent or reject the Bill as soon as possible
 - return the Bill as soon as possible after the Bill is presented to him with a message requesting the House to reconsider the Bill
 - withhold his assent even if the Bill is passed again by the Houses
154. The Annual Financial Statement of the Government of India in respect of each financial year shall be presented to the House on such day as the [CSAT-2014-I]
- Speaker may direct
 - President of India may direct
 - Parliament may decide
 - Finance Minister may decide
155. When a bill is referred to a joint sitting of both the Houses of the Parliament, it has to be passed by [CSAT 2015-I]
- a simple majority of members present and voting
 - three-fourths majority of members present and voting
 - two-thirds majority of the Houses
 - absolute majority of the Houses

HINTS AND EXPLANATIONS

EXERCISE

- | | | | | |
|---------|---|---------|---------|---------|
| 1. (b) | 2. (b) | 3. (d) | 4. (c) | |
| 5. (a) | 6. (b) | 7. (c) | 8. (c) | 9. (d) |
| 10. (b) | 11. (c) | 12. (a) | 13. (d) | 14. (b) |
| 15. (c) | 16. (a) | 17. (b) | 18. (d) | |
| 19. (b) | 20. (b) | 21. (a) | 22. (b) | 23. (b) |
| 24. (c) | 25. (d) | 26. (a) | 27. (b) | 28. (d) |
| 29. (b) | 30. (b) | 31. (a) | 32. (d) | |
| 33. (d) | 34. (c) | 35. (b) | 36. (c) | 37. (d) |
| 38. (c) | 39. (a) | 40. (d) | 41. (a) | 42. (c) |
| 43. (d) | | | | |
| 44. (d) | Money bill can be introduced by the prior permission of President only. The proposal is money bill or not it is decided by Lok Sabha speaker. | | | |
| 45. (c) | President can dissolve the Lok Sabha on the advice of Prime Minister. The time duration of Lok Sabha is 5 years. | | | |
| 46. (b) | Under Article 109, special procedure in respect of Money Bill has been given, a Money Bill shall not be introduced in the council of state, it can be introduced in only Lok Sabha. After a money bill is passed by Lok Sabha and sent to Rajya Sabha, it should be returned within 7 days. | | | |
| 47. (c) | In the absence of both the President of India and the vice president, the chief justice of India (or in his absence, the senior-most judge of the supreme court available) shall act as the president of India. | | | |
| 48. (d) | | | | |
| 49. (a) | According to the Article 75 of Indian Constitution the Council of Ministers of the Union shall be collectively responsible to the House of the People. | | | |
| 50. (c) | The Union Executive of India, as in parliamentary type of government, consist of president and the council of ministers. | | | |
| 51. (a) | 52. (a) | 53. (d) | 54. (d) | |
| 55. (c) | 56. (c) | 57. (a) | | |
| 58. (d) | Department of women and child development is not a department under Ministry of Human Resource Development. Human Resources Development (HRD) as a theory is a framework for the expansion of human capital within an organization through the development of both the organization and the individual to achieve performance improvement. | | | |
| 59. (b) | The comptroller and Auditor General can be removed on an address from both Houses of Parliament. The Comptroller and Auditor General (CAG) of India is an authority, established by the Constitution of India under Chapter V, who audits all receipts and expenditure of the Government of India and the state governments, including those bodies and authorities substantially financed by the government. The CAG is also the external auditor of government-owned companies. | | | |
| 60. (d) | Salary and allowances of the speakers of the Lok Sabha is not charged on the Consolidated fund of India. Consolidated fund or the consolidated revenue fund is the term used for the main bank account of the government in many of the countries in the Commonwealth of Nations. All tax revenue is paid into the fund unless Parliament has specifically provided otherwise by law. Any money received by the government which is not taxation, and is not to be retained by the receiving department (for example, fines), is classed as a Consolidated Fund extra receipt (CFER). These are to be paid into the Consolidated Fund as soon as they are received. | | | |
| 61. (b) | | | | |
| 62. (d) | 63. (d) | 64. (b) | 65. (c) | 66. (a) |
| 67. (a) | V.V. Giri, the president of India was associated with trade Union movement. Varahagiri Venkata Giri, commonly known as V. V. Giri, was the fourth President of the Republic of India from 24 August 1969 to 23 August 1974. He served as Acting President of India from 3 May 1969 to 20 July 1969, before getting elected. | | | |
| 68. (c) | | | | |
| 69. (a) | 70. (b) | | | |
| 71. (b) | Cabinet Secretary is the highest civil servant of the Union Government. The Cabinet Secretary is the senior-most civil servant in the Government of India. The Cabinet Secretary is the ex-officio head of the Civil Services Board. The Cabinet Secretary is under the direct charge of the Prime Minister. Though there is no fixed tenure, the average tenure of the Cabinet Secretary has been less than 3 years. His or her tenure however, can be extended. | | | |
| 72. (a) | The speaker's vote in the Lok Sabha is called casting vote. A casting vote is a vote given to the presiding officer of a council or legislative body to resolve a deadlock and which can be exercised only when such a deadlock exists. | | | |
| 73. (c) | The parliamentary Committee which scrutinizes the report of the CAG is public accounts committee. The Comptroller and Auditor General (CAG) is an authority, established by the Constitution of India under Chapter V, which audits all receipts and expenditure of the Government and the state governments, including those bodies and authorities substantially financed by the government. | | | |
| 74. (c) | 75. (d) | | | |
| 76. (c) | The prime minister is the chairman of the National Integration council. The National Integration Council originated in a conference convened by Prime Minister Jawaharlal Nehru in September-October 1961. The purpose was to find ways to counter problems that were dividing the country including attachment to specific communities, castes, regions and languages. | | | |
| 77. (a) | 78. (a) | 79. (c) | | |
| 80. (c) | Chaudhary Charan Singh was the Prime Minister resigned before facing a vote of no-confidence in the Lok Sabha. Chaudhuri Charan Singh was the fifth Prime Minister, serving from 28 July 1979 until 14 January 1980. | | | |

81. (d) ‘Zero Hour’ in Political jargon refers to question answer session. Zero Hour in Parliament starts at 12 noon during which members raise matters of importance, especially those that cannot be delayed.
82. (d) 83. (c) 84. (c)
85. (d) 86. (d) 87. (c) 88. (c)
89. (a) The first reading of the bill in a house of parliament refers to motion for leave to introduce the bill in the House. If a motion for leave to introduce a Bill is opposed, the Speaker, after permitting, if he thinks fit, brief statements from the member who opposes the motion and the member who moved the motion, may, without further debate, put the question: provided that where a motion is opposed on the ground that the Bill initiates legislation outside the legislative competence of the House, the Speaker may permit a full discussion thereon. Provided further that the Speaker shall forthwith put to vote the motion for leave to introduce a Finance Bill or an Appropriation Bill.
90. (b) Department of official languages is subordinate office of the Ministry of Home affairs. It deals with the implementation of the provisions of the Constitution relating to official languages and the provisions of the Official Languages Act, 1963.
91. (d) State legislature assemblies, both houses of the parliament form part of the electoral college for the election of the president. An electoral college is a set of electors who are selected to elect a candidate to a particular office. Often these represent different organizations or entities, with each organization or entity represented by a particular number of electors or with votes weighted in a particular way.
92. (d) Decorum = Parliamentary etiquette
Crossing the floor = Changing the party
Interpolation = Seeking clarification through ruling
Yielding the floor = Respecting speaker’s order
93. (d) The Constitutional amendment bill must be passed by each house of the Indian Parliament separately by special majority.
94. (b) Department of border management is a department of ministry of Home affairs of the union minister. Department of Border Management is dealing with management of borders, including coastal borders.
95. (a) When a money bill returns to the Loksabha with amendments made by the Rajyasabha, it is open to Loksabha to accept or to reject any or all of the recommendations. When the Loksabha chooses to accept or decline the money bill with or without the recommendation, the money bill is deemed passed in both houses.
96. (b) The largest Committee is Estimates, given its 30 members
97. (b) Article 110 of Indian constitution defines a Money Bill. The speakers decision as to whether a bill is a Money Bill is final.
98. (d) While proclamation of Emergency is in operation be extended by parliament by law for a period not exceeding one year at a time and not extending in any case beyond a period of six months after the proclamation has ceased to operate [Article 83 (2)]
99. (d) The Rajya Sabha is a permanent house, not subject to dissolution, one third of its members retiring after every two years. Thus every member enjoys a 6-year tenure.
100. (c) The Union Executive of India, as in parliamentary type of government, consist of president and the council of ministers.
101. (d) The presiding officer of the Lok Sabha is the Speaker who is elected by the member from amongst themselves.
102. (c) Cabinet Secretariat is under the charge of the Prime Minister of India.
103. (c) If any question arises whether a Bill is a money bill or not, the decision of the Speaker of the Lok Sabha shall be final under the article 110 of the constitution of India.
104. (c) The speaker of the Lok sabha can resign from his office by addressing his resignation to the deputy speaker of the Lok Sabha.
105. (c) Either house of the parliament can initiate impeachment proceedings against the president of India.
106. (d)
107. (a) Joint session is presided over by the speaker of Lok Sabha or in his absence by the Deputy Speaker.
108. (d)
109. (b) The Concurrent List or List-III is a list of 52 items (previously 47 items) given in Part XI of the Constitution of India, concerned with relations between the Union and States. This part is divided between legislative and administrative powers.
110. (a) Members of both houses of parliament.
111. (d)
112. (a) Demands for Grants Committees are Departmentally Related Standing Committees. After the General Discussion on the Budget is over, the House is adjourned for a fixed period. During this period, the Demands for Grants of the Ministries/ Departments are considered by the Committees. It is not a parliamentary committee.
113. (c) In India, “the Emergency” refers to a 21-month period in 1975-77 when Prime Minister Indira Gandhi unilaterally had a state of emergency declared across the country. Fakhruddin Ali Ahmed was the President at that time.
114. (b) Gulzarilal Nanda became the Prime Minister of India for two short periods following the deaths of Jawaharlal Nehru in 1964 and Lal Bahadur Shastri in 1966.

Committee on	No. of members
Public Accounts	22
Estimates	30
Public Undertakings	22
Petitions	LS(15), RS(10)

115. (b) According to article 82 of Indian Constitution, the parliament of India shall readjust the allocation of seats in the Lok Sabha to the states and division of each state into territorial constituencies.
116. (b) According to Article 53(b) of the Indian Constitution the supreme command of the Defence Forces of the Union shall be vested in the President and the exercise thereof shall be regulated by law.
117. (c) The quorum to constitute a joint sitting shall be one-tenth of the total number of members of the Houses.
118. (b) P V Narasimha Rao could not vote for himself during vote of confidence.
119. (d) The correct sequence is, Discussion on Budget, Appropriation Bill, Finance Bill, Vote on Account.
120. (c) Protem Speaker performs the duties of the office of the Speaker from the commencement of the sitting of the new Lok Sabha till the election of the Speaker. Protem speaker is mainly an operating and temporary speaker.
121. (c) He/she cannot take part in the voting when a vote of no confidence is under consideration.
122. (a) Under Article 61, the President of India can be removed from the office by a process of impeachment for the violation of the Constitution. The impeachment is to be initiated by either House of Parliament.
123. (c) Irrespective of the fact that a number of seats may have to be filled, this system postulates one vote for each voter with the reservation that this single vote is transferred to other candidates. This is the reason why this system is known as “single transferable vote system.”
124. (a) “Closure” is one of the means by which a debate may be brought to a close by a majority decision of the House, even though all members wishing to speak have not done so.
125. (c) While a proclamation of emergency is in operation, this period may be extended by Parliament by law for a period not exceeding one year at a time. Under Article 352 the president can declare a national emergency when the security of India or part of it is threatened by war or external aggression or armed rebellion.
126. (c) A Money Bill cannot be introduced in Rajya Sabha. Rajya Sabha has no power either to reject or amend a Money Bill. It can only make recommendations on the Money Bill. Whether a particular Bill is a Money Bill or not is to be decided by the Speaker of Lok Sabha. Rajya Sabha may discuss the Annual Financial Statement. It has no power to vote on the Demands for Grants.
127. (c) In the Rajya Sabha the states have been given seats on the basis of population and economic position.
128. (d) The Speaker of Lok Sabha may be removed from his office by a resolution of the House of the People passed by a majority of all the then members of the House. No resolution for the purpose of removal of the Speaker or the Dy. Speaker shall be moved unless at least fourteen days notice has been given of the intention to move the resolution.
129. (b) The Estimates Committee is a Parliamentary Committee consisting of 30 Members, elected every year by the Lok Sabha from amongst its Members. The Chairman of the Committee is appointed by the Speaker from amongst its members. The term of office of the Committee is one year.
130. (b) Our Parliamentary system blends the legislative and the executive organs of the State in as much as the executive power is wielded by a group of Members of the Legislature who command majority in the Lok Sabha.
131. (d) The Constitution empowers Parliament of India to make laws on the matters reserved for States (States List). However, this can only be done if Rajya Sabha first passes a resolution by two-thirds supermajority granting such a power to the Union Parliament. The union government cannot make a law on a matter reserved for states without an authorisation from Rajya Sabha. So the House of People does not have special powers with respect to the state list.
132. (d) As Indian follows Universal Adult Suffrage elected members of the Lower House of the State Legislature *i. e.*, LAs have the right to vote in the elections to both the Lok Sabha and Rajya Sabha. The State Legislature besides making laws also has one electoral power in electing the President of India. Elected members of the Legislative Assembly along with the elected members of Parliament are involved in this process.
133. (c) PM has complete discretion to choose his ministers in the Cabinet not necessarily from the two Houses of Parliament but can also choose any other person. That person should become member of either house within 6 months from the date he enters the office.
134. (a) Because no-confidence motion can be moved only in Lok Sabha (not in RS) by the opposition.
135. (a) A Money bill can be introduced only in LS (not in RS) that too on the recommendation of the President.
136. (d) Parliament has exclusive power to make law with respect to any of the matters enumerated with the Union List. According to entry no 14 in the Union List it reads- ‘entering into treaties and agreements with foreign countries and implementing of treaties, agreement and convention with foreign countries’.
137. (c) The term of the LS can be extended by not more than one year at a time during the proclamation of national emergency under Article 352.
138. (c) President can issue Ordinance under Article 123.
139. (d) According Article 355, it shall be the duty of the Union to protect every State against external aggression and internal disturbance and to ensure that the government of every State is carried on in accordance with the provisions of this Constitution.
140. (d) According to Article 368 an amendment of this Constitution may be initiated only by the introduction of a Bill for the purpose of either House

- of Parliament, and when the Bill is passed in each House by a majority of the total membership of that House present and voting, it shall be presented to the President who shall give his assent to the Bill and thereupon the Constitution shall stand amended in accordance with the terms of the Bill.
141. (a) Appropriation Bill is a money bill. In case of money bill, RS has only recommendatory power and need not to be passed by RS.
142. (b) The Constitution of India empowering the Parliament to make laws in the State List and to create one or more All India Services.
143. (d) It is the sole prerogative of Parliament under Article 253 of the Constitution.
144. (a) Parliamentary Committees are formed to dispose off the large volume of work in time but with detailed scrutiny. Their appointment, terms of office as well as functions etc are regulated by provisions under Article 118(1). These are of 2 kinds: Standing Committees and Ad-hoc Committees.
145. (c) In Rajya Sabha, 12 members are nominated by the President from the persons who have special knowledge in art, science, literature and social service. In Lok Sabha, 2 members are nominated by the President from the Anglo-Indian community (Art 331). A nominated member can vote only in the Vice-Presidential elections.
146. (a) In case of a No-confidence motion, there is no need to set out the grounds on which it is based. No-Confidence motion is introduced only in the Lok Sabha by the opposition and needs a support of not less than 50 members of LS for its introduction. Rule 198 of the Lok Sabha specifies the procedure for a motion of no-confidence. Any member may give a written notice; the speaker shall read the motion of no-confidence in the House and ask all those persons to rise who favours that the motion be taken up. If there are 50 MPs in favour, the speaker allots a date for discussing the motion.
147. (d) Article 67(b) in the Constitution of India states, a Vice President may be removed from his office by a resolution of the council of States passed by a majority of all the then members of the council and agreed to by the House of the People; but no resolution for the purpose of this clause shall be moved unless at least fourteen days notice has been given of the intention to move the resolution.
148. (b) Parliament shall have power to authorise by law the withdrawal of moneys from the Consolidated Fund of India for the purposes for which the said grants are made.
149. (a) Adjournment motion :
 (i) It is introduced in the Parliament to draw attention of the house to a definite matter of urgent public importance and needed to support of 50 members to be admitted.
 (ii) It is regarded as an extraordinary device, because it interrupts the normal business of the house.
 (iii) It involves an element of censure against the government and Rajya Sabha is not permitted to make use this device.
 (iv) The discussion an adjournment motion should last for not less than two hours and thirty minutes.
150. (a) Article 75(I) of the Indian Constitution provides that the Prime Minister shall be appointed by the President. The Constitution permits a person to be appointed PM without his\her being a member of either House of the Parliament at the of appointment. Before expiry of this time, he has to become a member of either the Rajya Sabha or the Lok Sabha.
151. (a) When a money bill returns to the Loksabha with amendments made by the Rajyasabha, it is open to Loksabha to accept or to reject any or all of the recommendations. When the Loksabha chooses to accept or decline the money bill with or without the recommendation, the money bill is deemed passed in both houses.
152. (c) The recommendation of the president is required for introduction of money bills or for moving amendments to acts relating to financial matters, except those making provision for the reduction or abolition of any tax. So, for option (c) president's recommendation is not required.
153. (c) Article 111 of the Indian constitution stipulates that the President shall give assent to a bill passed by both houses of the parliament or return the bill as soon as possible for reconsideration with his recommendation.
154. (b) According to article 112, the President shall in respect of every financial year cause to be laid before both the Houses of Parliament a statement of the estimated receipts and expenditure of the Government of India for that year, in this Part referred to as the annual financial statement.
155. (a) In India, if a bill has been rejected by any house of the parliament and if more than six months have elapsed, the President may summon a joint session for purpose of passing the bill. The bill is passed by a simple majority of a joint sitting.

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UNION GOVERNMENT – Statement Based MCQ's with Explanations



Statement Based MCQ

1. _____ take/takes part in the election of the President of India?

 1. All Members of Parliament
 2. Members of State Legislative Assemblies
 3. Elected members of State Legislative assemblies
 4. Elected members of State Legislative Councils.

Which of the above is/are correct?

 - (a) 1 and 3
 - (b) 4 only
 - (c) 1 only
 - (d) 3 only

2. _____ can be declared by the President on his own?

 1. Emergency due to armed rebellion
 2. Financial Emergency
 3. President's Rule in a State

Which of the above is/are correct?

 - (a) 1 only
 - (b) 3 only
 - (c) All of the Above
 - (d) None of the Above

3. President appoints as Prime Minister:

 1. the leader of the majority party in the Lok Sabha
 2. anyone he thinks fit
 3. the person who can win the confidence of the majority in Lok Sabha
 4. Leader of the party with a majority in either Lok Sabha or Rajya Sabha

Which of the following statements is/are correct?

 - (a) 1 only
 - (b) 1 or 3
 - (c) 3 or 4
 - (d) 1, 3 or 4

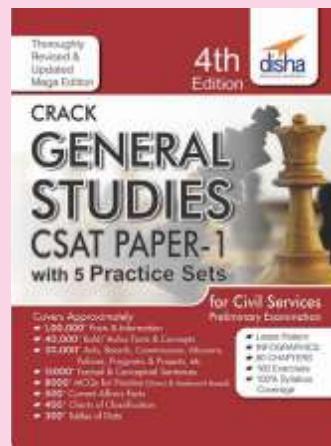
4. Consider the following statements about the office of Attorney-General of India?

 1. He is a member of the Cabinet.
 2. He can address either House of Parliament and vote.
 3. He must have qualification of a judge of the Supreme Court.
 4. Salary of Attorney General is fixed by Parliament.

Which of the following statements is/are correct?

 - (a) 2 and 4
 - (b) 1, 2 and 4
 - (c) 3 only
 - (d) 3 and 4

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5. Which statements about Financial Bill is CORRECT?

 1. It is same as a money bill
 2. It can be introduced only in the Lok Sabha
 3. It can be amended by the Rajya Sabha.
 4. It can only be introduced with the agreement of the President

Which of the above is/are correct?

 - (a) 1 only
 - (b) 2 and 4
 - (c) 2, 3 and 4
 - (d) 3 and 4

6. Both Houses of Parliament enjoy equal power in all spheres except:

 1. financial matters
 2. responsibility of the Council of Ministers
 3. amendment procedure
 4. presidential election

Which of the above is/are correct?

 - (a) 3 and 4
 - (b) 2, 3 and 4
 - (c) 1, 2 and 3
 - (d) 1 and 2

7. Which factor can restrict the power of Parliament in India?

 1. A written Constitution prescribing the scope of operation
 2. Supreme Court can strike down unconstitutional laws passed by Parliament
 3. Parliament is limited by the Fundamental Rights provided by the Constitution

Which of the following statements is/are correct?

 - (a) 1, 2 and 3
 - (b) 1 and 3
 - (c) 2 only
 - (d) None, as Parliament is sovereign

8. Which of the following are the principles on the basis of which the parliamentary system of government in India operates ?

 1. Nominal executive head
 2. Vice-President as the chairman of the upper house
 3. Real executive authority with the council of ministers
 4. Executive responsibility to the lower house

Which of the following statements is/are correct?

 - (a) 1, 2 and 4
 - (b) 1, 2 and 4
 - (c) 1, 3 and 4
 - (d) 2, 3 and 4

9. Consider the following statements :
1. The Chairman of the Committee on Public Accounts is appointed by the Speaker of the Lok Sabha.
 2. The Committee on Public Accounts comprises Members of Lok Sabha, Members of Rajya Sabha and a few eminent persons of industry and trade.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only
 - (c) Both 1 and 2 (d) Neither 1 nor 2
10. With reference to Union Government, consider the following statements :
1. The Ministries/Departments of the Government of India are created by the Prime Minister on the advice of the Cabinet Secretary.
 2. Each of the Ministries is assigned to a Minister by the President of India on the advice of the Prime Minister.
- Which of the statements given above is/are correct ?
- (a) 1 only (b) 2 only
 - (c) Both 1 and 2 (d) Neither 1 nor 2
11. The correct statements about calling attention notice are :
1. It is a device of calling the attention of a minister to a matter of urgent public importance.
 2. Its main purpose is to seek an authoritative statement from the minister.
 3. It does not involve any censure against government.
 4. It is an Indian innovation in the parliamentary procedure since 1952.
 5. It is not mentioned in the Rules of Business and Procedure.
- Which of the following statements is/are correct?
- (a) 1, 2, 3 and 4 (b) 4 and 5
 - (c) 1, 2, 3 and 5 (d) 1, 2 and 3
12. Which of the following statements are true of Adjournment Motion?
1. It is an extraordinary procedure which sets aside the normal business of the House.
 2. Its main object is to draw the attention of the House to a recent matter of urgent public importance.
 3. The Rajya Sabha can make use of this procedure.
 4. It must be supported by not less than 50 members for introduction.
 5. It involves an element of censure against government.
- Which of the following statements is/are correct?
- (a) 1, 2, 4 and 5 (b) 2, 3 and 5
 - (c) 2, 3 and 4 (d) 1, 2 and 4
13. In parliamentary countries, like India, the legislative control over administration is considerably reduced and restricted in effectiveness due to which of the following reasons?
1. The expansion in the volume and variety of administrative work.
 2. Frequent use of Guillotine.
 3. The large size of the legislature
 4. The members of the legislature are laymen.
 5. The financial committees do post mortem work.
- Which of the following statements is/are correct?
- (a) 1, 2 and 5 (b) 2, 3 and 4
 - (c) 2, 3, 4 and 5 (d) 1, 2, 3, 4 and 5
14. Which of the following documents are presented to the legislature along with the budget?
1. An explanatory memorandum on the budget
 2. A summary of demands for grants
 3. An Appropriation Bill
 4. A Finance Bill
 5. The economic survey
- Which of the above is/are correct?
- (a) 1,3 and 5 (b) 1,2 and 3
 - (c) 2,3 and 5 (d) 1,2, 3 and 4
15. Which of the following statements are incorrect?
1. Appropriation Bill cannot be amended while the Finance Bill can be amended.
 2. Finance Bill cannot be amended while Appropriation Bill can be amended.
 3. Same procedure governs both the Appropriation Bill and the Finance Bill.
 4. Appropriation Bill and the Finance Bill are governed by different procedures.
 5. Appropriation Bill cannot be rejected by the Rajya Sabha while Finance Bill can be rejected by it.
- Which of the following statements is/are correct?
- (a) 2 and 4 (b) 2, 4 and 5
 - (c) 1 and 3 (d) 1, 3 and 5
16. Which of the following are not correct about CAG of India?
1. He is appointed by the President for a period of five years.
 2. His salary and conditions of service are determined by President.
 3. He shall vacate office on attaining the age of 60 years.
 4. He can be removed by the President on his own.
 5. He is responsible for maintaining the accounts of Central and state governments.
- Which of the following statements is/are correct?
- (a) 1,4 and 5 (b) 2,3 and 4
 - (c) 1,2,3,4 and 5 (d) 3,4 and 5
17. Which of the following are the functions of the Public Accounts Committee of Parliament?
1. To examine, in the light of CAG's report, the accounts showing the appropriation of sums granted by the Parliament.
 2. To examine, in the light of CAG's report, the statement of accounts of state corporations, trading and manufacturing projects except of those as are allotted to the committee on public undertakings.
 3. To examine the statement of accounts of autonomous and semi-autonomous bodies, the audit of which is conducted by the CAG.
 4. To examine if any money has been spent on any service during a financial year in excess of the amount granted by house of people for that purpose.
- Which of the following statements is/are correct?
- (a) 1, 2 and 4 (b) 1, 2, 3 and 4
 - (c) 1, 2 and 3 (d) 1, 3 and 4
18. The Indian President's veto power is a combination of:
1. Pocket veto 2. Absolute veto
 3. Suspensive veto 4. Qualified veto

- Prime Minister if he/she is not a member of either Lok Sabha or Rajya Sabha.

 - The candidate for the office of Prime Minister must have the support of the majority members of both Lok Sabha and Rajya Sabha.

Which of the statements given above is/are correct?

 - 1 only
 - 2 only
 - Both 1 and 2
 - Neither 1 nor 2

28. Which among the following statements with respect to the Comptroller and Auditor General of India is/are correct?

 - The procedure and grounds for his removal from the office are the same as of a Judge of Supreme Court.
 - He prescribes the form in which accounts of the Union and the States are to be kept.

Select the correct answer using the code given below

 - 1 only
 - 2 only
 - Both 1 and 2
 - Neither 1 nor 2

29. Which of the following statements about a parliamentary committee in India are correct?

 - It is appointed or elected by the house or appointed by the speaker/chairman.
 - It works under the direction of the speaker/chairman of the house.
 - It presents its report to the president.

Select the correct answer using the codes given below:

 - 1 and 2 only
 - 2 and 3 only
 - 1 and 3 only
 - 1, 2 and 3

30. Which of the following features of the Indian Government system are the essential features of the parliamentary Government system?

 - Presence of nominal and real executives
 - Membership of the ministers in the legislature
 - Separation of powers between the Union and State government
 - Independent judiciary system

Select the correct answer using the codes given below:

 - 1 and 2 only
 - 1, 2 and 3 only
 - 2 and 3 only
 - 1, 2, 3 and 4

31. Which of the following committee(s) is/are not exclusively the committee of the lower House of the Parliament of India?

 - Estimate committee
 - Committee on public undertaking
 - Committee on the welfare of Scheduled Castes and STs
 - Committee on Empowerment of women

Select the correct answer using the codes given below:

 - 1 and 2 only
 - 2, 3 and 4 only
 - 1 only
 - 2 and 4

32. Though the Rajya Sabha and Lok Sabha are constituent part of Parliament, on some subject they have unequal powers which of the following matters depict the difference of powers between these two houses?

 - No confidence motion
 - Power to vote on Demand for Grants
 - Impeachment of judges of the High Court
 - Passing of laws in the national interest on the subject enumerated in state list
 - Creation of all India services.

Select the correct answer by using the codes given below:

 - 1, 3 and 4 only
 - 2, 3 and 5 only
 - 1, 2, 4 and 5 only
 - 1, 2 and 5 only

33. Which among the following have the right to vote in the elections to both the Lok Sabha and the Rajya Sabha?

 - Elected members of the Lower House of the Parliament
 - Elected members of the Upper House of the Parliament
 - Elected members of the Upper House of the State Legislature.
 - Elected members of the Lower House of the State Legislature.
 - 1 and 2 only
 - 1, 2 and 3 only
 - 3 and 4 only
 - 4 only

34. Consider the following statements:

 - The chairman of the committee on public accounts is appointed by the speakers of the Lok Sabha
 - The committee on public Accounts comprises members of Lok Sabha, members of Rajya Sabha and a few eminent persons of industry and trade

Which of the statements given above is/are correct?

 - 1 only
 - 2 only
 - Both 1 and 2
 - Neither 1 nor 2

35. Consider the following statements regarding 'No confidence motion'

 - Only a motion expressing want of confidence in the council of ministers as a whole is admitted and one expressing lack of confidence in an individual minister is out of order
 - A no confidence motion needs to set out grounds on which it is based.
 - Any no confidence motion once moved can't be withdrawn
 - Rajya Sabha is not empowered to entertain a motion of no confidence

Which of the following given above are not correct?

 - 1 and 2 only
 - 1, 2, and 3 only
 - 2 and 3 only
 - 1, 2, 3 and 4

36. When the House of people clearly and conclusively determines that the government does not command its support, the government has to resign. By which of the ways parliamentary confidence in the government may be expressed by the House of People?

 - Defeating the government on a major issue of policy.
 - Passing an adjournment motion
 - Defeating the government on finance issues
 - Passing a motion of no confidence in the council of ministers.
 - 1 and 3 only
 - 2, 3 and 4 only
 - 2 and 3 only
 - 1, 2, 3 and 4

37. With reference to Union Government consider the following statements:

- Select the correct answer using the codes given below.
- (a) 1 and 2 only (b) 3 only
 (c) 2 and 3 only (d) 1, 2 and 3
64. Consider the following statements:
1. The Council of Ministers in the Centre shall be collectively responsible to the Parliament.
 2. The Union Ministers shall hold the office during the pleasure of the President of India.
 3. The Prime Minister shall communicate to the President about the proposals for legislation.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 and 3 only
 (c) 1 and 3 only (d) 1, 2 and 3
65. Consider the following statements:
1. The Chairman and the Deputy Chairman of the Rajya Sabha are not the members of that House.
 2. While the nominated members of the two Houses of the Parliament have no voting right in the presidential election, they have the right to vote in the election of the Vice President.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only
 (c) Both 1 and 2 (d) Neither 1 nor 2
66. Consider the following statements :
1. The President shall make rules for the more convenient transaction of the business of the Government of India, and for the allocation among Ministers of the said business.
 2. All executive actions of the Government of India shall be expressed to be taken in the name of the Prime Minister.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only
 (c) Both 1 and 2 (d) Neither 1 nor 2
67. Consider the following statements :
 A Constitutional Government is one which
1. places effective restrictions on individual liberty in the interest of State Authority
 2. places effective restrictions on the Authority of the State in the interest of individual liberty
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only
 (c) Both 1 and 2 (d) Neither 1 nor 2
68. Which of the following is/are the function/functions of the Cabinet Secretariat?
1. Preparation of agenda for Cabinet Meetings
 2. Secretarial assistance to Cabinet Committees
 3. Allocation of financial resources to the Ministries
- Select the correct answer using the code given below.
- (a) 1 only (b) 2 and 3 only
 (c) 1 and 2 only (d) 1, 2 and 3
69. Consider the following statements:
- The parliamentary Committee on public accounts
1. consists of not more than 25 Members of the Lok Sabha
 2. scrutinizes appropriation and finance accounts of the Government
70. 3. examines the report of the Comptroller and Auditor General of India.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 and 3 only
 (c) 3 only (d) 1, 2 and 3
70. Consider the following statements:
1. The President of India cannot appoint a person as Prime Minister if he/she is not a member of either Lok Sabha or Rajya Sabha.
 2. The candidate for the office of Prime Minister must have the support of the majority members of both Lok Sabha and Rajya Sabha.
- Which of the statements given above is/are correct ?
- (a) 1 only (b) 2 only
 (c) Both 1 and 2 (d) Neither 1 nor 2
71. Consider the following statements:
1. It is on the advice of the Speaker of Lok Sabha that the President of India summons and prorogues Parliament and dissolves Lok Sabha .
 2. The resignation of the Prime Minister means the resignation of the entire Council of Ministers.
 3. A vote of confidence against one Minister. in Lok Sabha means the vote of confidence against the entire Council of Ministers.
- Which of the following statements given above are correct?
- (a) 1 and 2 only (b) 2 and 3 only
 (c) 1 and 3 only (d) 1, 2 and 3
72. Consider the following statements:
1. Salary and allowances of the Speaker of Lok Sabha are charged on the Consolidated Fund of India.
 2. In the Warrant of Precedence, the Speaker of Lok Sabha ranks higher than all the Union Cabinet Ministers other than Prime Minister.
- Which of the statement given above is/are correct?
- (a) 1 only (b) 2 only
 (c) Both 1 and 2 (d) Neither 1 nor 2
73. Which one of the following statements is/are correct with regard to the Vice-President of India?
1. He must be a member of Parliament.
 2. He is elected by proportional representation.
 3. He is Ex-officio Chairman of the Rajya Sabha.
- Select the correct answer unsing the code given below:
- (a) 1 only (b) 1 and 3
 (c) 2 and 3 (d) 1 and 2
74. In which among the following cases, the joint session of both the Houses of Parliament can be summoned?
1. To amend the Constitution.
 2. When a Bill has been pending with one House for more than six months after it was passed by the other
 3. When both the Houses disagree on the amendments to be made in a Bill.
 4. When a bill is passed by one House and is rejected by the other.
- Select the correct answer using the codes given below.
- (a) 1, 2 and 3 (b) 2, 3 and 4
 (c) 2 and 3 only (d) 1 and 4

Parliament.

2. Ministers hold the office till they enjoy confidence in the Parliament.
 3. Cabinet is headed by the Head of the State.
- Select the correct answer using the codes given below.
- (a) 1 and 2 only (b) 3 only
 (c) 2 and 3 only (d) 1, 2 and 3

106. Consider the following statements:

1. The Council of Ministers in the Centre shall be collectively responsible to the Parliament.
2. The Union Ministers shall hold the office during the pleasure of the President of India.
3. The Prime Minister shall communicate to the President about the proposals for legislation.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 and 3 only
 (c) 1 and 3 only (d) 1, 2 and 3

107. Consider the following statements:

1. The Chairman and the Deputy Chairman of the Rajya Sabha are not the members of that House.
2. While the nominated members of the two Houses of the Parliament have no voting right in the presidential election, they have the right to vote in the election of the Vice President.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only
 (c) Both 1 and 2 (d) Neither 1 nor 2

108. Consider the following statements:

In the electoral college for Presidential Election in India,

1. the value of the vote of an elected Member of Legislative Assembly equals
- $$\frac{\text{State Population}}{\text{Number of Elected MLAs of the State}} \times 100$$

2. the value of the vote of an elected Member of Parliament equals to total value of the votes of all elected MLA's and total number of elected MP's
3. there were more than 5000 members in the latest elections.

Which of these statements is/are correct?

- (a) 1 and 2 (b) Only 2
 (c) 1 and 3 (d) Only 3

109. Consider the following statements:

1. The Speaker of Lok Sabha has the power to adjourn the House sine die but, on prorogation, it is only the President who can summon the House
2. Unless sooner dissolved or there is an extension of the term, there is an automatic dissolution of the Lok Sabha by efflux of time, at the end of the period of five years, even if no formal order of dissolution is issued by the President
3. The Speaker of Lok Sabha continues in office even after the dissolution of the House and until immediately before the first meeting of the House

Which of the statements given above are correct?

- (a) 1 and 2 (b) 2 and 3 .
 (c) 1 and 3 (d) 1, 2 and 3

110. The functions of the committee on estimates, as incorporated in the Constitution of India, shall be to [CSAT-2014-I]

1. report what economies, improvements in organisation, efficiency or administrative reform may be effected.
2. suggest alternative policies in order to bring about efficiency and economy in administration.
3. examine whether the money is well laid out within the limits of the policy implied in the estimates.
4. examine the reports, if any, of the Comptroller and Auditor General on the public undertakings.

Select the correct answer using the codes given below

- (a) 1 and 2 (b) 2 and 3
 (c) 1, 2 and 3 (d) 3 and 4

111. The subject matter of an adjournment motion in the Parliament [CSAT-2014-I]

1. must be directly related to the conduct of the Union Government.
2. may involve failure of the Government of India to perform its duties in accordance with the Constitution.

Select the correct answer using the codes given below

- (a) Only 1 (b) Only 2
 (c) Both 1 and 2 (d) Neither 1 nor 2

112. The principle of "collective responsibility" under parliamentary democracy implies that [CSAT-2014-I]

1. a motion of no-confidence can be moved in the Council of Ministers as a whole as well as an individual minister.
2. no person shall be nominated to the cabinet except on the advice of the Prime Minister.
3. no person shall be retained as a member of the Cabinet if the Prime minister says that he shall be dismissed.

Select the correct answer using the codes given below

- (a) Only 1 (b) Only 2
 (c) Only 3 (d) 2 and 3

113. The Committee on Public Accounts under the Constitution of India is meant for [CSAT-2014-I]

1. the examination of accounts showing the appropriation of sums granted by the House for the expenditure of the Government of India
2. scrutinising the report of the Comptroller and Auditor-General
3. suggesting the form in which estimates shall be presented to the Parliament

Select the correct answer using the codes given below

- (a) Only 1 (b) Only 2
 (c) 1 and 2 (d) All of these

114. Which of the statements relating to the Deputy Speaker of the Lok Sabha is/are correct? [CSAT-2014-I]

1. The office of the Deputy Speaker acquired a more

- (B) Duties of the Prime Minister towards the President. (2) Article 77
- (C) Council of ministers to aid and advise the President. (3) Article 76
- (D) All executive action of the Government of India shall be taken in the name of the President. (4) Article 75
- (a) A – 4 ; B – 5 ; C – 1 ; D – 3 (5) Article 78
- (b) A – 3 ; B – 2 ; C – 4 ; D – 1
- (c) A – 4 ; B – 5 ; C – 1 ; D – 2
- (d) A – 3 ; B – 4 ; C – 1 ; D – 2

124. **List-I** **List-II**

- (A) Chief Election (1) Elected by Rajya Sabha Commissioner
- (B) Deputy Chairman (2) Elected by Lok Sabha of Rajya Sabha
- (C) Chairman of (3) Appointed by Lok Sabha Speaker
- Lok sabha
- (4) Appointed by the president
- (a) A-4, B-1, C-3 (b) A-2, B-3, C-4
- (c) A-1, B-4, C-2 (d) A-4, B-1, C-2

125. Match list I with list II and select the correct answer using the codes given below the lists :

- | List I
(Functionaries) | List II
(Oaths or affirmations) |
|---|--|
| A. President of India | 1. Secrecy of Information |
| B. Judges of Supreme Court | 2. Faithful discharge of duties |
| C. Members of Parliament | 3. Faith and Allegiance to the constitution of India |
| D. Minister for the Union | 4. Upholding the constitution and the law |

Codes:

A	B	C	D
(a) 3	4	1	2
(b) 4	3	2	1
(c) 3	4	2	1
(d) 4	3	1	2

126. Consider the List-I and List-II and choose the correct code given below.

- | List - I | List - II |
|---------------------------------|------------------|
| A. National Front | 1. 1996-98 |
| B. United Front | 2. 1998-2004 |
| C. National Democratic Alliance | 3. 1989-90 |
| D. United Progressive Alliance | 4. 2004-14 |

Codes:

A	B	C	D
(a) 3	1	2	4
(b) 1	3	2	4
(c) 1	2	3	4
(d) 1	2	4	3

127. Match List I with List II and select the correct answer:

List-I **List-II**

- | (Functionaries) | (Oaths or affirmations) |
|----------------------------|--|
| A. President of India | 1. Secrecy of information |
| B. Judges of Supreme Court | 2. Faithful Discharge of duties |
| C. Members of Parliament | 3. Faith and Allegiance to the Constitution of India |
| D. Minister for the Union | 4. Upholding the Constitution and the law |

Codes:

- (a) A-3, B-4, C-1, D-2 (b) A-4, B-3, C-2, D-1
 (c) A-3, B-4, C-2, D-1 (d) A-4, B-3, C-1, D-2

128. Match List-I with List-II and select the correct answer using the codes given below the lists:

List-I **List-II**
(Article of the Constitution) **(Content)**

- | | |
|----------------|--|
| A. Article 54 | 1. Election of the President of India |
| B. Article 75 | 2. Appointment of the Prime Minister |
| C. Article 155 | 3. Appointment of the Governor of a State |
| D. Article 164 | 4. Appointment of the Chief Minister and Council of Ministers of a State |
| | 5. Composition of Legislative Assemblies |

Codes:

- (a) A-1, B-2, C-3, D-4 (b) A-1, B-2, C-4, D-5
 (c) A-2, B-1, C-3, D-5 (d) A-2, B-1, C-4, D-3

HINTS AND EXPLANATIONS

EXERCISE

- | | | | | | | | | | | |
|---------|---|---------|---------|---------|---------|---|---|---------|---------|--|
| 1. (d) | 2. (d) | 3. (b) | 4. (c) | 5. (c) | 42. (d) | 43. (d) | 44. (c) | 48. (a) | 49. (b) | |
| 6. (d) | 7. (a) | 8. (c) | 9. (a) | 10. (b) | 45. (a) | 46. (d) | 47. (a) | 53. (c) | 54. (b) | |
| 11. (d) | 12. (a) | 13. (d) | 14. (d) | 15. (b) | 50. (d) | 51. (c) | 52. (d) | 58. (c) | 59. (b) | |
| 16. (c) | 17. (b) | 18. (d) | 19. (b) | 20. (a) | 55. (d) | 56. (b) | 57. (d) | | | |
| 21. (b) | 22. (d) | 23. (c) | 24. (c) | 25. (b) | 60. (a) | 61. (b) | | | | |
| 26. (d) | 27. (d) | 28. (c) | | | 62. (c) | The Attorney General of India has a post parallel to any minister in Parliament. He can take part in the proceedings of either house. He can be a member of any committee of Parliament. He has the right to speak in the Parliament but he has no right to vote. | | | | |
| 29. (c) | All the members of the Lok Sabha, except two members may be nominated by the President from Anglo-Indian Community. | | | | | | | | | |
| 30. (b) | Parliamentary committee in India presents its report to the speaker/Chairman of the house. The work done by the Parliament in modern times is not only varied and complex in nature, but also considerable in volume. The time at its disposal is limited. It cannot, therefore, give close consideration to all the legislative and other matters that come up before it. A good deal of its business is, therefore, transacted in Committees of the House, known as Parliamentary Committees. | | | | | 63. (a) | Minister/ministers can be removed by issuing no confidence motion in the parliament. All cabinet members are mandated by the constitution to be the member of either house of the parliament of India. Cabinet is headed by the cabinet secretary not by the Head of the State. | | | |
| 31. (d) | A no confidence motion does not need to set out grounds on which it is based. The withdrawal of the notice of no confidence motion by a member may be made when he is called upon by the speaker to ask for leave of the House. | | | | | 64. (c) | The Council of Ministers shall be collectively responsible to the parliament; the Prime minister shall communicate to the president about the proposals for legislation but the union. If a President were to dismiss the Council of Ministers on his or her own initiative, it might trigger a constitutional crisis. Thus, in practice, the Council of Ministers cannot be dismissed as long as it commands the support of a majority in the Lok Sabha. | | | |
| 32. (c) | Both the Houses have been enshrined with equal powers on the matter of impeachment of judges of the High Courts. Soumitra Sen is a retired judge of the Calcutta High Court. He was the first judge in independent India to be impeached in India's Rajya Sabha for misappropriation of funds. | | | | | 65. (b) | The nominated members of the Rajya Sabha have the right to vote in the election of the Vice President so far none from them has been inducted in the Council of Ministers. | | | |
| 33. (d) | Article 80 states that the state legislature participates in the election of the members of Rajya Sabha and also of the president (Art.54) | | | | | 66. (a) | Clause (3) of Article 77 "Conduct of Business of the Government of India" of the Constitution of India lays down as follows: "The President shall make rules for the more convenient transaction of the business of the Government of India, and for the allocation among Ministers of the said business. The Constitution of India mentions that All executive action of the Government of India shall be expressed to be taken in the name of the President. Therefore, only option (a) is correct. | | | |
| 34. (a) | 'Committee on public Accounts' consists of 22 members, 15 from the Lok Sabha and 7 from Rajya Sabha. A Lok Sabha member from a major opposition party is appointed its chairman. The Public Accounts Committee (PAC) is a committee of selected members of Parliament, constituted by the Parliament of India, for the auditing of the expenditure of the Government of India. | | | | | 67. (c) | A constitutional Government needs to balance between individual liberty viz a viz State Authority. | | | |
| 35. (d) | A no-confidence motion does not need to set out grounds on which it is based. The withdrawal of the notice by a member may be made when he is called upon by the speaker to ask for leave of the House. | | | | | 68. (c) | The functions of the Cabinet Secretariat are preparation of agenda for Cabinet Meetings & Secretarial assistance to Cabinet Committees. However Allocation of financial resources to the Ministries as per the provisions in budget is prepared by finance ministry. | | | |
| 36. (d) | The government may be expressed by the House of People by all the statements given. So the all statements are correct. | | | | | 69. (b) | The committee consists of 15 members of Lok sabha not 25 members. The function of the committee is to examine the accounts showing the appropriation of the sums granted by Parliament to meet the expenditure of the government of India and such other accounts laid before the House as the committee may think fit. Apart from the Reports of the Comptroller and Auditor General of India on | | | |
| 37. (b) | The government of India consists of a number of ministers/departments for its administration, each ministry assigned to a minister who runs it with the assistance of a secretary in charge of the particular ministry. | | | | | | | | | |
| 38. (a) | 39. (c) | 40. (c) | 41. (a) | | | | | | | |

- Appropriation Accounts of the Union Government, the Committee also examines the various Audit Reports of the Comptroller and Auditor General on revenue receipts, expenditure by various Ministries/ Departments of Government and accounts of autonomous bodies.
70. (d)
71. (b)
72. (c) Parliament may by law fix the salaries and allowances of the officers of Parliament (Article 97). The salaries are charged on the consolidated fund of India.
73. (c)
74. (c)
75. (c) Money Bills can be introduced only in Lok Sabha. Money bills passed by the Lok Sabha are sent to the Rajya Sabha. Rajya Sabha(Council of States) cannot reject or amend this bill. It can only recommend amendments.
76. (b) According to Article 67, a Vice-President may be removed from his office by a resolution of the Council of States passed by a majority of all the then members of the Council and agreed to by the House of the People.
77. (b) The Appropriation Bill is intended to give authority to Government to incur expenditure from and out of the Consolidated Fund of India. The procedure for passing this Bill is the same as in the case of other money Bills. An amendment of the Constitution can be initiated only by the introduction of a Bill in either House of Parliament. The procedure of amendment in the constitution is laid down in Part XX (Article 368) of the Constitution of India.
78. (b) Article 65 of the Indian Constitution says that while acting as president or discharging the functions of president, the Vice President does not perform the duties of the office of the chairman of Rajya Sabha. Article 123 of the Constitution grants the President certain law making powers to promulgate Ordinances when either of the two Houses of Parliament is not in session and hence it is not possible to enact laws in the Parliament.
79. (d) The Union executive consists of the President, the Vice-President, and the Council of Ministers with the Prime Minister as the head to aid and advise the President. He may, by writing under his hand addressed to the Vice-President, resign his office (Article 61). According to article 52, executive power of the Union is vested in the President.
80. (c) The Ministry of Parliamentary Affairs handles affairs relating to the Parliament of India and works as a link between the two chambers, the Lok Sabha and the Rajya Sabha. It constitutes consultative committees of members of Parliament and makes arrangements for holding their meetings, both during and between sessions.
81. (d) Committee on Public Accounts and Committee on Public Undertakings consist of 15 members elected by the Lok Sabha and 7 members of the Rajya Sabha. Committee on Estimates consists of 30 members who are elected by the Lok Sabha every year from amongst its members.
82. (b) The Government of India (Allocation of Business) Rules, 1961 are made by the President of India under Article 77 of the Constitution for the allocation of business of the Government of India. The Ministries/ Departments of the Government are created by the President on the advice of the Prime Minister under these Rules. The Cabinet Secretary is the ex-officio Chairman of the Civil Services Board of the Republic of India.
83. (a) Correct chronological order of the Vice-Presidents of India is as follows:
 1. V.V .Giri – 1967
 2. G.S Pathak –1969
 3. B.D Jatti –1974
 4. M Hidayatullah – 1979
84. (d) The Tenth Schedule (Anti-Defection Act) was included in the Constitution in 1985 by the Rajiv Gandhi ministry and sets the provisions for disqualification of elected members on the grounds of defection to another political party.
85. (b) The deposit made by a candidate shall be returned if the following conditions are satisfied:-
 (i) the candidate is not shown in the list of contesting candidates, that is to say, either his nomination was rejected or after his nomination was accepted, he withdrew his candidature; or
 (ii) he dies before the commencement of the poll; or
 (iii) he is elected; or
 (iv) he is not elected but gets more than 1/6th of the total number of valid votes polled by all the candidates at the election.
86. (c) The total elective membership of the Lok Sabha is distributed among States in such a way that the ratio between the number of seats allotted to each State and population of the State is, as far as practicable, the same for all States. The 84th Amendment to the Constitution (which was numbered as the 91st Amendment Bill before it was passed in Parliament) lifted the freeze on the delimitation of constituencies, as stipulated by the 42nd Constitution amendment of 1976, and allowed delimitation within States on the basis of the 1991 Census.
87. (b) A registered voter in India can contest an election to Lok Sabha from any constituency in India except autonomous Districts of Assam, Lakshadweep and Sikkim. According to Section 8 of Representation of Peoples Act 1951, a person convicted of any offence and sentenced to imprisonment for not less than two years [other than any offence referred to in sub-section (a) or sub-section (b)] shall be disqualified from the date of such conviction and shall continue to be disqualified for a further period of six years since his release.
88. (d) There are three Financial Committees in the Indian Parliament mentioned below:
 1. Estimates Committee- This Committee consists of 30 members who are elected by the Lok Sabha every year from amongst its members. The term of the Committee is one year.
 2. Committee on Public Undertakings- The Committee on Public Undertakings consists of 22 members(15 members from Lok Sabha and 7 members from Rajya Sabha). The term of the Committee is one year.
 3. Public Accounts Committee- This Committee

- consists of 22 members (15 members from Lok Sabha and 7 members from the Rajya Sabha.). The term of the Committee is one year.
89. (d) According to Article 78 it shall be the duty of the Prime Minister-
- to communicate to the President all decisions of the council of Ministers relating to the administration of the affairs of the union and proposals for legislation;
 - to furnish such information relating to the administration of the affairs of the Union and proposals for legislation as the President may call for;
 - if the President so requires, to submit for the consideration of the Council of Ministers any matter on which a decision has been taken by a Minister;
90. (d) · Election of Speaker shall be held on such date as the President may fix, and the Secretary-General shall send notice of this date to every member.
 · The election of a Deputy Speaker shall be held on such date as the Speaker may fix and the Secretary-General shall send notice of this date to every member.
 · At any time before noon on the day preceding the date so fixed, any member may give notice in writing, addressed to the Secretary-General, of a motion that another member be chosen as the Deputy Speaker of the House and the notice shall be seconded by a third member and shall be accompanied by a statement by the member whose name is proposed in the notice that he is willing to serve as Deputy Speaker, if elected.
91. (c) The Vice-President is elected by an Electoral College, which consists of the members of the Lok Sabha and Rajya Sabha (both elected and nominated members).
92. (c) The maximum strength of the House envisaged by the Constitution of India is 552, which is made up by election of up to 530 members to represent the states; up to 20 members to represent the Union Territories and not more than two members of the Anglo-Indian Community to be nominated by the President of India, if, in his/her opinion, that community is not adequately represented in the House.
93. (b) Statement 1 is correct as per provisions under Article 59. Statement 2 is correct as according to Article 79, Parliament shall consist of the President and two Houses.
94. (d) So far three joint sittings have been held, First was held on Dowry Prohibition Bill, 1961, Second was held on Banking Service Commission (Repeal) Bill, 1978 and Third was held on Prevention of Terrorism Bill, 2002. The presiding officer of joint sitting is Speaker of the Lok Sabha.
95. (d) Statement 1 is incorrect as members of RS can become cabinet ministers. Statement 2 is incorrect as Cabinet secretariat is under the direct charge of the PM.
96. (c) It is not the duty of the President of India to cause to be laid report of public Accounts Committee before the Parliament.
97. (a) The PAC is formed every year with a strength of not more than 22 members of which 15 are from Lok Sabha, the lower house of the Parliament, and 7 from Rajya Sabha, the upper house of the Parliament. The term of office of the members is one year. The Estimates Committee, constituted for the first time in 1950, is a Parliamentary Committee consisting of 30 Members, elected every year by the Lok Sabha from amongst its Members. The Ministry of Parliamentary Affairs renders secretarial assistance to the Cabinet Committee on Parliamentary Affairs, which, inter-alia recommends prorogation of both the Houses of the Parliament, Govt's stand on Private Members' Bills and Resolutions. Option 3 is not correct.
98. (a) Statement 1 is correct as per provisions under Article 249. Statement 2 is incorrect as resolutions approving the proclamation of Emergency are passed by both Houses of Parliament (not only LS).
99. (a) Statement 1 is correct as under Article 360, any Proclamation of Financial Emergency issued shall cease to operate at the expiration of two months, unless before the expiration of that period it has been approved by the resolutions of both Houses of Parliament. If approved by both Houses, then it operates for 6 months.
 Statement 2 is incorrect as it is excluding Judges of SC and High Courts; but under the provisions of effects of article 360, Judges of SC and HCs are included.
100. (a) Statement 2 is incorrect as Public Accounts Committee consists of 22 members: 15 from Lok Sabha and 7 from Rajya Sabha.
101. (b) Mohd. Hidayatullah (1979-84); Shankar Dayal Sharma (1987-92)
102. (b) According to Article 70 the Prime Minister shall be appointed by the President and the other Ministers shall be appointed by the President on the advice of the Prime Minister.
103. (b) If the Lok Sabha Speaker wants to resign, the letter of his / her resignation has to be addressed to the Deputy Speaker.
104. (a) Only 3rd and 4th are correct, thus the option (b) is right.
105. (a) Minister/ministers can be removed by issuing no confidence motion in the parliament. All cabinet members are mandated by the constitution to be the member of either house of the parliament of India. Cabinet is headed by the cabinet secretary not by the Head of the State.
106. (c) The Council of Ministers shall be collectively responsible to the parliament; the Prime minister shall communicate to the president about the proposals for legislation but the union. If a President were to dismiss the Council of Ministers on his or her own initiative, it might trigger a constitutional crisis. Thus, in practice, the Council of Ministers cannot be dismissed as long as it commands the support of a majority in the Lok Sabha.
107. (b) The nominated members of the Rajya Sabha have the right to vote in the election of the Vice President so far none from them has been inducted in the Council of Ministers.
108. (b) The value of a MP's vote is calculated by dividing the total value of all MLAs' votes by the number of MPs.
- Value of an MP vote =

The sum of vote value of elected members of all the Legislative Assemblies

The sum of elected members of both the house of Parliament

109. (b) Option 2 and 3 are correct. But as to option 1 there are special provisions. The Speaker shall determine the time when a sitting of the House shall be adjourned sine die or to a particular day, or to an hour or part of the same day: provided that the Speaker may, if he thinks fit, call a sitting of the House before the date or time to which it has been adjourned or at any time after the House has been adjourned sine die. It is not the President.
110. (c) The Committee on Public Undertakings examines the reports of the Comptroller & Auditor General on public undertakings.
111. (b) The subject matter of the motion must have a direct or indirect relation to the conduct or default on the part of the Union Government and must precisely pinpoint the failure of the Government of India in the performance of its duties in accordance with the provisions of the Constitution and Law.
112. (d) Cabinet collective responsibility is a tradition in parliamentary governments in which the prime minister is responsible for appointing the cabinet ministers. It is the Prime Minister who enforces collective responsibility amongst the Ministers through his ultimate power to dismiss a Minister. No person shall be nominated to the cabinet except on the advice of the Prime Minister. Secondly, no person shall be retained as a Member of the Cabinet if the Prime Minister says that he should be dismissed. In India, a Motion of No Confidence can be introduced only in the Lok Sabha.
113. (c) The Public Accounts Committee (PAC) is a committee of selected members of Parliament, constituted by the Parliament of India, for the auditing of the expenditure of the Government of India. Its chief function is to examine the audit report of Comptroller and Auditor General (CAG) after it is laid in the Parliament.
114. (c) The Deputy Speaker of the Lok Sabha is the vice-presiding officer of the Lok Sabha. He/She is elected from amongst the members. It acquired a more prominent position after 1950. He holds office till either he ceases to be a member of the Lok Sabha or he himself resigns.
115. (c) In recognizing a parliamentary party or group, the speaker shall take into consideration the following principles:
An association of members who propose to form a parliamentary party:
 1. Shall have an association of members who have a distinct programme of parliamentary work
 2. Shall have an organization both inside and outside the house
 3. Shall have at least a strength equal to the quorum fixed to constitute a sitting of the house i.e one tenth of the total number of members of the house.
116. (a) Article 79- There shall be a Parliament for the Union
- which shall consist of the President and two Houses to be known respectively as the council of States and the House of the People.
- Article 54 - The President shall be elected by the members of an electoral college consisting of the elected members of both Houses of Parliament; and the elected members of the Legislative Assemblies of the States.
117. (b) Article 108 of the Constitution empowers the President to summon a joint session of both houses "for the purpose of deliberating and voting on the Bill". In India, if a bill has been rejected by any house of the parliament and if more than six months have elapsed, the President may summon a joint session for purpose of passing the bill. If at the joint sitting the Bill is passed with or without amendments with a majority of total number of members of the two Houses present and voting, it shall be deemed to be passed by both the Houses. It is not frequently restored to establish the supremacy of the Lok Sabha.
118. (a) Clause (3) of Article 77 "Conduct of Business of the Government of India" of the Constitution of India lays down as follows: "The President shall make rules for the more convenient transaction of the business of the Government of India, and for the allocation among Ministers of the said business.
The Constitution of India mentions that, "All executive action of the Government of India shall be expressed to be taken in the name of the President." Therefore, only option (a) is correct.
119. (c) All revenues received by the Government by way of taxes like Income Tax, Central Excise, Customs and other receipts flowing to the Government in connection with the conduct of Government business i.e. Non-Tax Revenues are credited into the Consolidated Fund constituted under Article 266 (1) of the Constitution of India. No amount can be withdrawn from the Fund without authorization from the Parliament.
120. (b) A Money Bill cannot be introduced in Rajya Sabha. Rajya Sabha has no power either to reject or amend a Money Bill. It can only make recommendations on the Money Bill. It has no power to vote on the Demands for Grants.
121. (d) The Executive powers of the Union of India is vested in the President. The Cabinet Secretary (and not the Prime Minister) is the ex-officio head of the Civil Services Board.
122. (b) 123. (c) 124. (c)
125. (b) President- Upholding the constitution and the law; Judge of the supreme court- Faith and allegiance to the constitution of India; Members of Parliament- Faithful Discharge of Duties; Minister for the Union-Secrecy of Information.
126. (a)
127. (c) Oath or affirmation by the President under article 60; Oath or affirmation by Judge of SC, Members of Parliament, Ministers for the Union comes under Third Schedule of the Constitution.
128. (a)

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