Solved Paper of UPSC Civil Services Preliminary Exam 2001 Exam

Q1 In what way does the Indian Parliament exercise control over the administration?
(a) Through Consultative Committees of various ministries
(b) Through Parliamentary Committees
(c) By making the administrators send periodic reports
(d) By compelling the executive to issue writs

Correct Answer is (b) Through Parliamentary Committees

Functions of Parliamentary Committees
Parliamentary committees can range over all the functions that the legislature itself performs, with the exception of determining the formation of the Government. They perform functions which Houses of Parliament are not as well-fitted to perform, such as finding out facts of a case or issue, examining witnesses, sifting evidence and drawing up reasoned conclusions.

Accountability
Committees provide an increased ability for the Parliament to scrutinise government policy and expenditure. Committees are frequently appointed to parallel the ministerial or departmental structure adopted by the Executive. Each committee has a responsibility to provide oversight of government agencies within specific portfolios.

Legislation
Committees can be an important part of the legislative process. Examination by a committee can allow public input into the legislative process.

Representation / Education of Members
Committees enable the Parliament to be taken to the people, and enable evidence to be gathered from expert groups or individuals. They enable direct contact between the public and representative groups of Members of Parliament and a flow of information to Members. They facilitate an increased level of collegiality between members from different political parties who may not otherwise have the opportunity to work with one another.

The accountability functions of parliamentary committees include their ability:

to conduct inquiries;
to compel the attendance of persons and presentation of documents; and
to make reports and recommendations to Parliament.
Committees are usually empowered to compel the attendance of individuals and the presentation of documents. The defiance of an order of a parliamentary committee or the provision of misleading evidence may result in charges of contempt of the House.

Q2 Who among the following organised the famous Chittagong armoury raid ?
(a) Laxmi Sehgal
(b) Surya Sen
(c) Batukeshwar Datta
(d) J.M. Sengupta

Correct Answer is (b) Surya Sen

The Chittagong armoury raid, also known as the Chittagong uprising, was an attempt on 18 April 1930 to raid the armoury of police and auxiliary forces from the Chittagong armoury in the Bengal Presidency of British India (now in Bangladesh) by armed Indian independence fighters led by Surya Sen.

Q3 Consider the decadal Census data given below:
Decadal Population (in millions)
Year - Population
1961 - 10.7
1971 - 14.3
1981 - 16.2
1991 - 18.9
The above data refer to which one of the 'Population by Religion' Groups ?
(a) Sikhs
(b) Jains
(c) Christians
(d) Buddhists

Correct Answer is (a) Sikhs

Christians - 24,080,016

Sikhs - 19,215,730

Buddhists - 7,955,207

Q4 Which of the following committees examined and suggested Financial Sector Reforms ?
(a) Abid Hussain Committee
(b) Bhagwati Committee
(c) Chelliah Committee
(d) Narasimham Committee

Correct Answer is (d) Narasimham Committee

Narsimham Committee:Financial System
Abid Hussain Committee:Development Of Capital Markets

Bhagwati Committee:Unemployment
Bhagwati Committee:Public Welfare
Raja Chelliah Committee:Tax Reforms

Q5 In which one of the following cities is the Lingaraja Temple located ?
(a) Bhubaneswar
(b) Bijapur
(c) Kolkata
(d) Shravanabelagola

Correct Answer is (a) Bhubaneswar

Lingaraja Temple is a Hindu temple dedicated to Shiva and is one of the oldest temples in Bhubaneswar, the capital of the East Indian state of Odisha. The temple is the most prominent landmark of Bhubaneswar city and one of the major tourist attractions of the state.

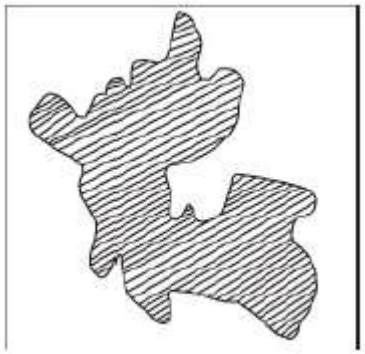
Q6 A London branch of the All-India Muslim League was established in 1908 under the presidency of
(a) Agha Khan
(b) Ameer Ali
(c) Liaquat Ali Khan
(d) M.A. Jinnah

Correct Answer is (b) Ameer Ali

Syed Ameer Ali Order of the Star of India (1849 – 1928) was an Indian/British Indian jurist hailing from the state of Oudh from where his father moved and settled down at Orissa. He was a prominent political leader, and author of a number of influential books on Muslim history and the modern development of Islam, who is credited for his contributions to the Law of India, particularly Muslim Personal Law, as well as the development of political philosophy for Muslims, during the British Raj. He was a signatory to the 1906 Petition to the Viceroy and was thus a founding-member of the All India Muslim League.

Syed Ameer Ali established the London Muslim League in 1908. This organisation was an independent body and not a branch of All India Muslim League. In 1909, he became the first Indian to sit as a member of the Judicial Committee of the Privy Council on which he would serve till his death in 1928. On appointment to the Privy Council he became entitled to be addressed as The Right Honourable.
In 1910, he established the first mosque in London.

Q7



The above map is the Union Territory of
(a) Chandigarh
(b) Daman and Diu
(c) Dadra and Nagar Haveli
(d) Pondicherry

Correct Answer is (c) Dadra and Nagar Haveli

Dadra and Nagar Haveli

Q8 Identify the correct order of the processes of soil-erosion from the following:
(a) Splash erosion, Sheet erosion, Rill erosion, Gully erosion
(b) Sheet erosion, Splash erosion, Gully erosion, Rill erosion
(c) Rill erosion, Gully erosion, Sheet erosion, Splash erosion
(d) Gully erosion, Rill erosion, Sheet erosion, Splash erosion

Correct Answer is (a) Splash erosion, Sheet erosion, Rill erosion, Gully erosion

Rainfall, and the surface runoff which may result from rainfall, produces four main types of soil erosion: splash erosion, sheet erosion, rill erosion, and gully erosion. Splash erosion is generally seen as the first and least severe stage in the soil erosion process, which is followed by sheet erosion, then rill erosion and finally gully erosion (the most severe of the four).

Q9 The new series of Wholesale Price Index (WPI) released by the Government of India is with reference to the base prices of
(a) 1981-82
(b) 1990-91
(c) 1993-94
(d) 1994-95

None of the option is valid now.

The new series of Wholesale Price Index(WPI) with base 2011-12 is effective from April 2017.

Q10 The chess player Alexi Shirov represents
(a) Albania
(b) Kazhakstan
(c) Russia
(d) Spain

Correct Answer is (d) Spain

Alexei Shirov is a Latvian and Spanish chess grandmaster. He was ranked number two in the world in 1994.

Q11 Consider the following organisations :
I. Atomic Minerals Directorate for Research and Exploration
II. Heavy Water Board
III. Indian Rare Earths Limited
IV. Uranium Corporation of India
Which of these is/are under the Department of Atomic Energy ?
(a) I only
(b) I and IV
(c) II, III and IV
(d) I, II, III and IV

Correct Answe is (d) I, II, III and IV

The Department of Atomic Energy (DAE) (IAST: Parama?u Urja Vibhaga) is a department directly under the Prime Minister of India with headquarters in Mumbai, Maharashtra, India. DAE has been engaged in the development of nuclear power technology, applications of radiation technologies in the fields of agriculture, medicine, industry and basic research. DAE comprises five research centres, three industrial

organisations, five public sector undertakings and three service organisations. It has under its aegis two boards for promoting and funding extramural research in nuclear and allied fields, mathematics and a national institute (deemed university). It also supports eight institutes of international repute engaged in research in basic sciences, astronomy, astrophysics, cancer research and education. It also has in its fold an educational society that provides educational facilities for children of DAE employees.

Organisation
Apex Board
Atomic Energy Commission (AEC), Mumbai, Maharashtra
Regulatory Board and Organisation
Atomic Energy Regulatory Board (AERB), Mumbai, Maharashtra is given some regulation powers by AEC.
Research & Development Sector
Bhabha Atomic Research Centre (BARC), Mumbai, following Research institutions affiliated to BARC
Atomic Minerals Directorate for Exploration and Research (AMD), Hyderabad
Indira Gandhi Centre for Atomic Research (IGCAR), Kalpakkam, Tamil Nadu
Raja Ramanna Centre for Advanced Technology, Indore
Variable Energy Cyclotron Centre (VECC), Kolkata
India-based Neutrino Observatory (INO)
Public Sector
Electronics Corporation of India (ECIL), Hyderabad
Indian Rare Earths Limited (IREL), Mumbai
Uranium Corporation of India, Singhbhum
Nuclear Power Corporation of India (NPCIL), Mumbai, Maharashtra
Bharatiya Nabhkiya Vidyut Nigam Limited (BHAVINI), Kalpakkam, Tamil Nadu
Industrial Organisations
Heavy Water Board (HWB), Mumbai
Nuclear Fuel Complex (NFC), Hyderabad
Board of Radiation & Isotope Technology (BRIT), Mumbai
Service Organizations
Directorate of Construction, Services and Estate Management (DAE) (DCSEM), Mumbai
Directorate of Purchase and Stores (DAE) (DPS), Mumbai
General Services Organisation (DAE) (GSO), Kalpakkam
Universities
Homi Bhabha National Institute, Mumbai
Tata Institute of Fundamental Research, Mumbai
Tata Institute of Fundamental Research, Hyderabad

Q12 Who among the following, was the President of the All-India States' Peoples' Conference in 1939 ?
(a) Jaya Prakash Narayan
(b) Jawaharlal Nehru
(c) Sheikh Abdullah
(d) Sardar Vallabhbhai Patel

Correct Answer is (b) Jawaharlal Nehru

The All India States Peoples' Conference (AISPC) was a conglomeration of political movements in the princely states of the British Raj. The first session of the organisation was held in Bombay in December 1927. The Conference eventually got affiliated to the Indian National Congress and Jawaharlal Nehru became its president in 1939. The Conference dissolved itself on 25 April 1948, all its constituents merging into the Congress.

Q13 Consider the following statements about the minorities in India :
I. The Government of India has notified five communities, namely, Muslims, Sikhs, Christians, Buddhists and Zoroastrians as Minorities.
II. The National Commission for Minorities was given statutory status in 1993.
III. The smallest religious minority in India are the Zoroastrians.
IV. The Constitution of India recognises and protects religious and linguistic minorities.
Which of these statements are correct ?
(a) II and III
(b) I and IV
(c) II, III and IV
(d) I, II and IV

Correct Answer is (a) II and III

The Union Government set up the National Commission for Minorities (NCM) under the National Commission for Minorities Act, 1992. Five religious communities, viz; Muslims, Christians, Sikhs, Buddhists and Zoroastrians (Parsis) have been notified as minority communities by the Union Government. Further vide notification detail 27th Jan 2014, Jains have also been notified as minority community.

According to the 2011 Census of India, there are 57,264 Parsis in India. According to the National Commission for Minorities, there are a "variety of causes that are responsible for this steady decline in the population of the community", the most significant of which were childlessness and migration. Demographic trends project that by the year 2020 the Parsis will number only 23,000. The Parsis will then cease to be called a community and will be labeled a 'tribe'. .
One-fifth of the decrease in population is attributed to migration. A slower birthrate than deathrate accounts for the rest: as of 2001, Parsis over the age of 60 make up for 31% of the community. Only 4.7% of the Parsi community are under 6 years of age, which translates to 7 births per year per 1000 individuals (Roy & Unisa 2004, p. 14). Concerns have been raised in recent years over the rapidly declining population of the Parsi community in India

Q14 The temperature and rainfall of a meteorological station are given below:

	J	F	M	A	M	J	J	A	S	O	N	D
Temperature (°C)	9.4	10.6	11.7	12.2	13.3	13.9	13.9	14.4	15.6	15.0	13.3	10.6
Rainfall (cm)	12.2	9.1	7.9	2.5	1.8	0.3	-	-	0.8	2.5	6.1	11.7

Average Temperature : 12.8 °C
Average Rainfall : 54.9 cm per annum
Identify the region having the above climatic pattern from amongst the following :
(a) Mediterranean region
(b) Monsoon region
(c) Steppe region
(d) N.W. European region

Correct Answer is (d) N.W. European region

Temperature of West European Climate:

The temperatures, in the west European climate are affected by marine influences, warm ocean cur-rents and prevailing winds and air masses. In fact, the moderating effects of sea bring down the difference between summer and winter seasons considerably. This climate is characterized by cool summer and mild winters. Average temperature during summer season ranges between 15°C and 21°C.

Thus, the summer months are characterized by negative thermal anomaly i.e., the coastal regions in the marine west coast climate record relatively lower temperature during summer season than the average temperature for their latitudes. There is very negligible variation in the spatial distri-bution of temperature during summer season as it is indicated by mean July temperature of the following stations = 17°C at Seattle (USA), 14.4°C at Bergen (Norway), 15.6°C at Dublin (Ireland), and 19°C at Paris (France).

Precipitation of West European Climate:

Marine coast climate or West European type of climate is basically humid climate and is characterized by abundant and uniformly distributed precipitation throughout the year but winter maximum is the charac-teristic feature of coastal locations while interior loca-tions record summer maximum. Inspite of abundant precipitation all the year round there is much spatial variation in its amount.

Generally, precipitation de-creases from the coasts towards interior locations and from north to south along the coast. The regional distribution of precipitation is highly controlled by topographic factor. The areas of low reliefs receive relatively low precipitation. For example, the north-western European lowland in the absence of any effec-tive relief barrier receives mean annual precipitation ranging between 50 cm and 75 cm.

Q15 The theme of the World Development Report, 2001 is
(a) From Plan to Market
(b) Knowledge for Development

(c) Attacking Poverty
(d) The State in the Changing World

Correct Answer is (c) Attacking Poverty

World Development Report 2000/2001 : Attacking Poverty

This report focuses on the dimensions of poverty, and how to create a better world, free of poverty. The analysis explores the nature, and evolution of poverty, and its causes, to present a framework for action.

Q16 In which one of the following areas does the State Government NOT have control over its local bodies ?
(a) Citizen's grievances
(b) Financial matters
(c) Legislation
(d) Personnel matters

Correct Answer is (d) Personnel matters

Although the 74th Amendment of the Constitution has granted sufficient autonomy to urban local institutions and these have been accorded constitutional status, these are not completely free from governmental control. The urban local government institutions work within the limits prescribed by the State municipal Act which creates and governs them.

1. Legislative Control:

Urban Local bodies are set up by the laws passed by the legislature. Government can bring changes in their organisation, powers and functions through a law passed by the legislature.

2. Financial Control:

Government undertakes the audit of the accounts of urban local bodies from time to time for checking irregularities committed by these institutions while spending money. For raising loans from the financial institutions. Municipal Councils have to seek the prior approval of the government.

3. Control through Government Officials:

Executive Officers of urban local bodies are government officials and the government exercises its control over these bodies through these officials. Executive Officer and the Commissioner of Municipal Corporation are the key instruments of governmental control over the urban local bodies. The Director Urban Local Bodies also performs such a role.

4. Power to dismiss the Urban Local Institutions:

Under 74th amendment to the Constitution, these institutions have been given a stable 5 years tenure. However, even then, if in the opinion of the government, an institution is not competent to perform its duties or persistently makes default in the performance of duties, the government can dismiss it even before the expiry of its term.

5. Administrative Control:

(i) The Government can seek any report, record or information from the Municipal councils and corporations,

(ii) The government can appoint any officer of its own to scrutinize and examine the work done by a Municipal Corporation Council,

(iii) The sanction in respect of the bye-laws passed by a Municipal Corporation/Council has to be obtained from the government.

Thus, Indian Political system has within it a well-organised and well-functioning systems of rural and urban local government. These grass root level local government institutions serve as instruments for providing political education and training to the people of India as well as these act as very useful means for securing the socio-economic development of Indian villages and cities.

No doubt their working has not been fully successful in securing the desired goals, nevertheless, they have the potential to develop and become stronger and efficient organs of local development with local resources, local efforts and through local representatives.

The Constitution 73rd and 74th Amendment Acts have made a bold attempt to ensure their continuity, stability, representativeness and autonomy with a view to enable them function as valuable systems of self-governance.

Q17 Who amongst the following Englishmen, first translated Bhagavad-Gita into English ?
(a) William Jones
(b) Charles Wilkins
(c) Alexander Cunningham
(d) John Marshall

Correct Answer is (a) William Jones

Sir Charles Wilkins, KH, FRS (1749 – 13 May 1836), was an English typographer and Orientalist, and founding member of The Asiatic Society. He is notable as the first translator of Bhagavad Gita into English, and as the creator, alongside Panchanan Karmakar, of the first Bengali typeface.

Q18 Consider the following statements regarding the High Courts in India :
I. There are eighteen High Courts in the country.
II. Three of them have jurisdiction over more than one State.
III. No Union Territory has a High Court of its own.

IV. Judges of the High Court hold office till the age of 62.
Which of these statements is/are correct ?
(a) I, II and IV
(b) II and III
(c) I and IV
(d) IV only

Correct Answer is (d) IV only

There are 24 high courts at the state and union territory level of India, which together with the Supreme Court of India at the national level, comprise the country's judicial system. Each high court has jurisdiction over a state, a union territory or a group of states and union territories.

UT Chandigarh has a High court of its own which also serves as High Court of Punjab and Haryana

1. High Court of Judicature at Hyderabad 5 July 1954 Andhra State Act, 1953 Andhra Pradesh, Telangana

2. Punjab and Haryana High Court 15 August 1947 Punjab High Court Ordinance, 1947 Chandigarh, Haryana, Punjab

3. Gauhati High Court 1 March 1948 Government of India Act, 1935 Arunachal Pradesh, Assam, Mizoram, Nagaland

4. Bombay High Court 14 August 1862 Indian High Courts Act 1861 Goa, Dadra and Nagar Haveli, Daman and Diu, Maharashtra

A Judge of High Court holds the office until he completes the age of 62 years. (In Supreme Court it is 65 years). The salaries and allowances of the Chief Justice of High Court and Judges of the High Court are decided by the parliament by law, time to time.

Q19 The term National Income represents
(a) Gross National Product at market prices minus depreciation
(b) Gross National Product at market prices minus depreciation plus net factor income from abroad
(c) Gross National Product at market prices minus depreciation and indirect taxes plus subsidies
(d) Gross National Product at market prices minus net factor income from abroad

Correct Answer is (c) Gross National Product at market prices minus depreciation and indirect taxes plus subsidies

National Income
Definition: National Income refers to the money value of all the goods and services produced in a country during a financial year. In other words, the final outcome of all the economic activities of the nation during a period of one year, valued in terms of money is called as a National income.

The economic activities that generate a large number of goods and services in the country constitute the national income of a closed economy, where no economic transactions with the rest of the world are taken into consideration. While in the case of an open economy, the national income includes the economic transactions with the rest of the world.

While the economic activities generate the flow of goods and services, it also generates the money flows in the form of factor payments, such as wage, rent, interest, earnings of the self-employed. Thus, national income can also be estimated by adding all the factor earnings and adjusting the sum of subsidies and the indirect taxes. Thus, the income obtained is called as a National income at factor Cost, related to the money flows.

Q20 Match List I with List II and select the correct answer using the codes given below the Lists :
List I - List II
(Local Wind) - (Region)
I. Fohn - (A) Argentina
II. Samun - (B) Kurdistan
III. Santa Ana - (C) California
IV. Zonda - (D) Alps
Codes:
(a) I-B, II-D, III-A, IV-C
(b) I-D, II-B, III-C, IV-A
(c) I-B, II-D, III-C, IV-A
(d) I-D, II-B, III-A, IV-C

Correct Answer is b) I-D, II-B, III-C, IV-A

A föhn or foehn is a type of dry, warm, down-slope wind that occurs in the lee (downwind side) of a mountain range.

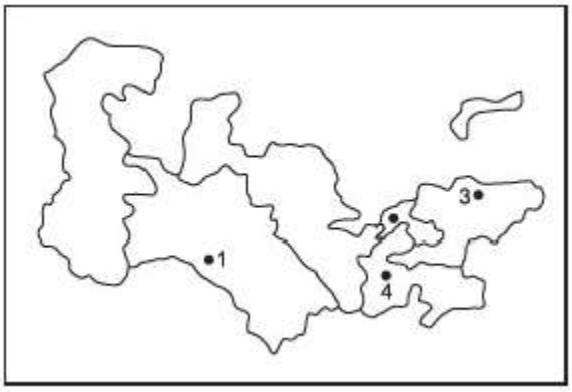
It is a rain shadow wind that results from the subsequent adiabatic warming of air that has dropped most of its moisture on windward slopes (see orographic lift). As a consequence of the different adiabatic lapse rates of moist and dry air, the air on the leeward slopes becomes warmer than equivalent elevations on the windward slopes. Föhn winds can raise temperatures by as much as 14 °C (25 °F) in just a matter of minutes. Central Europe enjoys a warmer climate due to the Föhn, as moist winds off the Mediterranean Sea blow over the Alps.

Simoom is a strong, dry, dust-laden wind usually used to describe a local wind that blows in the Sahara, Israel, Jordan, Syria, and the deserts of Arabian Peninsula.

The Santa Ana winds are strong, extremely dry down-slope winds that originate inland and affect coastal Southern California and northern Baja California. They originate from cool, dry high-pressure air masses in the Great Basin.

Zonda wind (Spanish: viento zonda) is a regional term for the foehn wind that often occurs on the eastern slope of the Andes, in Argentina. The Zonda is a dry wind (often carrying dust) which comes from the polar maritime air, warmed by descent from the crest, which is approximately 6,000 m (20,000 ft) above sea level. It may exceed a velocity of 40 km/h (25 mph).

Q21 The given map shows four towns of Central Asian region marked as 1, 2, 3, and 4. Identify these from the following list and select the correct answer using the codes given below :
Towns:
A. Bishkek
B. Ashkhabad
C. Tashkent
D. Dushanbe



Codes :
(a) A-3, B-1, C-2, D-4
(b) A-3, B-1, C-4, D-2
(c) A-1, B-3, C-2, D-4
(d) A-1, B-3, C-4, D-2

Correct Answer is (a) A-3, B-1, C-2, D-4

Q22 Mekong-Ganga Cooperation Project is
(a) an irrigation project involving India and Myanmar
(b) a joint tourism initiative of some Asian countries
(c) a hydroelectric power project involving India, Bangladesh and Myanmar
(d) a defence and security agreement of India with its eastern neighbours

Correct Answer is (b) a joint tourism initiative of some Asian countries

The Mekong–Ganga Cooperation (MGC) was established on November 10, 2000, at Vientiane, Laos at the First MGC Ministerial Meeting. It comprises six member countries, namely India (Look-East connectivity projects), Thailand, Myanmar, Cambodia, Laos and Vietnam. The four areas of cooperation

are tourism, culture, education, and transportation. The organization takes its name from the Ganga and the Mekong, two large rivers in the region.

Q23 Match List I with List II and select the correct answer using the codes given below the Lists :
List I - List II
(Amendments to the Constitution) - (Contents)
I. The Constitution (Sixty-ninth Amendment) Act, 1991 - (A) Establishment of State level Rent Tribunals Act, 1991
II. The Constitution (Seventy-fifth Amendment) Act, 1994 -(B) No reservations for Scheduled Castes in Panchayats in Arunachal Pradesh
III. The Constitution (Eightieth Amendment) Act, 2000 - (C) Constitution of Panchayats in Villages or at other local levels
IV. The Constitution (Eighty-third Amendment) Act, 2000 - (D) Accepting the recommendations of the Tenth Finance Commission

(E) According the status of National Capital Territory to Delhi

Codes :
(a) I-E, II-A, III-D, IV-B
(b) I-A, II-E, III-C, IV-D
(c) I-E, II-A, III-C, IV-D
(d) I-A, II-E, III-D, IV-B

Correct Answer is (a) I-E, II-A, III-D, IV-B

THE CONSTITUTION (SIXTY-NINTH AMENDMENT) ACT, 1991

[21st December, 1991.]

An Act further to amend the Constitution of India.

BE it enacted by Parliament in the Forty-second Year of the Republic of India as follows:-

1. Short title and commencement.- (1) This Act may be called the Constitution (Sixty-ninth Amendment) Act, 1991.

(2) It shall come into force on such date_678 as the Central Government may, by notification in the Official Gazette, appoint.

2. Insertion of new articles 239AA and 239AB.- After article 239A of the Constitution, the following articles shall be inserted, namely:-

`239AA. Special provisions with respect to Delhi.-(1) As from the date of commencement of THE CONSTITUTION (Sixty-ninth Amendment) Act, 1991, the Union territory of Delhi shall be called the National

Capital Territory of Delhi (hereafter in this Part referred to as the National Capital Territory) and the administrator thereof appointed under article 239 shall be designated as the Lieutenant Governor.

(2) (a) There shall be a Legislative Assembly for the National Capital Territory and the seats in such Assembly shall be filled by members chosen by direct election from territorial constituencies in the National Capital Territory.

The Constitution (Seventy-fifth Amendment) Act, 1994—

The operation of the Rent Control Legislations, as are today in various states, suffers from major weaknesses and has led to various unintended consequences. Some of the deleterious legal consequences include mounting and mending litigation, inability of the courts to provide timely justice, evolution of practices and systems to bypass the operations of rent legislations and steady shrinkage of rental housing market.

The Supreme Court taking note of the precarious state of rent litigation in the country in case of Prabhakaran Nair and others vs. State of Tamil Nadu (Civil Writ Petition 506 of 1986) and other writs observed that the Supreme Court and the High Courts should be relieved of the heavy burden of rent litigation. Tiers of appeals should be curtailed. Laws should be simple, rational and clear, litigations must come to end quickly.

Therefore, this Act amends Article 323B in Part XIVA of the Constitution so as to give timely relief to the rent litigants by providing for setting up of state-level Rent Tribunals in order to reduce the tiers of appeals and to exclude the jurisdiction of all courts, except that of the Supreme Court, under Article 136 of the Constitution.

The Constitution (Eighty-third Amendment) Act, 2000—

The Act amended Acticle 243M of the Constitution to provide that no reservation in Panchayats need be made in favour of the Scheduled Castes in Arunachal Pradesh wholly inhabited by tribal population.

Q24 The largest number of Buddhists is found in
(a) Bihar
(b) Karnataka
(c) Maharashtra
(d) Uttar Pradesh

Correct Answer is (c) Maharashtra

The largest concentration of Buddhism is in Maharashtra (58.3%), where (73.4%) of the total Buddhists in India reside. Karnataka (3.9 lakh), Uttar Pradesh (3.0 lakh), west Bengal (2.4 lakh) and Madhya Pradesh (2.0 lakh) are other states having large Buddhist population.

The Constitution (Eightieth Amendment) Act, 2000—

Based on the recommendations of the Tenth Finance Commission, an alternative scheme for sharing taxes between the Union and the States has been enacted by the Constitution (Eightieth Amendment) Act 2000. Under the new scheme of devolution of revenue between Union and the States, 26 per cent out of gross proceeds of Union taxes and duties is to be assigned to the States in lieu of their existing share in the income-tax, excise duties, special excise duties and grants in lieu of tax on railway passenger fares.

Q25 Who amongst the following was the Chairman of ISRO when INSAT-3B was launched ?
(a) Anil Kakodkar
(b) Abdul Kalam
(c) K. Kasturirangan
(d) U. R. Rao

Correct Answer is (c) K. Kasturirangan

BANGALORE, JAN. 24. The Insat-3B, the first of Indian Space Research Organisation's third generation communication satellites, is expected to be launched on an Ariane 5 launch vehicle around the middle of March this year.

This 2,070-kg satellite is primarily intended for business, development and mobile communications, the ISRO Chairman, Dr. K. Kasturirangan, told presspersons here today. Development of the Insat-3B had been accelerated after the failure of the Insat-2D in late 1997 depleted the Insat system's extended C-band capacity used for Very Small Aperture Terminal (VSAT) communications.

Q26 Assertion (A):
The Battle of Khanua was certainly more decisive and significant than the First Battle of Panipat.
Reason (R):
Rana Sanga, the Rajput hero, was certainly a more formidable adversary than Ibrahim Lodi.
(a) Both A and R are individually true, and R is the correct explanation of A
(b) Both A and R are individually true, but R is NOT a correct explanation of A
(c) A is true, but R is false
(d) A is fasle, but R is true

Correct Answer is (a) Both A and R are individually true, and R is the correct explanation of A

Sultan Ibrahim Lodi was heading an army of 1 lakh soldiers and 300 war elephants. Babur had an army which was much less in number but strategically arranged. Babur introduced Guns and Canons in this battle which proved decisive for Babur in winning the Panipat battle against Ibrahim Lodi.
The Guns and Canons were provided protected shield so that they could not be seized by the enemy.
Ibrahim Lodi was killed in the battle.
The Highlights of Panipat battle

• The Guns and Canons proved decisive and established the fact that the technology not the number decides the outcome of any battle.
• This battle ended the era of Delhi Sultanate and paved way for a new dynasty, Mughal Dynasty.
Babur earned the nickname of Kalandhari for distributing wealth and precious stones among his people.
Battle of Khanwa
After winning the Panipat battle, Babur turned his attention to Rana Sanga, the formidable Rajput king. On 16 March, 1527 the armies of Babur and Rana Sanga fought against each other in battle of Khanwa. Once again the Canons and Guns of Babur wreaked havoc in the opposition camp. The Rajputs under Rana Sanga were defeated and Babur became the undisputed ruler of India. In fact, winning the battle of Khanwa was more important for Babur than battle of Panipat.

Q27 Assertion (A):
Anti-cyclonic conditions are formed in winter season when atmospheric pressure is high and air temperatures are low.
Reason (R):
Winter rainfall in Northern India causes development of anticyclonic conditions with low temperatures.
(a) Both A and R are individually true, and R is the correct explanation of A
(b) Both A and R are individually true, but R is NOT a correct explanation of A
(c) A is true, but R is false
(d) A is fasle, but R is true

Correct Answer is (d) A is fasle, but R is true

Anticyclones are areas of intense high pressure (typically above 1020mb) where air molecules descend to the earth's surface from the upper Troposphere. Anticyclones can occur in both winter and summer with varying effects, but both are typified by low wind speeds due to a weak pressure gradient and stable conditions with no clouds. The absence of clouds (and hence precipitation) is due to the fact that as the air molecules descend through the troposphere they warm at the Dry Adiabatic Lapse Rate (DALR- air cools or warms at 9.8ºC for every 1000m ascent or descent through the atmosphere) meaning condensation does not occur.

The cloudy rainy weather of low-pressure depressions is due to rising air, which is most pronounced near frontal regions. The anticyclone on the other hand is produced by a large mass of descending air. This subsidence takes place throughout a depth of the atmosphere up to 12km. Such subsidence means that the air is very stable and atmospheric pressure is high. In addition, winds associated with an anticyclone are usually very light if present at all, especially close to the centre of the high-pressure system.

Subsidence warms the air by compression. Any clouds present quickly evaporate as the temperature of the air rises above its dew point. For this reason, anticyclones usually bring fine, dry and settled weather, particularly in the summer.

The winter circulation at the surface in India is characterised by Anti-cyclonic condition,both to the north and to the south the Himalayas -Tibettian mass which forms an effective barrier to communication between sectors of the surface circulation. The Indian subcontinent is thus isolated from rest of the Asia. Wind blow outwards from the land , overwhich air is subsiding ; the air dries out and rainfall is largely prevented in this time.

But above 3000m the circulation is quite different. A strong westerly flow, including the jet stream ,flows across the continent and bifurcates around the Tibettian mountain mass in this season. This upper flow has effect of intensifying the surface anticyclone, and it also brings a string of surface cyclonic disturbances into the north-west from the Middle East and Mediterranean areas. This inflow of depression from the west and to the north west is known as the Western Disturbance. Four or five such depression visit in India each winter on an average being most active during December to February.

These depression are responsible for much of the rainfall over plain and snowfall over the higher reaches in the Himalayas. The amount of rainfall decreases from west to east.

Q28 Assertion (A):
Harshavardhana convened the Prayag Assembly.
Reason (R):
He wanted to popularise only the Mahayana form of Buddhism.
(a) Both A and R are individually true, and R is the correct explanation of A
(b) Both A and R are individually true, but R is NOT a correct explanation of A
(c) A is true, but R is false
(d) A is fasle, but R is true

Correct Answer is (c) A is true, but R is false

Pushyabhuti, the founder of the dynasty to which Harsha belonged, was a devotee of Siva. Harsha's father, Prabhakara Vardhana "offered daily to the Sun a bunch of red Lotuses".

Harsha's brother Rajya Vardhana and sister Rajyasri were deeply attached to the Hinayana form of Buddhism. And, Harsha himself turned into a strong believer in Mahayana Buddhism.

The Prayaga Assembly:
The Kanauj Assembly was followed by another spectacular assembly at Prayaga in the same year. While the Kanauj Assembly was a religious assembly to highlight Mahayanism, the Prayaga Assembly was an assembly of universal character for offerings of royal charities to all classes of people. It was known as the Maha Moksha Parishud. Harsha was at his best in the Prayaga Assembly as a generous monarch and an admirer of all the major faiths of his country.

The Prayaga Assembly saw a huge gathering of people. The Emperor came there with Hiuen Tsang, and the kings of twenty countries. The site of the assembly was on the vast expanses of sands at the meeting place of the rivers Ganga and Yamuna. Half a million people, summoned from the distant corners of the 'Five Indies' attended this unique assembly to receive gifts from the king. The ceremonies lasted for 75 days. Every arrangement was made for the accommodation and food of such a big multitude.

Q29 Assertion (A):
There was an increase in industrial production during 1999-2000.
Reason (R):
The period witnessed a stable exchange rate and improved business sentiments.
(a) Both A and R are individually true, and R is the correct explanation of A
(b) Both A and R are individually true, but R is NOT a correct explanation of A
(c) A is true, but R is false
(d) A is fasle, but R is true

Correct Answer is (a) Both A and R are individually true, and R is the correct explanation of A

The annual rate of growth of real GDP at factor cost has declined in industry and services sector in post-reform period as compared to pre-reform period. However, in case of agriculture and allied activities this rate fluctuates because of the vagaries of the nature. The key reason for a slow down in industrial growth has been the significant fall in public investment levels that have occurred during the 1990s especially since 1995. Recent trends and surveys do indicate that the industry may finally be coming out of the recession in the second half of 1999-2000. The index number of industrial production showed the growth of industrial production during 1999-2000 as compared to earlier period and is given in Table 3.

Table 3 shows that the index numbers of industrial production registered a significant growth which might be suggestive of the impending recovery of industrial growth.

And yet there are many dimensions in which performance has lagged behind expectations. Faster growth has not reduced poverty as much as it should have, nor has it created the number of high quality jobs needed to satisfy the aspirations of the country's increasingly educated youth. Growth has not been as regionally balanced as it should have been. Deficiencies in social development indicators have also continued and became a major

TABLE 3

Index Numbers of Industrial Production

Year	*General Index*	*Manufacturing*
1993-94	100.0	100.0
1994-95	108.4	108.5
1995-96	122.3	123.5
1996-97	129.1	131.8
1997-98	137.6	140.5
1998-99	143.1	146.7
1999-2000	146.4	150.4

Source: *Report on Currency and Finance* (various issues).

Q30 Assertion (A):
India's software exports increased at an average growth rate of 50% since 1995-96.
Reason (R):
Indian software companies were cost-effective and maintained international quality.
(a) Both A and R are individually true, and R is the correct explanation of A
(b) Both A and R are individually true, but R is NOT a correct explanation of A
(c) A is true, but R is false
(d) A is false, but R is true

Correct Answer is (a) Both A and R are individually true, and R is the correct explanation of A

The set of economic reform measures initiated since 1991 also impacted on the performance of the services sector. First, reforms in the domestic industrial environment which resulted in rising manufacturing growth provided synergies to the services sector in the form of increased demand for producer services. Second, the liberalisation of the financial sector provided an environment for faster growth of the financial services. Third, reforms in certain segments of infrastructure services also contributed to the growth of services. Consequently, the services sector posted a much higher growth during the reform period as compared with the pre-reform period with its share touching nearly the 50 per cent mark. Finally, the rapid growth in services sector appears to have benefited from external demand; the typical example of which is the software industry and call centres.

The labour productivity in software services is estimated to be twice that of the manufacturing sector.

Q31 Assertion (A):
Ceiling on foreign exchange for a host of current account transaction heads was lowered in the year 2000.
Reason (R):
There was a fall in foreign currency assets also.
(a) Both A and R are individually true, and R is the correct explanation of A

(b) Both A and R are individually true, but R is NOT a correct explanation of A
(c) A is true, but R is false
(d) A is fasle, but R is true

Correct Answer is (a) Both A and R are individually true, and R is the correct explanation of A

In order to encourage foreign investment, foreign direct investment (FDI) is permitted under the automatic route for most activities except in certain circumstances and for a very small negative list. New foreign investment proposals in the IT sector have been allowed automatic approval irrespective of whether the investor has an existing joint venture or technical collaboration in the country. No monetary ceilings have been placed on investment under the automatic route. Foreign Investment Promotion Board (FIPB) now considers applications for FDI up to 100 per cent for oil refining sector, business-to-business e-commerce and internet service providers (ISPs) subject to certain conditions. FDI under the automatic route has been permitted up to 100 per cent for all manufacturing activities (with certain exceptions) in Special Economic Zones (SEZs).

Foreign Exchange Reserves in India decreased to 406060 USD Million in June 29 from 407820 USD Million in the previous week. Foreign Exchange Reserves in India averaged 214708.78 USD Million from 1998 until 2018, reaching an all time high of 426080 USD Million in April of 2018 and a record low of 29048 USD Million in September of 1998.

Q32 Assertion (A):
During the Neap Tides, the high tide is lower and the low tide is higher than usual.
Reason (R):
The Neap Tide, unlike the Spring Tide, occurs on the New Moon instead of on the Full Moon.
(a) Both A and R are individually true, and R is the correct explanation of A
(b) Both A and R are individually true, but R is NOT a correct explanation of A
(c) A is true, but R is false
(d) A is false, but R is true

Correct Answer is (c) A is true, but R is false

A spring tide—popularly known as a "King Tide"—refers to the 'springing forth' of the tide during new and full moon.
A neap tide—seven days after a spring tide—refers to a period of moderate tides when the sun and moon are at right angles to each other.

Tides are long-period waves that roll around the planet as the ocean is "pulled" back and forth by the gravitational pull of the moon and the sun as these bodies interact with the Earth in their monthly and yearly orbits.

During full or new moons—which occur when the Earth, sun, and moon are nearly in alignment—average tidal ranges are slightly larger. This occurs twice each month. The moon appears new (dark)

when it is directly between the Earth and the sun. The moon appears full when the Earth is between the moon and the sun. In both cases, the gravitational pull of the sun is "added" to the gravitational pull of the moon on Earth, causing the oceans to bulge a bit more than usual. This means that high tides are a little higher and low tides are a little lower than average.

These are called spring tides, a common historical term that has nothing to do with the season of spring. Rather, the term is derived from the concept of the tide "springing forth." Spring tides occur twice each lunar month all year long, without regard to the season.

Seven days after a spring tide, the sun and moon are at right angles to each other. When this happens, the bulge of the ocean caused by the sun partially cancels out the bulge of the ocean caused by the moon. This produces moderate tides known as neap tides, meaning that high tides are a little lower and low tides are a little higher than average. Neap tides occur during the first and third quarter moon, when the moon appears "half full."

Q33 The prices at which the Government purchases food grains for maintaining the public distribution system and for building up buffer-stocks is known as
(a) minimum support prices
(b) procurement prices
(c) issue prices
(d) ceiling prices

Correct Answer is (b) procurement prices

Minimum Support Price (MSP) is a form of market intervention by the Government of India to insure agricultural producers against any sharp fall in farm prices. The minimum support prices are announced by the Government of India at the beginning of the sowing season for certain crops on the basis of the recommendations of the Commission for Agricultural Costs and Prices (CACP). MSP is price fixed by Government of India to protect the producer - farmers - against excessive fall in price during bumper production years. The minimum support prices are a guarantee price for their produce from the Government that this will be the minimum price at which their product will fetch.If the market price is above,MSP,the farmer can obviously sell it at the marketprices.In case the market price for the commodity falls below the announced minimum price due to bumper production and glut in the market, government agencies purchase the entire quantity offered by the farmers at the announced minimum price.

The major objectives are to support the farmers from distress sales and to procure food grains for public distribution.

As of 2015-16,Minimum support prices are currently announced for 25 commodities,which includes food grains like Wheat ,paddy etc and non food crops like raw cotton,raw jute etc.

Then there is this concept of PROCUREMENT PRICE,which is the price at which government procures food grains for buffer stocking and PDS purposes through FCI.

Consider the situation where,in the wake of an imminent food shortage that may occur, the traders are willing to procure food grains in advance,driving up the market price.When the market prices are much higher than the MSP,the farmer will obviously be willing to sell it in the market.
But the government,still, needs to procure food grains on its own to meet its distribution commitments in PDS at subsidised rates(issue price) and to create the buffer stock,necessary to intervene from supply side incase there is food deficiency and high food inflation.Therefore the government so as to fulfill these commitments,declares a Procurement price which is > or = to the MSP.

The major difference between MSP and PP is that while PP is for food grains only,MSP is for 25 crops which includes both food grains and non food grains.

Q34 The theme of Indian Science Congress, 2001 was
(a) "Food Nutrition and Environmental Security"
(b) "Arrest declining interest in pure sciences"
(c) "Make India energy self-sufficient"
(d) "Make India IT Superpower"

Correct Answer is (a) "Food Nutrition and Environmental Security"

'Food, nutrition and environmental security'
was the focal theme of the recently concluded Indian Science Congress 2001. For the first time in the history of the Congress, augmenting the theme, was an invitation extended to progressive farmers to attend the Congress. Several scientists, farmers, students, NGOs, the public and the media attended the Congress, whose aim, according to one top scientist was 'to serve as a forum for interaction between individuals from diverse backgrounds and not merely a science and technology meet'

Q35 Consider the following statements regarding environment issues of India:
I. Gulf of Manner is one of the biosphere reserves.
II. The Ganga Action Plan, phase II has been merged with the National River Conservation Plan.
III. The National Museum of Natural History at New Delhi imparts non-formal education in environment and conservation.
IV. Environmental Information System (ENVIS) acts as a decentralised information network for environmental information.
Which of these statements are correct ?
(a) I, II and IV
(b) I, II, III and IV
(c) II and III
(d) I, III and IV

Correct Answer is (b) I, II, III and IV

The Gulf of Mannar Biosphere Reserve covers an area of 1,050,000 hectares on the south-east coast of India across from Sri Lanka. It is one of the world's richest regions from a marine biodiversity perspective.

National River Conservation Plan
The Ganga Action Plan (GAP) Phase - I which was taken up as 100% Centrally funded scheme and aimed at preventing the pollution of river Ganga and to improve its water quality. The plan was started in June 1985. The program of river cleaning was extended to other major rivers of the country under two separate schemes of GAP Phase - II and the National River Conservation Plan (NRCP). Yamuna and Gomati Action Plans were approved in April 1993 under Ganga Action Plan Phase - II. Programs of other major rivers were subsequently approved in 1995 under NRCP. After launching of NRCP in 1995, it was decided to merge GAP II with NRCP. A notification of this effect was issued on 5.12.96.

Realising that, as a National Institution, the National Museum of Natural History has an obligation to the entire country in respect of creating environment awareness and promoting conservation education, it was decided during the VII Plan to have regional offices in the form of Regional Museum of Natural History (RMNH) in different parts of the country in a phased manner so as to extend the activities of NMNH at regional and state levels.

Environmental Information System (ENVIS), by providing scientific, technical and semi-technical information on various environmental issues since its inception in 1982-83 (Sixth Plan), has served the interests of policy formulation and environment management at all levels of Government as well as decision-making aimed at environmental protection and its improvement for sustaining good quality of life of all living beings. The purpose has been to ensure integration of national efforts in web-enabled environmental information collection, collation, storage, retrieval and dissemination to all concerned, including policy planners, decision-makers, researchers, scientists and the public.

Functionally, it is a decentralized system of Centres mandated to develop a distributed network of subject-specific databases. With the association of the various State Governments/Union Territories' Administrations in promoting the ENVIS network to cover a wide range of subjects, 28 ENVIS Centres are operating from State/UT Departments/ Pollution Control Boards on State/ UT-wide status of environment and related issues.

Q36 Which one of the Chola kings conquered Ceylon ?
(a) Aditya I
(b) Rajaraja I
(c) Rajendra
(d) Vijayalaya

Correct Answer is c) Rajendra

The period of Chola rule in the island of Sri Lanka began with the invasion in 993 AD, when Raja Raja Chola sent a large Chola army which conquered the Anuradhapura Kingdom, in the north, and added it to the Chola Empire. Most of the island was subsequently conquered and incorporated as a province of the vast Chola empire during the reign of his son Rajendra Chola.

Q37 Consider the following statements regarding the Armed Forces :
I. First batch of women pilots was commissioned in Indian Air Force in 1996.
II. Officers' Training Academy is located in Nagpur.

III. Southern Command of Indian Navy has its Headquarters at Chennai.
IV. One of the Regional Headquarters of Coast Guard is located at Port Blair.
Which of these statements are correct ?
(a) I, II, III and IV
(b) II, III and IV
(c) III only
(d) II and IV

Correct Answer is (d) II and IV

A high-risk adventurous career has always attracted the young, but it was never thought of as either a hobby or a full-time career for women. But times have changed. The first ever women officers were commissioned into the Administrative and Education branches of the Indian Air Force on 12 Jun 93 and the first ever woman pilots on 17 Dec 94.

Nagpur.
About 239 cadets were inducted into National Cadet Corps as Associate NCC officers on Saturday after an impressive Passing Out Parade at the prestigious NCC Officers Training Academy, Kamptee.

The Southern Naval Command is one of the three main formations of the Indian Navy. It has its headquarters in Kochi, Kerala at INS Venduruthy.

A & N REGION - The Headquarters of Coast Guard Region (Andaman & Nicobar) is located at Port Blair. The entire coastline from Landfall island in north to Indira point in south including 572 islands comes under the operational and administrative control of the Commander Coast Guard Region (Andaman & Nicobar).

Q38 Consider the following statements regarding power sector in India :
I. The installed capacity of power generation is around 95000 MW.
II. Nuclear plants contribute nearly 15% of total power generation.
III. Hydroelectricity plants contribute nearly 40% of total power generation.
IV. Thermal plants at present account for nearly 80% of total power generation.
Which of these statements is/are correct ?
(a) I only
(b) II and III
(c) III and IV
(d) I and IV

As of Now none of the options is correct

As of March 2015, the installed capacity of power generation in India is around 271.7 GW of which 72% is in Non-renewable sector while 28% is in renewable sector. The thermal power is produced in Coal, Gas and Diesel based power plants. Nuclear power is produced in nuclear plants. Renewable power includes Hydel plants and other renewable sources such as wind, biomass, bagasse, waste-to-power and solar power.

Installed Capacity of Power Generation in India			
Thermal	Coal	164636	60.59
	Gas	23,062	8.49
	Diesel	1,200	0.44
	Nuclear	5,780	2.13
Renewable	Hydel	41,267	15.19
	Small Hydro	4,055	1.49
	Wind	23,444	8.63
	Biomass	1,410	0.52
	Bagasse	3,008	1.11
	Waste to Power	115	0.04
	Solar Power	3,744	1.38
	Total	2,71,722	100.00
		Data: MW, March 2015	

Q39 If a new State of the Indian Union is to be created, which one of the following Schedules of the Constitution must be amended ?
(a) First
(b) Second
(c) Third
(d) Fifth

Correct Answer is (a) First

First Schedule
List of States & Union Territories

Q40 National Agriculture Insurance Scheme replacing Comprehensive Crop Insurance Scheme was introduced in the year
(a) 1997
(b) 1998
(c) 1999
(d) 2000

Correct Answer is (c) 1999

Name of the Scheme National Agricultural Insurance Scheme (NAIS)
Sponsored by Both: Central & State Government
Funding Pattern50:50 sharing basis between central and state government.
Introduced On 01 / 04 / 1999

Q41 Who among the following presided over the Buddhist Council held during the reign of Kanishka at Kashmir ?

(a) Parsva
(b) Nagarjuna
(c) Sudraka
(d) Vasumitra

Correct Answer is (d) Vasumitra

The Fourth Buddhist Council of the Sarvastivada tradition is said to have been convened by the Kushan emperor Kanishka (r. AD 127-151), perhaps in 78 at Jalandhar or in Kashmir. The Fourth Council of Kashmir is not recognized as authoritative for the Theravadins; reports of this council can be found in scriptures which were kept in the Mahayana tradition. The Mahayana tradition based some of its scriptures on (refutations of) the Sarvastivadin Abhidharma texts.
It is said that for the Fourth Council of Kashmir, Kanishka gathered 500 monks headed by Vasumitra, partly, it seems, to compile extensive commentaries on the Sarvastivadin Abhidharma, although it is possible that some editorial work was carried out upon the existing canon itself. The main fruit of this Council was the vast commentary known as the Mahavibha?a ("Great Exegesis"), an extensive compendium and reference work on a portion of the Sarvastivadin Abhidharma.

Q42 Match List I with List II and select the correct answer using the codes given below the Lists :
List I -List II
(Country) - (President)
I. Columbia - (A) Vicente Fox
II. The Philippines - (B) Hugo Chavez
III. Mexico - (C) Gloria Macapagal Arroya
IV. Venezuela - (D) Andres Pastrana
Codes :
(a) I-D, II-C, III-B, IV-A
(b) I-C, II-D, III-B, IV-A
(c) I-D, II-C, III-A, IV-B
(d) I-C, II-D, III-A, IV-B

Correct Answer is (c) I-D, II-C, III-A, IV-B

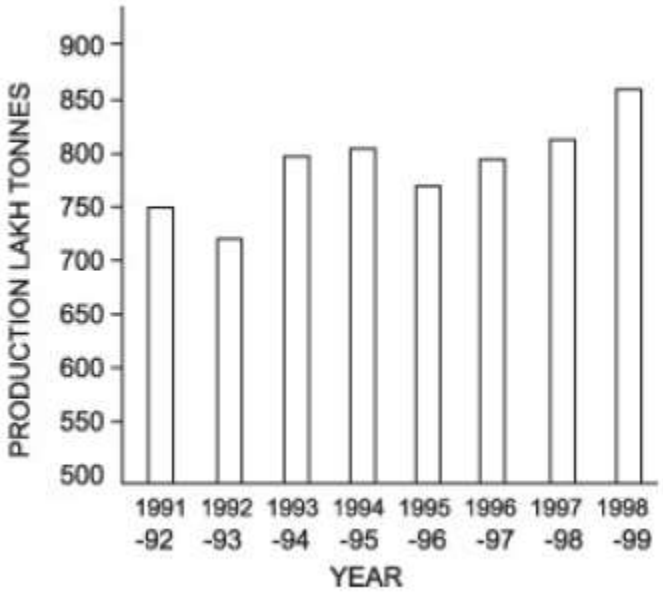
Vicente Fox Quesada, RSerafO is a Mexican businessman and politician who served as the 55th President of Mexico from 1 December 2000 to 30 November 2006.

Hugo Rafael Chávez Frías was a Venezuelan politician who was President of Venezuela from 1999 to 2013.

Maria Gloria Macaraeg Macapagal Arroyo CYC is a Filipino professor and politician who served as the 14th President of the Philippines from 2001 until 2010

Andrés Pastrana Arango was the 30th President of Colombia from 1998 to 2002, following in the footsteps of his father, Misael Pastrana Borrero, who was president from 1970 to 1974

Q43



The annual agricultural production of a product for the period 1991-92 to 1998-99 is shown in the figure given above
Which one of the following is the product in Q ?
(a) Pulses
(b) Wheat
(c) Oilseeds
(d) Rice

Correct Answer is (d) Rice

Production of Wheat in 1000 Tonnes

1991	55134
1992	55690
1993	57210
1994	59840
1995	65470
1996	62097
1997	69350
1998	66350
1999	71288

The highest area under pulses was recorded at 26.28million ha during 2010–11, and the highest production at19.78 million tonnes during 2013–14.

Production of Rice

SL	Year	Area (Million Hectares)	Production (Million Tonnes)
1.	1990-91	42.69	74.29
2.	1991-92	42.65	74.68
3.	1992-93	41.78	72.86
4.	1993-94	42.54	80.30
5.	1994-95	42.81	81.81
6.	1995-96	42.84	76.98
7.	1996-97	43.43	81.74
8.	1997-98	43.45	82.53
9.	1998-99	44.80	86.03

Note: 1 Million = 10 Lakhs

Q44 Consider the following States :
I. Gujarat
II. Karnataka
III. Maharashtra
IV. Tamil Nadu.
The descending order of these States with reference to their level of Per Capita Net State Domestic Product is
(a) I, III, IV, II
(b) III, I, II, IV
(c) I, III, II, IV
(d) III, IV, I, II

Correct Answer is (d) III, IV, I, II

(` crore)

Sl. No.	State\UT	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
STATES												
1	Andhra Pradesh #	25959	28223	32961	39780	44376	50515	58733	64773	72301	81397	90517
2	Arunachal Pradesh	26721	28171	30132	34466	39726	51068	60961	71366	76370	85468	96199
3	Assam	16782	18396	19737	21290	24099	28383	33087	36320	38945	44263	49480
4	Bihar	7914	8223	9967	11051	13728	15457	19111	22582	26948	31199	36143
5	Chhattisgarh	18559	20117	24800	29385	34360	34366	41165	48366	53815	58547	64442
6	Goa	76968	84721	94882	108708	135966	149164	168024	211570	200514	224138	NA
7	Gujarat	32021	37780	43395	50016	55068	64097	77485	85979	93046	106831	NA
8	Haryana	37972	42309	49261	56917	67405	82037	93852	106320	119833	133427	147076
9	Himachal Pradesh	33348	36949	40393	43966	49903	58402	68297	75185	83899	92300	NA
10	Jammu & Kashmir	21734	23240	25059	27448	30212	33650	40089	46734	52386	59279	58888
11	Jharkhand	18510	1	Per Capita NSDP at current prices (2004-05 to 2014-15)				4721	36554	40238	46131	52147
12	Karnataka	26882	31239	35981	42419	48084	51364	62251	68053	77168	89545	101594
15	Maharashtra	36077	41965	49831	57760	62234	69765	84858	93282	103856	117091	129235
16	Manipur	18547	20251	21220	22820	24413	26621	28336	33695	37656	41573	NA
17	Meghalaya	23079	24885	28940	31602	36992	38819	43766	50316	54156	61548	69516
18	Mizoram	24662	26698	28764	32488	38582	42715	50956	53624	63413	76120	NA
19	Nagaland	30441	33792	36568	39985	46207	50263	55582	63781	70274	77529	85544
20	Odisha	17650	18846	22237	27735	31416	33029	39537	43463	49227	52559	59229
21	Punjab	33103	36199	41883	49380	55315	61805	69582	76895	84512	92350	99578
22	Rajasthan	18565	20275	24055	26882	31279	35254	44644	54637	60844	65974	72156
23	Sikkim	26690	30252	32199	36448	46983	90749	108972	130127	151395	176491	NA
24	Tamil Nadu	30062	35243	42288	47606	54137	64338	78473	89050	98628	112664	128366

Q45 Consider the following statements regarding the political parties in India:
I. The Representation of the People Act, 1951 provides for the registration of political parties.
II. Registration of political parties is carried out by the Election Commission.
III. A national level political party is one which is recognised in four or more States.

Which of these statements are correct ?
(a) I, only
(b) I and III
(c) II and IV
(d) I, II and III

Correct Answer is (d) I, II and III

Registration of political parties under section 29A of the Representation of the People Act, 1951. For the purpose of registration of any association or body of individual citizens of India as a political party, the association or body is required to make an application to the Election Commission of India giving therein full particulars required under sub-section(4) of Section 29A of the Representation of the People Act, 1951 and additional particulars required under the Registration of political parties (Furnishing of Additional Particulars) Order, 1992.

India has very diverse multi party political system. As on April 13, 2018 there are three types of political parties in India i.e. national parties (7), state recognized party (24) and registered unrecognised parties (2044). All the political parties which wish to contest local, state or national elections are required to be registered by the Election Commission of India (ECI).

National Party:

A registered party is recognised as a National Party only if it fulfils any one of the following three conditions:

1. If a party wins 2% of seats in the Lok Sabha (as of 2014, 11 seats) from at least 3 different States.

2. At a General Election to Lok Sabha or Legislative Assembly, the party polls 6% of votes in four States in addition to 4 Lok Sabha seats.

3. A party is recognised as a State Party in four or more States.

Q46 Match List I with List II and select the correct answer using the codes given below the Lists :
List I - List II
(Institute) - (Location)
I. Central Institute of Medicinal and Aromatic Plants - (A) Chandigarh
II. Centre for DNA Finger Printing and Diagnostics - (B) Hyderabad
III. Institute of Microbial Technology - (C) New Delhi
IV. National Institute of Immunology - (D) Lucknow
Codes:
(a) I-B, II-D, III-A, IV-C
(b) I-D, II-B, III-A, IV-C
(c) I-B, II-D, III-C, IV-A
(d) I-D, II-B, III-C, IV-A

Correct Answer is (b) I-D, II-B, III-A, IV-C

Central Institute of Medicinal and Aromatic Plants is a research institute of Council of Scientific and Industrial Research with its headquarter in Lucknow. It is engaged in the field of science and business of medicinal and aromatic plants.

The Centre for DNA Fingerprinting and Diagnostics is an Indian Biotechnology research centre, located in Hyderabad, India, operated by the Department of Biotechnology, Ministry of Science and Technology, Government of India.

The Institute of Microbial Technology, based in Chandigarh, India, is one of the constituent establishments of the Council of Scientific & Industrial Research.

National Institute of Immunology

Address: Aruna Asaf Ali Marg, Jawaharlal Nehru University, New Delhi, Delhi 110067

Q47 Which one of the following animals was NOT represented on the seals and terracotta art of the Harappan culture ?
(a) Cow
(b) Elephant
(c) Rhinoceros
(d) Tiger

Correct Answer is (a) Cow

Important Seals:

The Pashupati Seal: This seal depicts a yogi, probably Lord Shiva. A pair of horns crown his head. He is surrounded by a rhino, a buffalo, an elephant and a tiger. Under his throne are two deer. This seal shows that Shiva was worshipped and he was considered as the Lord of animals (Pashupati).

The Unicorn Seal: The unicorn is a mythological animal. This seal shows that at a very early stage of civilization, humans had produced many creations of imagination in the shape of bird and animal motifs that survived in later art.

The Bull Seal: This seal depicts a humped bull of great vigour. The figure shows the artistic skill and a good knowledge of animal anatomy.

Q48 The range of Agni-II missile is around
(a) 500 km
(b) 2000 km
(c) 3500 km
(d) 5000 km

Correct Answer is (b) 2000 km

The 20-mt-long Agni-II ballistic missile has a launch weight of 17 tonne and can carry a payload of 1,000kg over a distance of 2,000km.

Q49 The approximate age of the Aravallis range is
(a) 370 million years
(b) 470 million years
(c) 570 million years
(d) 670 million years

Correct Answer is (a) 370 million years

Aravalli is consider as oldest range of mountains in India because It is the oldest.

Geologists estimate age of Aravalli range about 350m years ago.

Q50 Consider the following :
I. Market borrowing
II. Treasury bills
III. Special securities issued to RBI
Which of these is/are component(s) of internal debt ?
(a) I only
(b) I and II
(c) II only
(d) I, II and III

Correct Answer is (d) I, II and III

Internal debt is that part of the total debt that is owed to lenders within the country. It is the money the government borrows from its own citizens. The government borrows by issuing the Government Bonds and T-Bills (Treasury Bills). It also includes the Market borrowings by the government. The government bonds and T-Bills are traded in the market which is also known as Gilt Market.Please note that when government borrows from the domestic sources, the increase in inflation is less in comparison to simply printing the money and increased the more liquid forms of wealth (i.e., the money supply).

What is a Government Security (G-Sec)?
1.2 A Government Security (G-Sec) is a tradeable instrument issued by the Central Government or the State Governments. It acknowledges the Government's debt obligation. Such securities are short term (usually called treasury bills, with original maturities of less than one year) or long term (usually called Government bonds or dated securities with original maturity of one year or more). In India, the Central Government issues both, treasury bills and bonds or dated securities while the State Governments issue only bonds or dated securities, which are called the State Development Loans (SDLs). G-Secs carry practically no risk of default and, hence, are called risk-free gilt-edged instruments.

Q51 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)
I. Article 54 - (A) Election of the President of India
II. Article 75 - (B) Appointment of the Prime Minister and Council of Ministers
III. Article 155 - (C) Appointment of the Governor of a State
IV. Article 164 - (D) Appointment of the Chief Minister and Council of Ministers of a State

(E) Composition of Legislative Assemblies

Codes:
(a) I-A, II-B, III-C, IV-D
(b) I-A, II-B, III-D, IV-E
(c) I-B, II-A, III-C, IV-E
(d) I-B, II-A, III-D, IV-C

Correct Answer is (a) I-A, II-B, III-C, IV-D

Article 54 in The Constitution Of India 1949
54. Election of President 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

Article 75 in The Constitution Of India 1949
75. Other provisions as to Ministers
(1) 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
(2) The Minister shall hold office during the pleasure of the President
(3) The Council of Ministers shall be collectively responsible to the House of the People
(4) Before a Minister enters upon his office, the President shall administer to him the oaths of office and of secrecy according to the forms set out for the purpose in the Third Schedule
(5) A Minister who for any period of six consecutive months is not a member of either House of Parliament shall at the expiration of that period cease to be a Minister

Article 155 in The Constitution Of India 1949
155. Appointment of Governor The Governor of a State shall be appointed by the President by warrant under his hand and seal.

Article 164 in The Constitution Of India 1949
164. Other provisions as to Ministers
(1) The chief Minister shall be appointed by the Governor and the other Ministers shall be appointed by the Governor on the advice of the Chief Minister, and the Ministers shall hold office during the pleasure of the Governor: Provided that in the State of Bihar, Madhya Pradesh and Orissa, there shall be a

Minister in charge of tribal welfare who may in addition be in charge of the welfare of the Scheduled Castes and backward classes or any other work
(2) The Council of Ministers shall be collectively responsible to the Legislative Assembly of the State
(3) Before a Minister enters upon his office, the Governor shall administer so him the oaths of office and of secrecy according to the forms set out for the purpose in the Third Schedule
(4) A Minister who for any period of six consecutive months is not a member of the Legislature of the State shall at the expiration of that period cease to be a Minister

Q52 Match List I with List II and select the correct answer using the codes given below the Lists :
List I - List II
(Important Day) - (Date)
I. World Environment Day - (A) March 20
II. World Forestry Day - (B) June 5
III. World Habitat Day - (C) September 16
IV. World Ozone Day - (D) October 3

(E) December 10
Codes:
(a) I-B, II-A, III-D, IV-E
(b) I-A, II-B, III-D, IV-C
(c) I-A, II-B, III-C, IV-D
(d) I-B, II-A, III-D, IV-C

Correct Answer is (d) I-B, II-A, III-D, IV-C

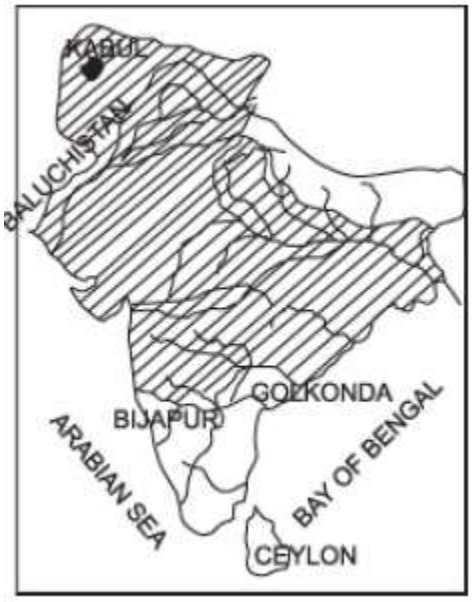
World Environment Day is celebrated on the 5th of June every year, and is the United Nation's principal vehicle for encouraging awareness and action for the protection of our environment.

The International Day of Forests was established on the 21st day of March, by resolution of the United Nations General Assembly on November 28, 2012.

World Habitat Day is observed every year on the first Monday of October throughout the world. It was officially designated by the United Nations and first celebrated in 1986.

September 16 was designated by the United Nations General Assembly as the International Day for the Preservation of the Ozone Layer.

Q53



The shaded area in the above map shows the empire of
(a) Ala-ud-din Khilji
(b) Mohammad Tughlaq
(c) Shah Jahan
(d) Aurangzeb

Aurangzeb, also spelled Aurangzib, Arabic Awrangzib, kingly title ?Alamgir, original name Mu?i al-Din Muhammad, (born November 3, 1618, Dhod, Malwa [India]—died March 3, 1707), emperor of India from 1658 to 1707, the last of the great Mughal emperors. Under him the Mughal Empire reached its greatest extent, although his policies helped lead to its dissolution.

Q54 Consider the following statements regarding Reserve Bank of India :
I. It is a banker to the Central Government.
II. It formulates and administers monetary policy.

III. It acts as an agent of the Government in respect of India's membership of IMF.
IV. It handles the borrowing programme of Government of India.
Which of these statements are correct ?
(a) I and II
(b) II, III and IV
(c) I, II, III and IV
(d) III and IV

Correct Answer is (c) I, II, III and IV

The Reserve Bank of India (RBI) is India's central banking institution, which controls the monetary policy of the Indian rupee. It commenced its operations on 1 April 1935 in accordance with the Reserve Bank of India Act, 1934. The original share capital was divided into shares of 100 each fully paid, which were initially owned entirely by private shareholders. Following India's independence on 15 August 1947, the RBI was nationalised on 1 January 1949.
The RBI plays an important part in the Development Strategy of the Government of India. It is a member bank of the Asian Clearing Union. The general superintendence and direction of the RBI is entrusted with the 21-member central board of directors: the governor; 4 deputy governors; 2 finance ministry representatives (usually the Economic Affairs Secretary and the Financial Services Secretary); 10 government-nominated directors to represent important elements of India's economy; and 4 directors to represent local boards headquartered at Mumbai, Kolkata, Chennai and New Delhi. Each of these local boards consists of 5 members who represent regional interests, the interests of co-operative and indigenous banks.

7 Major Functions of Reserve Bank of India

1. Monopoly Power of Note Issue
2. Bankers' Bank
3. Banker to the Government
The RBI also acts as the agent of the Gov-ernment in respect of membership of the IMF and the World Bank.
4. Controller of Credit
5. Exchange Management and Control
6. Miscellaneous Functions
7. Promotional and Developmental Functions

Q55 Consider the following statements :
I. Most magmas are a combination of liquid, solid and gas.
II. Water vapour and carbon dioxide are the principal gases dissolved in a magma.
III. Basaltic magma is hotter than the silicic magma.
IV. The magma solidified between sedimentary rocks in a horizontal position is known as dike.
Which of these statements are correct ?
(a) I, II and III
(b) II, III and IV
(c) I and IV

(d) I, II and IV

Correct Answer is (a) I, II and III

Magma (from Ancient Greek μ??μa (mágma) meaning "thick unguent") is a mixture of molten or semi-molten rock, volatiles and solids that is found beneath the surface of the Earth, and is expected to exist on other terrestrial planets and some natural satellites. Besides molten rock, magma may also contain suspended crystals, dissolved gas and sometimes gas bubbles. Magma often collects in magma chambers that may feed a volcano or solidify underground to form an intrusion. Magma is capable of intruding into adjacent rocks (forming igneous dikes and sills), extrusion onto the surface as lava, and explosive ejection as tephra, or fragmented rock, to form pyroclastic rock.

The principal components of volcanic gases are water vapor (H2O), carbon dioxide (CO2), sulfur either as sulfur dioxide (SO2) (high-temperature volcanic gases) or hydrogen sulfide (H2S) (low-temperature volcanic gases), nitrogen, argon, helium, neon, methane, carbon monoxide and hydrogen.

Felsic or silicic lavas such as rhyolite and dacite typically form lava spines, lava domes or "coulees" (which are thick, short lava flows) and are associated with pyroclastic (fragmental) deposits. Most silicic lava flows are extremely viscous, and typically fragment as they extrude, producing blocky autobreccias. The high viscosity and strength are the result of their chemistry, which is high in silica, aluminium, potassium, sodium, and calcium, forming a polymerized liquid rich in feldspar and quartz, and thus has a higher viscosity than other magma types. Felsic magmas can erupt at temperatures as low as 650 to 750 °C (1,202 to 1,382 °F). Unusually hot (>950 °C; >1,740 °F) rhyolite lavas, however, may flow for distances of many tens of kilometres, such as in the Snake River Plain of the northwestern United States.

Mafic or basaltic lavas are typified by their high ferromagnesian content, and generally erupt at temperatures in excess of 950 °C (1,740 °F). Basaltic magma is high in iron and magnesium, and has relatively lower aluminium and silica, which taken together reduces the degree of polymerization within the melt. Owing to the higher temperatures, viscosities can be relatively low, although still thousands of times higher than water.

In geology, a sill is a tabular sheet intrusion that has intruded between older layers of sedimentary rock, beds of volcanic lava or tuff, or along the direction of foliation in metamorphic rock.

Q56 Consider the following schemes launched by the Union Government :
I. Antyodaya Anna
II. Gram Sadak Yojana
III. Sarvapriya
IV. Jawahar Gram Samriddhi Yojana.
Which of these were announced in the year 2000 ?
(a) I and II
(b) II and IV
(c) III and IV
(d) I, II and III

Correct Answer is (d) I, II and III

Antyodaya Anna Yojana (AAY) is a Government of India sponsored scheme to provide highly subsidised food to millions of the poorest families. This scheme was brain child of then union food and civil supplies minister, Shanta Kumar. It was launched by the [NDA] government on 25 December 2000 and first implemented in the Indian state of Rajasthan.

The Pradhan Mantri Gram Sadak Yojana (PMGSY) (IAST: Pradhan Mantri Gram Sa?ak Yojana) is a nationwide plan in India to provide good all-weather road connectivity to unconnected villages. Of 178,000 (1.7 lakh) habitations with a population of above 500 in the plains and above 250 in the hilly areas planned to be connected by all-weather roads, 82% were already connected by December 2017 and work-in-progress on the remaining 47,000 habitations was on-track for completion by March 2019 (c. December 2017).
This Centrally Sponsored Scheme was introduced in 2000 by the then-prime minister of India Atal Behari Vajpayee.

NEW DELHI, JULY 21, 2000 The Union Government today launched a nationwide scheme to provide 11 essential items including pulses, salt and edible oils through its public distribution network at a price lower than the market price.

Under the scheme called `Sarvpriya', 11 items of day-to-day use such as pulses, salt, edible oils and soap will be supplied through 4.5 lakh fair price outlets across the country at a cost lower than the current market price,'' the Union Minister for Consumers' Affairs and Civil Supply, Mr. Shanta Kumar told mediapersons after the function.

Other items to be retailed under the scheme include tea, detergent cake, exercise notebooks and toothpaste, he said adding `Sarvpriya' would be operated through the National Consumer Co- operative Federation (NCCF).

Jawahar Gram Samridhi Yojana (JGSY) is the restructured, streamlined and comprehen-sive version of the erstwhile Jawahar Rozgar Yojana (JRY). Launched on 1st April 1999, it has been designed to improve the quality of life of the rural poor by providing them additional gainful employment.

Q57 Match List I with List II and select the correct answer using the codes given below the Lists :
List I - List II
(Books) - (Author)
I. The Struggle in My Life - (A) Lech Walesa
II. The Struggle and the Triumph - (B) Nelson Mandela
III. Friends and Foes - (C) Leonid Brezhnev
IV. Rebirth - (D) Zulfikar Ali Bhutto

(E) Sheikh Mujibur Rehman

Codes:

(a) I-A, II-B, III-E, IV-C
(b) I-B, II-A, III-E, IV-C
(c) I-A, II-B, III-C, IV-D
(d) I-B, II-A, III-C, IV-D

Correct Answer is (a) I-A, II-B, III-E, IV-C

Mandela: The Struggle Is My Life is a documentary co-produced by Sky News and Sky Vision following the life of Nelson Mandela.

The Struggle and the Triumph
Book by Lech Walesa

From the time he founded Solidarity in 1980 to the historic moment in December 1990 when he took the oath of office as the first freely elected president of Poland in half a century, Lech Walesa has had all eyes upon him.

Friends and Foes written by Sheikh Mujibur Rahman

The Brezhnev's trilogy (1978–79) was a series of three memoirs published under name of Leonid Brezhnev:
The Small Land
Rebirth
Virgin Lands
As a part of the publicity campaign, Brezhnev was immediately given the Lenin Prize, the highest Soviet literary award, after publication of the trilogy. The books were also available as a Phonograph recording and there were plans to stage it in theatre, where Brezhnev's favourite actor Vyacheslav Tikhonov would have performed the role of Brezhnev.

Q58 Hoysala monuments are found in
(a) Hampi and Hospet
(b) Halebid and Belur
(c) Mysore and Bangalore
(d) Sringeri and Dharwar

Correct Answer is (b) Halebid and Belur

List of notable temples from the Hoysala era

Name	Location	Deity
Chennakesava	Belur	Vishnu
Hoysaleswara	Halebidu	Shiva
Basadi complex	Halebidu	Parshvanatha, Shantinatha, Adinatha
Rameshvara	Koodli	Shiva

Q59 Consider the following statements regarding the earthquakes :
I. The intensity of earthquake is measured on Mercalli scale.
II. The magnitude of an earthquake is a measure of energy released.
III. Earthquake magnitudes are based on direct measurements of the amplitude of seismic waves.
IV. In the Richter scale, each whole number demonstrates a hundredfold increase in the amount of energy released.
"Which of these statements are correct ?
(a) I, II and III
(b) II, III and IV
(c) I and IV
(d) I and III

Correct Answer is (d) I and III

Another way to measure the strength of an earthquake is to use the Mercalli scale. Invented by Giuseppe Mercalli in 1902, this scale uses the observations of the people who experienced the earthquake to estimate its intensity. The Mercalli scale isn't considered as scientific as the Richter scale, though.

The severity of an earthquake can be expressed in several ways. The magnitude of an earthquake, usually expressed by the Richter Scale, is a measure of the amplitude of the seismic waves. The moment magnitude of an earthquake is a measure of the amount of energy released - an amount that can be estimated from seismograph readings. The intensity, as expressed by the Modified Mercalli Scale, is a subjective measure that describes how strong a shock was felt at a particular location.

The Richter Scale, named after Dr. Charles F. Richter of the California Institute of Technology, is the best known scale for measuring the magnitude of earthquakes. The scale is logarithmic so that a recording of 7, for example, indicates a disturbance with ground motion 10 times as large as a recording of 6. A quake of magnitude 2 is the smallest quake normally felt by people. Earthquakes with a Richter value of 6 or more are commonly considered major; great earthquakes have magnitude of 8 or more on the Richter scale.

Q60 Which Article of the Constitution provides that it shall be the endeavour of every State to provide adequate facility for instruction in the mother tongue at the primary stage of eduction ?
(a) Article 349
(b) Article 350
(c) Article 350-A
(d) Article 351

Correct Answer is (c) Article 350-A

Article 350A Facilities for instruction in mother-tongue at primary stage.

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.

Q61 Who among the following Indian rulers established embassies in foreign countries on modern lines ?
(a) Haider Ali
(b) Mir Qasim
(c) Shah Alam II
(d) Tipu Sultan

Correct Answer is (d) Tipu Sultan

Tipu Sultan established embassies in Egypt, France and Turkey on modern lines.

Q62 A great landslide caused by an earthquake killed hundreds of people in January 2001 near
(a) San Salvador
(b) San Jose
(c) Managua
(d) Guatemala City

Correct Answer is (a) San Salvador

The January 2001 El Salvador earthquake struck El Salvador on January 13, 2001 at 17:33:34 UTC. The 7.6 (later estimated to be 7.7 or 7.9) quake struck with the epicenter 60 miles (100 km) SW of San Miguel, El Salvador (13.04°N 88.66°W) at a depth of 60 km. At least 944 people were killed, 5,565 injured, 108,261 houses destroyed — with another 169,692 houses damaged — and more than 150,000 buildings were damaged in El Salvador.

Q63

In the above map, the black marks show the distribution of
(a) Asbestos
(b) Gypsum
(c) Limestone
(d) Mica

Correct Answer is (c) Limestone

Q64 Consider the following factors regarding an industry :
I. Capital investments
II. Business turnover
III. Labour force
IV. Power consumption.
Which of these determine the nature a size of the industry ?
(a) I, III and IV

(b) I, II and IV
(c) II, III and IV
(d) II and III

Correct Answer is (a) I, III and I

Concept of Business Size:

Business size refers to the scale of business operations; which determines the level of production and consequently the volume of sales.

A business may be carried on a large scale or a moderate scale or a small scale.

Some of the popular measures used to judge the business size are:

1. Net worth

2. Total assets

3. Volume of production/sales

4. Number of workers employed, in case of labour intensive industries

5. Capacity of the plant and machinery, in case of capital intensive industries; and so on.

Q65 Which of the following pairs is NOT correctly matched ?
(a) India's first Technicolour film ... Jhansi Ki Rani
(b) India's first 3-D film ... My Dear Kuttichat
(c) India's first insured film ... Taal
(d) India's first actress to win the Bharat Ratna ... Meena Kumari

Correct Answer is (d) India's first actress to win the Bharat Ratna ... Meena Kumari

Besides its title, the opening credits of Sohrab Modi's 1953 film Jhansi Ki Rani features one other accreditation in three languages—the phrase "Color by Technicolor". It is ironic that despite that unassailable claim to fame (as one of the first technicolor films in India), only a B/W pan-and-scan version of the film survives. Starring Mehtab as the titular queen, and Modi as her mentor Rajguru, the film covers several of the signposts historically associated with the feisty architect of a valiant military campaign against the British in 1858.

The first Indian 3D movie My Dear Kuttichathan, which released 27 years ago and was later dubbed in Hindi as Chhota Chetan.

Taal (1998) - First film to be insured

Subhash Ghai is credited with starting the trend of insuring movies in India and Taal became the first ever Bollywood film to be insured for a whopping sum of Rs. 110 million! Almost 85 years after the release of first Hindi movie, the Indian film industry addressed the demand for risk cover against any mishap prior to the release of the film and insuring movies quickly became a trend.

There are only five female recipients who symbolized exceptional service of the highest order in any field of human endeavour.

Indira Gandhi
Former Prime Minister of India was conferred the Bharat Ratna in the year 1971.

A catholic nun and the founder of the Missionaries of Charity, Mother Teresa was awarded the Bharat Ratna in 1980. She was also given Nobel peace prize the year before, i.e. 1979.

Aruna Asaf Ali was an Indian independence activist and is widely remembered for hoisting the Indian National Congress flag at the Gowalia Tank maidan in Mumbai during the Quit India Movement. She was given the Bharat Ratna in 1997. She was also given the second highest civilian honour, the Padma Vibhushan in the year 1992.

M.S. Subbulakshmi is not only known to be one of the best Carnatic vocalist the country has ever produced but also is the first musician ever to be awarded the Bharat Ratna in the year 1998.

Known for her melodious voice, Lata Mangeshkar is also fondly referred to as the 'Nightingale of India'. Lata Mangeshkar was awarded the Bharat Ratna in 2001.

Q66 Match List I with List II and select the correct answer using the codes given below the Lists :
List I - List II
(Dancer) - (Dance)
I. Kalamandalam Kshemavaty - (A) Kathakali
II. Kottakkal Sivaraman - (B) Manipuri
III. Lakshmi Viswanathan - (C) Mohiniyattam
IV. N. Madhabi Devi - (D) Bharata Natyam
Codes:
(a) I-A, II-C, III-B, IV-D
(b) I-C, II-A, III-D, IV-B
(c) I-A, II-C, III-D, IV-B
(d) I-C, II-A, III-B, IV-D

Correct Answer is (b) I-C, II-A, III-D, IV-B

Kalamandalam Kshemavathy is a Mohiniyattam dancer from Thrissur, Kerala.

Kottakkal Sivaraman was a performing artiste who revolutionised the portrayal of female roles in Kathakali, the classical dance-drama from Kerala in southern India.

Lakshmi Vishwanathan is a leading exponent of Bharatanatyam, the classical dance of South India. She has been described as a "poetic dancer", and a "dancer's dancer".

Born in 1926 in Kiyamgei village in Manipur, Shrimati Ningom- bam Madhabi Devi received training in Manipuri Ras and Nata-sankirtana from an early age. Prominent among her several teachers are Ibemi Devi, Louren Tombi Devi, Kshetri Tombi, Ibomcha Singh, Kh. Lokeswar Singh, N. Rasdhari Singh, and Kh. Gulapi Singh. Shrimati N. Madhabi Devi is a renowned sutradhari of the Manipuri Ras tradition and a well-known Nata-sankirtana artist. She has been a leading singer and performer for many years, and has performed at many places in the country.

Q67 Match List I with List II and select the correct answer using the codes given below the Lists :
List I - List II
(Bhakti Saint) - (Profession)
I. Namdev - (A) Barber
II. Kabir - (B) Weaver
III. Ravidas - (C) Tailor
IV. Sena - (D) Cobbler
Codes:
(a) I-B, II-C, III-A, IV-D
(b) I-C, II-B, III-D, IV-A
(c) I-C, II-B, III-A, IV-D
(d) I-B, II-C, III-D, IV-A

Correct Answer is (b) I-C, II-B, III-D, IV-A

According to Mahipati, a hagiographer of the 18th century, Namdev's parents were Damashet and Gonai, a childless elderly couple whose prayers for parenthood were answered and involved him being found floating down a river. As with various other details of his life, elements such as this may have been invented to sidestep issues that might have caused controversy. In this instance, the potential controversy was that of caste or, more specifically, his position in the Hindu varna system of ritual ranking. He was born into what is generally recognised as a Shudra caste, variously recorded as shimpi (tailor) in the Marathi language and as chimpi (calico-printer) in northern India.

Kabir also known as Kabir Das and Kabira, was born and brought up in a Muslim weavers family by Niru and Nima. He was a mystic poet and a musician and was one of the important saints of Hinduism and also considered a Sufi by Muslims. He is respected by Hindus, Muslims and Sikhs.

Guru Ravidas was a North Indian mystic poet-sant of the bhakti movement during the 14th to 15th century CE. Venerated as a Guru (teacher) in the region of Punjab, Uttar Pradesh, Rajasthan, Maharashtra and Madhya Pradesh the devotional songs of Ravidas made a lasting impact upon the bhakti movement. He was a poet-saint, social reformer and a spiritual figure. He is considered as the founder of 21st-century Ravidassia religion, by a group who previously were associated with Sikhism.

The life details of Ravidas are uncertain and contested. Most scholars believe he was born about 1398 CE, in a family that worked with dead animals skin to produce leather products.Tradition and medieval era texts state Ravidas was one of the disciples of the brahmin bhakti saint-poet Ramananda.

Sena Nhavi (literally Sena the barber, a name often used in English sources), also known as Sant Sena,Sena, Sen, is a Hindu saint-poet (sant-kavi) of the Varkari sect dedicated to the god Vithoba.in Marathi.

Sena was a barber (nhavi), a "caste" (see Bara Balutedar) and worked in the service of the king of Bandhavgarh. He gave up his profession and created devotional abhangas in praise of the god Vithoba.

Q68 The most appropriate measure of a country's economic growth is its
(a) Gross Domestic Product
(b) Net Domestic Product
(c) Net National Product
(d) Per Capita Real Income

Correct Answer is (c) Net National Product

Economists and statisticians use several different methods to track economic growth. The most well-known and frequently tracked metric is gross domestic product (GDP). Over time, however, some economists have highlighted limitations and biases in GDP calculation. Organizations such as the Bureau of Labor Statistics (BLS) and the Organization for Economic Co-operation and Development (OECD) also keep relative productivity metrics to gauge economic potential. Some suggest measuring economic growth through increases in the standard of living, although this can be tricky to quantify.

Gross Domestic Product
Gross domestic product is the logical extension of measuring economic growth in terms of monetary expenditures. If a statistician wants to understand the productive output of the steel industry, for example, he needs only to track the dollar value of all of the steel that entered the market during a specific period.

The net domestic product (NDP) equals the gross domestic product (GDP) minus depreciation on a country's capital goods.
Net domestic product accounts for capital that has been consumed over the year in the form of housing, vehicle, or machinery deterioration. The depreciation accounted for is often referred to as "capital consumption allowance" and represents the amount of capital that would be needed to replace those depreciated assets.

Net national product (NNP) refers to gross national product (GNP), i.e. the total market value of all final goods and services produced by the factors of production of a country or other polity during a given time period, minus depreciation. Similarly, net domestic product (NDP) corresponds to gross domestic product (GDP) minus depreciation. Depreciation describes the devaluation of fixed capital through wear and tear associated with its use in productive activities.

In national accounting, net national product (NNP) and net domestic product (NDP) are given by the two following formulas:
NNP=GNP-Depreciation
NDP=GDP-Depreciation

Q69 The Supreme Court of India tenders advice to the President on a matter of law or fact
(a) on its own initative
(b) only if he seeks such advice
(c) only if the matter relates to the Fundamental Rights of citizens
(d) only if the issue poses a threat to the unity and integrity of the country

Correct Answer is (b) only if he seeks such advice

Advisory Role: The Supreme Court has an advisory jurisdiction in offering its opinion an any question of law or fact of public importance as may be referred to it for consideration by the President.

Q70 Falun Gong is
(a) an ethnic minority in Eastern China
(b) an insurgency outfit in Western China
(c) a pro-democracy movement in China
(d) a spiritual movement in China

Correct Answer is (d) a spiritual movement in China

Falun Gong or Falun Dafa is a modern Chinese spiritual practice that combines meditation and qigong exercises with a moral philosophy centered on the tenets of truthfulness, compassion, and forbearance.

Q71 The Hunter Commission was appointed after the
(a) Black hole incident
(b) Jalianwallabagh massacre
(c) Uprising of 1857
(d) Partition of Bengal

Correct Answer is (b) Jalianwallabagh massacre

The Jallianwala Bagh massacre, also known as the Amritsar massacre, took place on 13 April 1919 when troops of the British Indian Army under the command of Colonel Reginald Dyer fired rifles into a crowd of Indians, who had gathered in Jallianwala Bagh, Amritsar, Punjab.

On 14 October 1919, after orders issued by the Secretary of State for India, Edwin Montagu, the Government of India announced the formation of a committee of inquiry into the events in Punjab. Referred to as the Disorders Inquiry Committee, it was later more widely known as the Hunter Commission. It was named after the chairman, William, Lord Hunter, former Solicitor-General for Scotland and Senator of the College of Justice in Scotland. The stated purpose of the commission was to

"investigate the recent disturbances in Bombay, Delhi and Punjab, about their causes, and the measures taken to cope with them".

Q72 Who amongst the following was the first to state that the Earth was spherical?
(a) Aristotle
(b) Copernicus
(c) Ptolemy
(d) Strabo

Correct Answer is (a) Aristotle

For thousands of years the earth was thought to be anything but a sphere by ancient people. The Mesopotamians and Egyptians saw the earth as being flat, as did the earliest Greeks. It was the Greeks, however, that changed the view of the earth and set forth a series of theories that proved the earth was round.

The earliest of Greek philosophers to comment on the earth's shape being round were very vague and offered little of an explanation. Plato was a prime example of this, telling his in Athens the earth was a sphere shape but offering no explanation of how. It was his greatest pupil, Aristotle, that would offer the first true explanation of how he believed the earth was round.

In Aristotle's "On the Heavens" he states that the earth was spherical due to the position of the stars and constellations seeming to change as a person traveled either north or south. Some travellers, he pointed out, noticed stars and constellations in Egypt and Cyprus unique to their sky. He also pointed out that the earth must be spherical because of the shape of the earth's shadow on the moon during a lunar eclipse. The shadow "eclipses the outline is always curved: and, since it is the interposition of the earth that makes the eclipse, the form of this line will be caused by the form of the earth's surface, which is therefore spherical."

Q73 Match List I with List II and select the correct answer using the codes given below the Lists :
List I - List II
(Term) - (Explanation)
I. Fiscal deficit - (A) Excess of Total Expenditure over Total Receipts
II. Budget deficit - (B) Excess of Revenue Expenditure over Revenue Receipts
III. Revenue deficit - (C) Excess of Total Expenditure over Total Receipts less borrowings
IV. Primary deficit - (D) Excess of Total Expenditure over Total Receipts less borrowings and Interest Payments
Codes:
(a) I-C, II-A, III-B, IV-D
(b) I-D, II-C, III-B, IV-A
(c) I-A, II-C, III-B, IV-D
(d) I-C, II-A, III-D, IV-B

Correct Answer is (a) I-C, II-A, III-B, IV-D

A fiscal deficit occurs when a government's total expenditures exceed the revenue that it generates, excluding money from borrowings.

Budgetary deficit is the difference between all receipts and expenses in both revenue and capital account of the government.

Description: Budgetary deficit is the sum of revenue account deficit and capital account deficit. If revenue expenses of the government exceed revenue receipts, it results in revenue account deficit. Similarly, if the capital disbursements of the government exceed capital receipts, it leads to capital account deficit. Budgetary deficit is usually expressed as a percentage of GDP.

A revenue deficit occurs when the net income generated, revenues less expenditures, falls short of the projected net income. This happens when the actual amount of revenue received and/or the actual amount of expenditures do not correspond with budgeted revenue and expenditure figures.

Primary deficit is one of the parts of fiscal deficit. While fiscal deficit is the difference between total revenue and expenditure, primary deficit can be arrived by deducting interest payment from fiscal deficit. Interest payment is the payment that a government makes on its borrowings to the creditors.

Q74 Consider the following organisations :
I. International Bank for Reconstruction and Development
II. International Finance Corporation
III. International Fund for Agricultural Development
IV. International Monetary Fund
Which of these are agencies of the United Nations ?
(a) I and II
(b) II and III
(c) III and IV
(d) I, II, III and IV

Correct Answer is (c) III and IV

The International Bank for Reconstruction and Development (IBRD) is an international financial institution that offers loans to middle-income developing countries. The IBRD is the first of five member institutions that compose the World Bank Group and is headquartered in Washington, D.C., United States. It was established in 1944 with the mission of financing the reconstruction of European nations devastated by World War II. The IBRD and its concessional lending arm, the International Development Association, are collectively known as the World Bank as they share the same leadership and staff.

The International Finance Corporation (IFC) is an international financial institution that offers investment, advisory, and asset-management services to encourage private-sector development in developing countries. The IFC is a member of the World Bank Group and is headquartered in Washington, D.C.. It was established in 1956, as the private-sector arm of the World Bank Group, to advance economic development by investing in for-profit and commercial projects for poverty reduction

and promoting development.

The International Fund for Agricultural Development is an international financial institution and a specialised agency of the United Nations dedicated to eradicating poverty and hunger in rural areas of developing countries.

The International Monetary Fund (IMF) is an international organization headquartered in Washington, D.C., consisting of "189 countries working to foster global monetary cooperation, secure financial stability, facilitate international trade, promote high employment and sustainable economic growth, and reduce poverty around the world." Formed in 1945 at the Bretton Woods Conference primarily by the ideas of Harry Dexter White and John Maynard Keynes, it came into formal existence in 1945 with 29 member countries and the goal of reconstructing the international payment system. It now plays a central role in the management of balance of payments difficulties and international financial crises.

Its Parent organization is United Nations

Q75 Match List I with List II and select the correct answer using the codes given below the Lists :
List I - List II
(Person) - (Achievement)
I. Deep Sen Gupta - (A) India's youngest International Master in the Sangli International Chess Tournament, 2000
II. P. Hari krishna - (B) The first Indian ever to win a gold in discuss in the World Athletic Championship in Santiago, 2000
III. Seema Antil - (C) Won the title in the Asian Junior Chess Tournament in Mumbai, 2000
IV. Tejas Bakre - (D) Won the Under-12 title in the World Youth Chess Festival in Oropesa, 2000
Codes:
(a) I-D, II-C, III-B, IV-A
(b) I-B, II-D, III-A, IV-C
(c) I-D, II-A, III-B, IV-C
(d) I-B, II-A, III-C, IV-D

Correct Answer is (c) I-D, II-A, III-B, IV-C

Deep Sengupta (born 30 June 1988) is a chess player from Jharkhand, India, who now resides in Kasba. He is India's 22nd grandmaster.
He started chess with the Chakradharpur Chess Academy, and won the World Youth Chess Championship (boys) in 2000.

Pentala Harikrishna (born 10 May 1986) is a chess Grandmaster from Guntur, Andhra Pradesh, India. He became the youngest grandmaster from India on 12 September 2001, a record now held by Parimarjan Negi. He was Commonwealth Champion in 2001, World Junior Champion in 2004 and Asian Individual Champion in 2011.

Seema Antil was born in Khewda village of Sonipat district in Haryana. Her sporting career began at the age of 11 years as a hurdler and a long-jumper, but later took to discus throw. Her gold medal win at the World Junior Championships in 2000 in Santiago earned her the nickname .'Millennium Child'.

Tejas Bakre is another player playing with a fire in his eye. His games show certain determination. He squandered golden chance of beating Ganguly when the latter was helpless against Tejas' spirited assault. But Tejas, who won Asian Sub-junior title in the same hall three years ago, recovered himself with two good games and set up a clash with Harikrishna which should decide the title.

Q76 Under the Permanent Settlement, 1793, the zamindars were required to issue pattas to the farmers which were not issued by many of the zamindars. The reason was
(a) the zamindars were trusted by the farmers
(b) there was no official check upon the zamindars
(c) it was the responsibility of the British Government
(d) the farmers were not interested in getting pattas

Correct Answer is (b) there was no official check upon the zamindars

According to the Permanent Land revenue settlement the Zamindars were recognised as the permanent owners of the land. They were given instruction to pay 89% of the annual revenue to the state and were permitted to enjoy 11% of the revenue as their share. They were left independent in the internal affairs of their respective districts. The Zamindars were required to issue Patta and Quabuliyats to the cultivators mentioning the area of their land, and the amount of revenue to be paid by them to the state

Q77 If the stars are seen to rise perpendicular to the horizon by an observer, he is located on the
(a) Equator
(b) Tropic of Cancer
(c) South Pole
(d) North Pole

Correct Answer is (a) Equator

At the equator, you see the celestial equator arcing from exactly east to the zenith to exactly west. The North Celestial Pole is on your northern horizon. At the equator you see one-half of every star's total 24-hour path around you so all stars are up for 12 hours. All of the stars rise and set perpendicular to the horizon (at an angle = 90 - 0 = 90 degrees).

Q78 Match List I with List II and select the correct answer using the codes given below the Lists :
List I - List II
(Person) - (Distinguished as)
I. Santosh Yadav - (A) T.V. Host
II. Oprah Winfrey - (B) Journalist
III. Oscar Wilde - (C) Mountaineer
IV. P. Sainath - (D) Dramatist and Author
Codes:

(a) I-C, II-A, III-D, IV-B
(b) I-A, II-C, III-B, IV-D
(c) I-C, II-A, III-B, IV-D
(d) I-A, II-C, III-D, IV-B

Correct Answer is (a) I-C, II-A, III-D, IV-B

Santosh Yadav is an Indian mountaineer. She is the first woman in the world to climb Mount Everest twice, and the first woman to successfully climb Mt. Everest from Kangshung Face. She climbed the peak first in May 1992 and then again in May 1993.

Oprah Winfrey is an American media proprietor, talk show host, actress, producer, and philanthropist.

Oscar Fingal O'Flahertie Wills Wilde was an Irish poet and playwright. After writing in different forms throughout the 1880s, he became one of London's most popular playwrights in the early 1890s.

Palagummi Sainath is an Indian journalist and photojournalist who focuses on social & economic inequality, rural affairs, poverty and the aftermath of globalization in India. He is the Founder Editor of the People's Archive of Rural India.

Q 79

In the shaded area of the above map, the mean temperature for the month of July varies between
(a) 22.5 °C — 25.0 °C
(b) 25.0 °C — 27.5 °C
(c) 27.5 °C — 30.0 °C
(d) 30.0 °C — 32.5 °C

Correct Answer is (d) 30.0 °C — 32.5 °C

The climate of the region varies from semi-arid in the north to tropical in most of the region with distinct wet and dry seasons. Rain falls during the monsoon season from about June to October. March to June can be very dry and hot, with temperatures regularly exceeding 40 °C. The Deccan plateau is a topographically variegated region located south of the Gangetic plains-the portion lying between the Arabian Sea and the Bay of Bengal-and includes a substantial area to the north of the Satpura Range, which has popularly been regarded as the divide between northern India and the Deccan.

Q80 The Union Budget, 2000 awarded a Tax Holiday for the North-Eastern Region to promote industrialisation for
(a) 5 years
(b) 7 years
(c) 9 years
(d) 10 years

Correct Answer is (d) 10 years

Mr. Speaker, Sir, I am conscious of the fact that, despite all our announcements, the industrial development in North Eastern Region has not come up to our expectations. To give industrialisation a fillip in this area of the country, I propose a 10 year tax holiday for all industries set up in Growth Centres, Industrial Infrastructure Development Corporations, and for other specified industries, in the North Eastern Region.

Q81 Consider the following statements :
I. Arya Samaj was founded in 1835.
II. Lala Lajpat Rai opposed the appeal of Arya Samaj to the authority of Vedas in support of its social reform programmes.
III. Under Keshab Chandra Sen, the Brahmo Samaj campaigned for women's education.
IV. Vinoba Bhave founded the Sarvodaya Samaj to work among rufugees.
Which of these statements are correct ?
(a) I and II
(b) II and III
(c) II and IV
(d) III and IV

Correct Answer is (d) III and IV

Arya Samaj is an Indian Hindu reform movement that promotes values and practices based on the belief in the infallible authority of the Vedas. The samaj was founded by the sannyasi Dayanand Saraswati on 7 April 1875.

Lala Lajpat Rai was a follower of Arya Samaj

After returning from England, he established the 'Indian Reform Association". A night school for the education of the working classes was opened. Cheap literature and a journal were started to print out the evil effects of drink. To educate girls and women, he opened the Normal School for girls and the Victoria Institution^or women in 1871. Then due to his constant efforts the 'Special Marriage Act' was passed into law in 1872 which legalised civil marriage and marriage between castes for the first time in Indian Society. Around 1875-76, Keshab Chandra Sen started reading each religion and "abandons Unitarian gospel of social reform, turning instead to the ''intellectual study of all major Eurasian religions.

Concept of Sarvodaya:

This concept was first of all adopted by Mahatma Gandhi. It is a comprehensive, social, economic, political, moral and spiritual philosophy.

After Gandhi, It was subsequently adopted by Achaiya Vinoba Bhave. He developed it taking into consideration of Indian social systems and conditions.

Mahatma Gandhi borrowed it from the philosophy of Ruskin and became a part of his constructive philosophy for the welfare of the people of rural India. It was subsequently adopted by Acharya Vinoba Bhave. In order to implement high Ideals of Sarvodaya, Vinoba Bhave established Sarvodaya Samaj. The Sarvodaya philosophy received considerable attention of Jai Prakash Narayan. Sarvodaya provides opportunity for the all round development of the individual and the society.

Q82 Consider the following taxes :
I. Corporation tax
II. Customs duty
III. Wealth tax
IV. Excise duty
Which of these is/are indirect taxes ?
(a) I only
(b) II and IV
(c) I and III
(d) II and III

Correct Answer is (b) II and IV

Definition: Indirect tax is a type of tax where the incidence and impact of taxation does not fall on the same entity.

Description: In the case of indirect tax, the burden of tax can be shifted by the taxpayer to someone else. Indirect tax has the effect to raising the price of the products on which they are imposed. Customs duty, central excise, service tax and value added tax are examples of indirect tax.

Q83 The Mongols under Gengis Khan invaded India during the reign of

(a) Balban
(b) Feroze Tughlaq
(c) Iltutmish
(d) Muhammad bin Tughlaq

Correct Answer is (d) Muhammad bin Tughlaq

The Mongol Empire launched several invasions into the Indian subcontinent from 1221 to 1327, with many of the later raids made by the unruly Qaraunas of Mongol origin. The Mongols occupied parts of modern Pakistan and other parts of Punjab for decades.

The next major Mongol invasion took place after the Khaljis had been replaced by the Tughlaq dynasty in the Sultanate. In 1327 the Chagatai Mongols under Tarmashirin, who had sent envoys to Delhi to negotiate peace the previous year, sacked the frontier towns of Lamghan and Multan and besieged Delhi. The Tughlaq ruler paid a large ransom to spare his Sultanate from further ravages. Muhammad bin Tughluq asked the Ilkhan Abu Sa'id to form an alliance against Tarmashirin, who had invaded Khorasan, but an attack didn't materialize. Tarmashirin was a Buddhist who later converted to Islam. Religious tensions in the Chagatai Khanate were a divisive factor among the Mongols.

Q84 The high density of population in Nile Valley and Island of Java is primarily due to
(a) intensive agriculture
(b) industrialisation
(c) urbanisation
(d) topographic constraints

Intensive agriculture due to availability of fertile. Alluvial soil is the reason for the high density of population in Nile Valley and island of Java.

Q85 The largest share of Foreign Direct Investment (1997-2000) went to
(a) Food and food-product sector
(b) Engineering sector
(c) Electronics and electric equipment sector
(d) Service sector

Correct Answer is (d) Service sector

Table 2: Sectoral Distribution of FDI Approvals, 1991-2000

Sector	No of Approvals	Approved Investment (Rs Billion)	Share (in Per Cent)
Power and fuel	541	634531.2	25.7
Telecommunications	579	458845.0	18.5
Services sector	790	152389.0	6.2
Chemicals (other than fertilisers)	809	123016.2	5.0
Food processing	648	87574.9	3.5
Transport sector	722	184467.6	7.5
Metallurgical industries	304	143796.8	5.8
Elec equipment (incl software)	2491	245791.5	10.0
Textiles	548	33617.8	1.4
Paper and paper products	111	31580.6	1.3
Industrial machinery	530	22438.5	0.9
Others	2404	348976.2	14.2
Total	11965	2467025.3	100.0

Note: Data is for the period, August 1991 to March 1998.
Source: Handbook of Industrial Policy and Statistics, 2001.

Q86 Which one of the following duties is NOT performed by the Comptroller and Auditor General of India ?
(a) To audit and report on all expenditure from the Consolidated Fund of India
(b) To audit and report on all expenditure from the Contingency Funds and Public Accounts
(c) To audit and report on all trading, manufacturing, profit and loss accounts
(d) To control the receipt and issue of public money, and to ensure that the public revenue is lodged in the exchequer

Correct Answer is (d) To control the receipt and issue of public money, and to ensure that the public revenue is lodged in the exchequer

Duties of the CAG:

As per the provisions of the constitution, the CAG's (DPC) (Duties, Powers and Conditions of Service) Act, 1971 was enacted. As per the various provisions, the duties of the CAG include the audit of:
Receipts and expenditure from the Consolidated Fund of India and of the State and Union Territory having legislative assembly.
Trading, manufacturing, profit and loss accounts and balance sheets, and other subsidiary accounts kept in any Government department; Accounts of stores and stock kept in Government offices or departments.
Government companies as per the provisions of the Companies Act, 2013.
Corporations established by or under laws made by Parliament in accordance with the provisions of the respective legislation.
Authorities and bodies substantially financed from the Consolidated Funds of the Union and State Governments. Anybody or authority even though not substantially financed from the Consolidated Fund, the audit of which may be entrusted to the C&AG.
Grants and loans given by Government to bodies and authorities for specific purposes.
Entrusted audits e.g. those of Panchayati Raj Institutions and Urban Local Bodies under Technical Guidance & Support (TGS).

Q87 Which one of the following pairs is correctly matched ?
(a) Harappan Civilisation ... Painted Grey Ware
(b) The Kushans ... Gandhara School of Art
(c) The Mughals ... Ajanta Paintings
(d) The Marathas ... Pahari School of Painting

Correct Answer is (b) The Kushans ... Gandhara School of Art

The Painted Grey Ware culture (PGW) is an Iron Age culture of the western Gangetic plain and the Ghaggar-Hakra valley, lasting from roughly 1200 BCE to 600 BCE.

The Gandhara School of art had also developed in first century AD along with Mathura School during reign of Kushana emperor Kanishka. Both Shakas and Kushanas were patrons of Gandhara School, which is known for the first sculptural representations of the Buddha in human form. The art of the Gandhara school was primarily Mahayana and shows Greco-Roman influence.

The Ajanta Caves are 30 (approximately) rock-cut Buddhist cave monuments which date from the 2nd century BCE to about 480 CE in Aurangabad district of Maharashtra state of India

Pahari painting (literally meaning a painting from the mountainous regions: pahar means a mountain in Hindi) is an umbrella term used for a form of Indian painting, done mostly in miniature forms, originating from Himalayan hill kingdoms of North India, during 17th-19th century, notably Basohli, Mankot, Nurpur, Chamba, Kangra, Guler, Mandi, and Garhwal. Nainsukh was a famous master of the mid-18th century, followed by his family workshop for another two generations.

Q88 Consider the following statements made about the sedimentary rocks :
I. Sedimentary rocks are formed at Earth's surface by the hydrological system.
II. The formation of sedimentary rocks involves the weathering of pre-existing rocks.
III. Sedimentary rocks contain fossils.
IV. Sedimentary rocks typically occur in layers.
Which of these statements are correct ?
(a) I and II
(b) I and IV
(c) II, III and IV
(d) I, II, III and IV

Correct Answer is (d) I, II, III and IV

Sedimentary rocks form at Earth's surface by the hydrologic system. Their origin involves the weathering of pre-existing rock, transportation of the material away from the original site, deposition of the eroded material in the sea or in some other sedimentary environment, followed by compaction and cementation.

Sedimentary rock is one of the three main rock groups (along with igneous and metamorphic rocks) and is formed in four main ways: by the deposition of the weathered remains of other rocks (known as 'clastic' sedimentary rocks); by the accumulation and the consolidation of sediments; by the deposition of the results of biogenic activity; and by precipitation from solution.

Sedimentary rocks include common types such as chalk, limestone, sandstone, clay and shale.

Sedimentary rocks cover 75% of the Earth's surface.

Four basic processes are involved in the formation of a clastic sedimentary rock: weathering (erosion) caused mainly by friction of waves, transportation where the sediment is carried along by a current, deposition and compaction where the sediment is squashed together to form a rock of this kind.

Sedimentary rocks are formed from overburden pressure as particles of sediment are deposited out of air, ice, or water flows carrying the particles in suspension.

Among the three major types of rock, fossils are most commonly found in sedimentary rock. Unlike most igneous and metamorphic rocks, sedimentary rocks form at temperatures and pressures that do not destroy fossil remnants. Often these fossils may only be visible under magnification.

Q89 Match List I with List II and select the correct answer using the codes given below the Lists :
List I - List II
(Publisher) - (Publication)
I. Ministry of Industry - (A) Report on Currency and Finance
II. Central Statistical Organisation - (B) Economic Survey
III. Reserve Bank of India - (C) Wholesale Price Index
IV. Ministry of Finance - (D) National Accounts Statistics
Codes:
(a) I-D, II-C, III-B, IV-A
(b) I-C, II-D, III-A, IV-B
(c) I-D, II-C, III-A, IV-B
(d) I-C, II-D, III-B, IV-A

Correct Answer is (b) I-C, II-D, III-A, IV-B

According to the Reserve Bank of India's annual report on currency and finance for 2005-06, released on 31 May, "it is imperative that the financial markets are developed further," if the risks of financial integration are to be mitigated.

A flagship annual document of the Ministry of Finance, Government of India, Economic Survey reviews the developments in the Indian economy over the previous 12 months, summarizes the performance on major development programs, and highlights the policy initiatives of the government and the prospects of the economy

Wholesale Price Index (WPI) measures the average change in the prices of commodities for bulk sale at the level of early stage of transactions. The index basket of the WPI covers commodities falling under the three major groups namely Primary Articles, Fuel and Power and Manufactured products. (The index basket of the present 2011-12 series has a total of 697 items including 117 items for Primary Articles, 16 items for Fuel & Power and 564 items for Manufactured Products.) The prices tracked are ex- factory price for manufactured products, mandi price for agricultural commodities and ex-mines prices for minerals. Weights given to each commodity covered in the WPI basket is based on the value of production adjusted for net imports. WPI basket does not cover services.
In India WPI is also known as the headline inflation rate .
In India, Office of Economic Advisor (OEA), Department of Industrial Policy and Promotion, Ministry of Commerce and Industry calculates the WPI.

Publication of National Accounts Statistics and Press Releases (Para 13.1.28)
The Cabinet Secretariat or a similar high-level authority at the Centre and in the States should impress upon the source agencies to supply the requisite basic data for National Accounts Statistics (NAS) in a timely and reliable fashion by minimising delays and major revisions.
The National Accounts Division (NAD) of Central Statistical Organisation (CSO) should explicitly announce the time-table of release of NAS and strictly adhere to it.

Q90 Match List I with List II and select the correct answer using the codes given below the Lists :
List I - List II
(Award / Prize) - (Recipient)
I. Indira Gandhi Prize for Peace, Disarmament - (A) Archibishop Desmond Tutu
II. Jamnalal Bajaj Award - (B) Dr. Gurudev Khush
III. International Gandhi Peace Prize - (C) Dr. M.S. Swaminathan
IV. Wolf Prize - (D) Nelson Mandela
Codes:
(a) I-A, II-C, III-D, IV-B
(b) I-C, II-A, III-D, IV-B
(c) I-A, II-C, III-B, IV-D
(d) I-C, II-A, III-B, IV-D

Correct Answer is (b) I-C, II-A, III-D, IV-B

Dr. M.S. Swaminathan
Indira Gandhi Prize for Peace, Disarmament and Development "for his outstanding contribution in the domain of plant genetics and ensuring food security to hundreds of millions of citizens in the developing world." 2000

Recipient of Jamnalal Bajaj Award

Year	Constructive Work	Science & Technology	Women & Child Welfare	International
2000	Somdutt Vedalankar	Bhaskar Save	Vidya Devi	Desmond Tutu

Recipient of International Gandhi Peace Prize

Year	Recipient	Country	Description
2000	Nelson Mandela	South Africa	Former President of South Africa
	Grameen Bank	Bangladesh	Founded by Muhammad Yunus

Gurdev Singh Khush (born August 22, 1935) is an agronomist and geneticist who, along with mentor Henry Beachell, received the 1996 World Food Prize for his achievements in enlarging and improving the global supply of rice during a time of exponential population growth.

Khush has earned many awards, including the Borlaug Award (1977), the Japan Prize (1987), the World Food Prize (1996), Padma Shri (2000) and the Wolf Prize in Agriculture (2000). He was elected a Fellow of the Royal Society in 1995 and by the National Academy of Agricultural Sciences as their foreign fellow in 1991.

Q91 Which one of the following statement correctly describes the Fourth Schedule of the Constitution of India ?
(a) It lists the distribution of power between the Union and the States
(b) It contains the languages listed in the Constitution
(c) It contains the provisions regarding the administration of tribal areas
(d) It allocates seats in the Council of States

Correct Answer is (d) It allocates seats in the Council of States

FOURTH SCHEDULE

Articles 4(1) and 80(2)

Allocation of seats in the Council of States

Q92 Which among the following ports was called Babul Makka (Gate of Makka) during the Mughal Period ?
(a) Calicut
(b) Broach
(c) Cambay
(d) Surat

Correct Answer is (d) Surat

Surat was called Babul Makka during Mughal period because the pilgrimage to Makka was made from here.

Surat had its religious significance as well. Pilgrims went to Mecca for Haj from Surat. Hence, Surat was known as Meccaidwar, Meccabari, Babul Mecca.

Q93 Volcanic eruptions do not occur in the
(a) Baltic Sea
(b) Black Sea
(c) Caribbean Sea
(d) Caspian Sea

Correct Answer is (a) Baltic Sea

This Baltic Sea anomaly looks like a harbor with a pair of stairways and a couple of slot-like boat launches that lead to deeper water. The highest location, the rectangular bump, could have been the site of a crane type device for off-loading cargo, situated as it is adjacent to the deep water. Stones in ring formation may have supported vertical timbers for booms. Some attempt to date the structure should be made. If this structure is man-made and 280 feet below the Baltic, it must date from a time before the glaciers of the last Ice Age melted. It could turn out to be an important site for marine archeology.
According to the paper 'Baltic Sea Geological Development,' during the Late Glacial Maximum 22,000 years ago, glaciers stored enough water as ice to lower the world ocean level 390 feet from present levels. In the Baltic depression meltwater started to replace the continental glacier at about 14,000 years ago when the ocean level was about 240 feet below the present level. If the Baltic Sea anomaly is man-made it may date from a time before 12,000 BC, unless a tectonic event caused the land to subside. Ropes, cattle bones and flint tools dating from 11,000 years ago have been found in the Baltic Sea.

Q94 Who among the following leaders proposed to adopt Complete Independence as the goal of the Congress in the Ahmedabad session of 1920 ?
(a) Abul Kalam Azad
(b) Hasrat Mohani
(c) Jawaharlal Nehru
(d) Mohandas Karamchand Gandhi

Correct Answer is (d) Mohandas Karamchand Gandhi

Following the 1919 Amritsar Massacre, there was considerable public outrage against British rule. Europeans, (civilians and officials) were targets and victims of violence across India. In 1920, Gandhi and the Congress committed themselves to Swaraj, described as political and spiritual independence. At the time, Gandhi described this as the basic demand of all Indians; he specifically said that the question of whether India would remain within the Empire or leave it completely would be answered by the behaviour and response of the British.

Q95 Match List I with List II and select the correct answer using the codes given below the Lists :
List I - List II
(Sports Women) - (Sport)
I. Anjali Vedpathak - (A) Athletics
II. Mouma Das - (B) Gymnastics
III. Neelam Singh - (C) Rifle Shooting

IV. Tumpa Debnath - (D) Table Tennis

(E) Chess
Codes:
(a) I-C, II-D, III-B, IV-E
(b) I-D, II-C, III-A, IV-B
(c) I-D, II-C, III-B, IV-E
(d) I-C, II-D, III-A, IV-B

Correct Answer is (d) I-C, II-D, III-A, IV-B

Anjali Bhagwat (Anjali Bhagwat
Personal information
Birth name Anjali Ramakanta Vedpathak, born 5 December 1969) is a professional Indian shooter. She became the World Number One in 10m Air Rifle in 2002. She also won her first World Cup Final in Milan, in 2003, with a score of 399/400.

Mouma Das is an Indian table tennis player. Born and brought up in Kolkata, West Bengal, she has represented India in international events since the early 2000s.

Neelam Jaswant Singh (born 8 January 1971 in Farmana) is an Indian discus thrower.
Her personal best throw is 64.55 metres, achieved at the 2002 Asian Games in Busan.

Tumpa Debnath (born (1984-12-24)24 December 1984) is an Indian female artistic gymnast, representing her nation at international competitions.

Q96 A class of animals known as Marsupials is a characteristic feature of
(a) Africa
(b) Australia
(c) South America
(d) South-East Asia

Correct Answer is (b) Australia

Marsupials are any members of the mammalian infraclass Marsupialia. All extant marsupials are endemic to Australasia and the Americas. A distinctive characteristic common to these species is that most of the young are carried in a pouch. Well-known marsupials include kangaroos, wallabies, koalas, possums, opossums, wombats, and Tasmanian devils. Some lesser-known marsupials are the potoroo and the quokka.

Q97 Match the following Organisations with their Locations

A. ISRO - 1. Ahmedabad
B. IIRS - 2. Dehradun

C. NRSA - 3. Bangalore
D. SAC - 4. Hyderabad

(a) A-1, B-2, C-3, D-4
(b) A-3, B-2, C-4, D-1
(c) A-2, B-4, C-3, D-1
(d) A-4, B-3, C-2, D-1

The Space Applications Centre (SAC) is an institution of research in Ahmedabad under the aegis of the Indian Space Research Organisation (ISRO).

National Remote Sensing Centre, or NRSC, located at Hyderabad is one of the centres of the Indian Space Research Organisation (ISRO)

The Indian Institute of Remote Sensing is a premier institute for research, higher education and training in the field of Remote Sensing, Geoinformatics and GPS Technology for Natural Resources, Environmental and Disaster Management under the Indian Department of Space, which was established in the year 1966. It is located in the city of Dehradun, Uttarakhand.

The Indian Space Research Organisation is the space agency of the Government of India headquartered in the city of Bangalore. Its vision is to "harness space technology for national development while pursuing space science research and planetary exploration."

Q98 Which of the following pairs is correctly matched ?
(a) Dewan-i-bandagani ... Tughlaq
(b) Dewan-i-Mustakhraj ... Balban
(c) Dewan-i-Kohi ... Alauddin Khilji
(d) Dewan-i-Arz ... Muhammad Tughlaq

Correct Answer is (a) Dewan-i-bandagani ... Tughlaq

Alauddin had made Siri his capital and had built a fort out there mainly to avoid invasions from Mongols. He introduced the reforms in the army and started the system of branding the horses “Dagh” and biometric information about the soldiers “Chehra”. Regular muster for army was introduced by him. Alauddin confiscated the lands granted to nobles and checked free grants of lands. He forbade them to marry among each other’s families and hold celebrations. To know about the revenue arrears and collect them, he introduced a new department of Diwan-i-mustakhraj.

Diwan-i-bandagan (department of slaves) and Diwan-i-Khairat (charity department) was created by Firuz shah Tughluq. Diwan-i-mustakharaj (to realise arrears) was created by Alauddin Khiiji. Diwan- i-kohi (department of agriculture) was created by Muhammad bin Tughluq.

Sher Shah’s Administrative Reforms
Imperial Government:

Sher Shah Suri established a highly centralised machinery. His administrative works were roughly divided into various departments called Diwans, each headed by a separate minister. The important departments were:

1. Diwan-i-wizarat was headed by a wazir who looked after finance and revenue.

2. Diwan-i-Ariz—headed by Ariz-i-Mammalik (military department)

3. Diwan-i-Rasalat—whose officer-in-charge dealt with foreign affairs and diplomatic correspondence.

4. Diwan-i-Insha—The officer drafted royal proclamation and maintained government records. Apart from these, the Diwan-i-quaza (justice) headed by chief Qazi, Diwan-i-Barid (intelligence) were the other departments.

(d) Firoz Tughlaq set up a separate department of slaves known as 'Diwan-i-Bandagan'. Mohd Bin Tughlaq was succeeded by his cousin (not uncle) Firoz Tughlaq. Alauddin Khalji introduced the branding system of horses in his military.

Q99 The earlier name of WTO was
(a) UNCTAD
(b) GATT
(c) UNIDO
(d) OECD

Correct Answer is (b) GATT

The WTO's predecessor, the General Agreement on Tariffs and Trade (GATT), was established after World War II in the wake of other new multilateral institutions dedicated to international economic cooperation – such as the World Bank and the International Monetary Fund.

Q100 Two wires have their lengths, diameters and resistivities, all in the ratio of 1 : 2. If the resistance of the thinner wire is 10 ohms, the resistance of the thicker wire is
(a) 10 ohms
(b) 5 ohms
(c) 20 ohms
(d) 40 ohms

Correct Answer is (a) 10 ohms

Calculating resistance

To calculate the resistance R of a wire, we need to know three things:
its length – the longer the wire, the greater its resistance

its cross-sectional area A – the greater the area, the less its resistance
the resistivity of the material r – the greater the resistivity, the greater its resistance.

resistance = resistivity × length / area

area = pi x square of dia/4

resistance of thicker wire/resistance of thinner wire (10 ohms) = 2 x 2/ (2 x 2) = 1

so, resistance of thicker wire = 10 ohms

Q101 Assertion (A):
A stick is dipped in water in a slanting position. If observed sideways, the stick appears short and bent at the surface of water.
Reason (R):
The light coming from the stick undergoes scattering from water molecules giving the stick a short and bent appearance.
(a) Both A and R are individually true and R is the correct explanation of A
(b) Both A and R are individually true but R is NOT a correct explanation of A
(c) A is true but R is false
(d) A is false but R is true

Correct Answer is (c) A is true but R is false

Why a stick partly immersed in water appears to be bent at the water surface?

The main reason behind this phenomenon is refraction.

The light as we know needs a medium for its propagation. Every medium has its own refractive index which is usually taken with respect to air. For sake of simplicity the refractive index of air is taken as unity.

When we see any object, the light from that object travels through medium of air and reaches to our retina. The light has its specific wavelength qnd speed during its propagation.

When an object is placed such that it is in two medium, the light travels from both the media before reaching our eye.

Here the two media are air and water. Water has higher refractive index than air which causes refraction. Due to the change in medium the speed of light decreases. The refraction causes difference in speed of light the stick kept in water appears to be bent or broken.

Q102 Assertion (A):

A piece of copper and a piece of glass are heated to the same temperature. When touched, thereafter, the copper piece appears hotter than the glass piece.
Reason (R):
The density of copper is more than that of glass.
(a) Both A and R are individually true and R is the correct explanation of A
(b) Both A and R are individually true but R is NOT a correct explanation of A
(c) A is true but R is false
(d) A is false but R is true

Correct Answer is (c) A is true but R is false

When glass and copper pieces heated to the same temperature are touched, copper piece seems warmer than glass piece.

The thermal conductivity of copper is about 400 times greater than glass.

The heat flowing through that copper moves about 400 times faster than the heat flowing through glass; and the glass is holding its heat longer (x400) than the copper resulting in lower heat transfer to the skin.

Q103 Assertion (A):
The boiling point of water decreases as the altitude increases.
Reason (R):
The atmospheric pressure increases with altitude.
(a) Both A and R are individually true and R is the correct explanation of A
(b) Both A and R are individually true but R is NOT a correct explanation of A
(c) A is true but R is false
(d) A is false but R is true

Correct Answer is (c) A is true but R is false

As elevation increases, atmospheric pressure decreases because air is less dense at higher altitudes. Because the atmospheric pressure is lower, the vapour pressure of the liquid needs to be lower to reach boiling point. Therefore, less heat is required to make the vapour pressure equal to the atmospheric pressure.

Q104 When lightwaves pass from air to glass, the variables affected are
(a) Wavelength, frequency and velocity
(b) Velocity and frequency
(c) Wavelength and frequency
(d) Wavelength and velocity

Correct Answer is (d) Wavelength and velocity

We know that the frequency of the wave remains constant when the wave is traveling from one medium to another.

It is also known relation that:

Velocity of the wave = frequency x wavelength

From here, we know that velocity of wave changes and frequency doesn't. Hence the wavelength should change for the equation to be true. It is this change that causes refraction of light.

As the wave is traveling from a rarer medium to a denser medium.

Velocity of the light decreases, frequency remains same and hence wavelength decreases.

Q105 When water is heated from 0°C to 10°C, its volume
(a) increases
(b) decreases
(c) does not change
(d) first decreases and then increases

Correct Answer is (d) first decreases and then increases

When water is heated from 0 ^{0}C, its volume decreases because its density increases and you can see this effect upto 4 ^{0}C. Because the density of ice is maximum at 4 ^{0}C. Afterwards as the density decreases the volume increases. The main reason for this is hydrogen bond in ice gets cleaved due to the melting of ice.

Q106 Consider the following statements :
In a nuclear reactor, self-sustained chain reaction is possible, because
I. more neutrons are released in each of the fission reactions.
II. the neutrons immediately take part in the fission process.
III. the fast neutrons are slowed down by Graphite.
IV. every neutron realeased in the fission reaction initiates further fission.
Which of these statements are correct ?
(a) I, II and III
(b) I and III
(c) II and IV
(d) II, III and IV

Correct Answer is (b) I and III

Fission chain reactions occur because of interactions between neutrons and fissile isotopes (such as 235U). The chain reaction requires both the release of neutrons from fissile isotopes undergoing nuclear fission and the subsequent absorption of some of these neutrons in fissile isotopes. When an atom undergoes nuclear fission, a few neutrons (the exact number depends on several factors) are ejected from the reaction. These free neutrons will then interact with the surrounding medium, and if more

fissile fuel is present, some may be absorbed and cause more fissions. Thus, the cycle repeats to give a reaction that is self-sustaining.

Nuclear Chain Reaction

It was pointed out in the preceding articles that the neutron-induced fission reaction is the reaction, in which the incident neutron enters the heavy target nucleus (fissionable nucleus), forming a compound nucleus that is excited to such a high energy level (Eexcitation > Ecritical) that the nucleus splits into two large fission fragments. A large amount of energy is released in the form of radiation and fragment kinetic energy. Moreover and what is for this chapter crucial, the fission process may produce 2, 3 or more free neutrons that are capable of inducing further fissions and so on. This sequence of fission events is known as the fission chain reaction and it is of importance in nuclear reactor physics.

Q107 Match List I with List II and select the correct answer using the codes given below the Lists :
List I - List II
(Characteristic) - (Particle)
I. Zero mass - (A) Positron
II. Fractional charge - (B) Neutrino
III. Fractional spin - (C) Quark
IV. Integral spin - (D) Phonon
Codes :
(a) I-B, II-C, III-A, IV-D
(b) I-C, II-B, III-D, IV-A
(c) I-B, II-C, III-D, IV-A
(d) I-C, II-B, III-A, IV-D

Correct Answer is (a) I-B, II-C, III-A, IV-D

Why do quarks have a fractional charge?
I am aware that evidence exists that strongly suggests the existence of quarks and do not doubt it. It is just simply really weird to me that they can have a fractional charge. While other elementary particles, such as the electron, carry an integer charge. So logically I would expect charge to be made up in discrete packets of charge just like energy is made up of discrete packets of energy called photons. And spin in particles comes in integers for particles as well. So it's just really weird to comprehend that in this one instance a subatomic particle has fractional charges.

The positron or antielectron is the antiparticle or the antimatter counterpart of the electron. The positron has an electric charge of +1 e, a spin of 1/2 (same as electron), and has the same mass as an electron.

Neutrinos are one of the fundamental particles which make up the universe. They are also one of the least understood.

Neutrinos are similar to the more familiar electron, with one crucial difference: neutrinos do not carry electric charge. Because neutrinos are electrically neutral, they are not affected by the electromagnetic

forces which act on electrons. Neutrinos are affected only by a "weak" sub-atomic force of much shorter range than electromagnetism, and are therefore able to pass through great distances in matter without being affected by it. If neutrinos have mass, they also interact gravitationally with other massive particles, but gravity is by far the weakest of the four known forces.

The Standard Model of particle physics assumed that neutrinos are massless. The experimentally established phenomenon of neutrino oscillation, which mixes neutrino flavour states with neutrino mass states (analogously to CKM mixing), requires neutrinos to have nonzero masses.

In the context of condensed matter physics, phonons are also massless. Phonons are collective excitations of the crystal lattice vibration and are massless Goldstone bosons. Even though phonons are massless, they carry momentum by virtue of their wavelength.

Q108 Who is the scientist in whose honour the "Chandra" X-ray telescope has been named ?
(a) Chandrasekhar Venkat Raman
(b) Jagdish Chandra Bose
(c) Prafulla Chandra Roy
(d) Subrahmanyan Chandrasekhar

Correct Answer is (d) Subrahmanyan Chandrasekhar

The Chandra X-ray Observatory (CXO), previously known as the Advanced X-ray Astrophysics Facility (AXAF), is a Flagship-class space observatory launched on STS-93 by NASA on July 23, 1999. Chandra is sensitive to X-ray sources 100 times fainter than any previous X-ray telescope, enabled by the high angular resolution of its mirrors. Since the Earth's atmosphere absorbs the vast majority of X-rays, they are not detectable from Earth-based telescopes; therefore space-based telescopes are required to make these observations. Chandra is an Earth satellite in a 64-hour orbit, and its mission is ongoing as of 2018.

Chandra is one of the Great Observatories, along with the Hubble Space Telescope, Compton Gamma Ray Observatory (1991–2000), and the Spitzer Space Telescope. The telescope is named after the Nobel Prize-winning Indian-American astrophysicist Subrahmanyan Chandrasekhar.

Q109 The mass of a body on Earth is 100 kg (acceleration due to gravity, ge - 10 m/s2). If acceleration due to gravity on the Moon ge/6, then the mass of the body on the moon is
(a) 100/6 kg
(b) 60kg
(c) 100 kg
(d) 600 kg

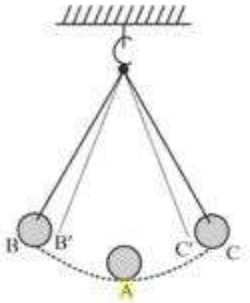
Correct Answer is (c) 100 kg

The Moon's gravity is much less than the Earth's gravity - approximately one sixth. So, a 100 kg astronaut weighs 980N on Earth. On the Moon, the astronaut would weigh only 162.2N. However, the astronaut's mass is 100kg where-ever they are. Weight on Earth: 100kg x 9.8m/s2 = 980N.

Q110 Consider the following statements :
A simple pendulum is set into oscillation. Then
I. the acceleration is zero when the bob passes through the mean position.
II. in each cycle the bob attains a given velocity twice.
III. both acceleration and velocity of the bob are zero when it reaches its extreme position during its oscillation.
IV. the amplitude of oscillation of the simple pendulum decreases with time.
Which of these statements are correct ?
(a) I and II
(b) III and IV
(c) I, II and IV
(d) II, III and IV

Correct Answer is (c) I, II and IV

The bob of a simple pendulum is attached to a string which pulls the bob along its length.



Here B and C are extreme positions whereas A is mean position. The speed of the bob increases as it approaches the mean position A and continues to move till it reaches C. At C the speed becomes zero. Due to the unbalanced force the bob moves towards the mean position. The speed of the bob is maximum at the mean position and is zero at the extreme positions. Thus, it is clear that in each cycle bob velocity increases from zero to maximum. This means that it attains a given velocity twice. Suppose the bob of the pendulum reaches up to B while oscillating, then AB is the amplitude. For the next oscillation the bob fails to reach B but it will reverse the direction from point B' instead of B. The amplitude of oscillation in the second case is AB' which is less than AB. That means, a retarding force is acting on the bob thereby reducing the amplitude of oscillation. This retarding force is nothing but air-resistance or air-friction. At extreme position, acceleration is maximum. So statement 3 is not correct.

Simple Harmonic Motion (SHM):

A mass attached to a linear spring and set into up-and-down motion performs a motion that is called " simple harmonic motion, or SHM. "

Linear Velocity and Acceleration in Simple Harmonic Motion:

If an object is oscillating up and down, for example, it is easy to see that its velocity becomes zero at the extreme points, i.e. at the highest and lowest points. This is simply because it has to come to stop at those points in order to change direction. It is also easy to see that velocity gains its maximum magnitude at the midpoint or the equilibrium level. We may therefore state that:

" In Simple Harmonic Motion, maximum speed occurs at x = 0 (the equilibrium level or position), and speed is zero at the extreme ends (x = +/- A)." Of course, if we use the word "Velocity", the respective direction(s) must be determined.

Acceleration has a different story. At the middle (x = 0), acceleration is zero. At the extreme ends, when a spring is at its maximum stretch or compress, the spring force is at its maximum magnitude, and therefore the acceleration it gives to the attached mass is maximum. We may therefore state that:

" In Simple Harmonic Motion, the maximum of acceleration magnitude occurs at x = +/-A (the extreme ends where force is maximum), and acceleration at the middle (at x = 0) is zero."

Q111 Cloudy nights are warmer compared to clear cloudless nights, because clouds
(a) prevent cold waves from the sky from descending on Earth
(b) reflect back heat given off by Earth
(c) produce heat and radiate it towards Earth
(d) absorb heat from the atmosphere and send it towards Earth

Correct Answer is (b) reflect back heat given off by Earth

All the light absorbed by earth is radiated back to the atmosphere as infrared rays and nearly escape (in north India people throw cold water on bricks laid floor-British idea- to cool down the surface-during the summer evenings); otherwise the Earth would have become so hot that we will not exist today. Even the short waves (ultra-violet and the visible absorbed by the Earth is radiated back to the outer space as infrared. Clouds, on the other hand absorb most of the infra-red radiated by Earth and sends back. Snow and ice on top of hills reflect back instantly the sunlight. Refer “albido” the reflecting power of different materials. A cloudy night will be warm. A clear sky will bring “Fogs” if enough moist air is there and no surface wind.

Q112 Which of the following weather conditions is indicated by a sudden fall in barometer reading ?
(a) Stormy weather
(b) Calm weather
(c) Cold and dry weather
(d) Hot and sunny Weather

Correct Answer is (a) Stormy weather

Pressure Falling Rapidly PRESFR occurs just before a low pressure system approaches, usually accompanied by strong winds due to the tight isobaric gradient; or just before a storm approaches the area, particularly near a supercell storm where studies have shown that a pressure spike occurs in association with a tornado.

Q113 A radioactive substance has a half-life of four months. Three-fourth of the substance would decay in
(a) 3 months
(b) 4 months
(c) 8 months
(d) 12 months

Correct Answer is (c) 8 months

Half life of any radioactive substance is the amount of time required for the quantity / weight of the substance to fall to half its initial value.

So after one half life , we will have ½ or 50% of the substance remaining. And after 2 half lives , we will have ¼ of the substance remaining. In other words, ¾ of the substance will take two half lives to decay.

As one half life is given as 4 months , so the substance will take 8 months to decay by ¾ th quantiy by weight.

Q114 The following table shows the percentage change in the consumption of electricity by five towns P, Q, R, S, T from 1986 to 1988 :

Town	Per cent change	
	From 1986 to 1987	From 1987 to 1988
P	+8	-18
Q	-15	+11
R	+6	+9
S	-7	-5
T	+13	-6

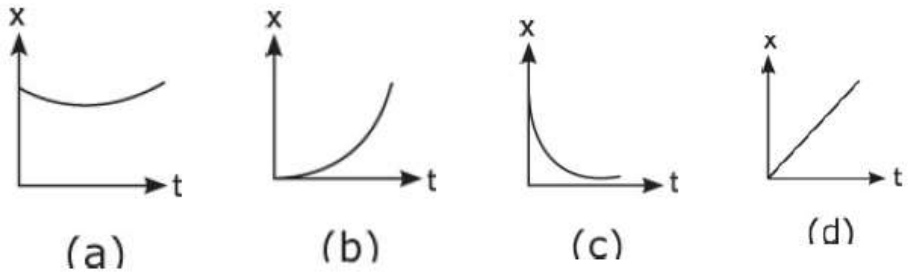
If town T consumed 500,000 units in 1986, how much did it consume in 1988 ?
(a) 371,000 units
(b) 531,100 units

(c) 551,100 units
(d) 571,100 units

Correct Answer is (b) 531,100 units

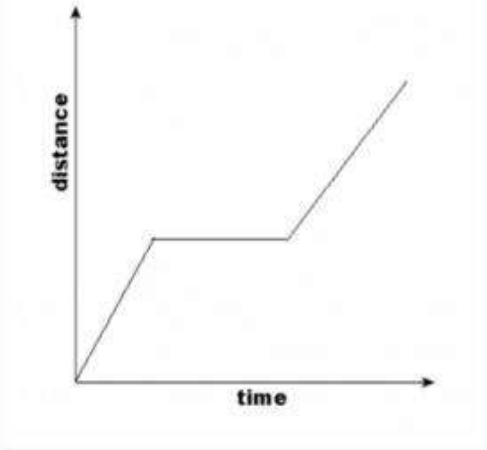
In 1987 it consumed 500,000 + 13/100 x 500,000 = 565,000
In 1988 it consumed 565,000 - 6/100 x 565,000 = 531,100

Q115 Which of the following distance-time graph (x - t) represents one-dimensinal uniform motion?



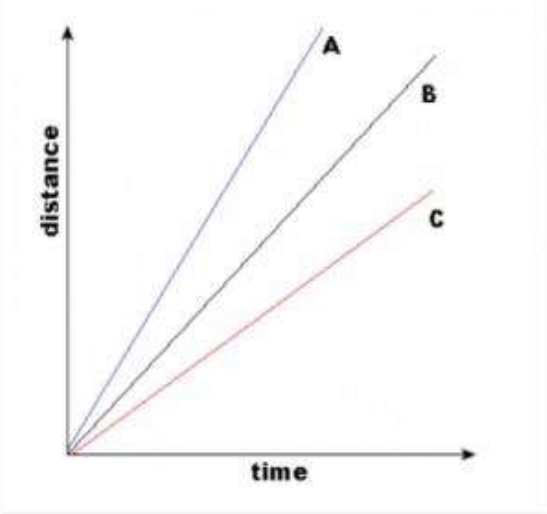
Correct Answer is (d)

Distance-time graph is the plot of distance travelled by a body against time. So it will tell us about the journey made by a body and its speed. Below is an example of a distance-time graph, if it is a straight horizontal line than the body is stationary, its speed is zero, if the line is diagonal than its moving with a constant speed and if it is anything other than a straight line then the speed is varying.



Let us now consider a distance-time graph in which the body is moving with uniform motion. A body is said to be in uniform motion when the body covers the equal distance in equal time intervals. Let's consider a time interval of 1 second, If a body covers 10 meters in the first 1 seconds then it should cover 10 meters in every second from there on, this will indicate that the body is in uniform motion. Let's draw a graph for uniform motion.

As in uniform motion, the distance time graph would be a straight line, because the equal distance is covered in equal units of time.



You can see that there are three bodies A, B and C, all of them are in uniform motion then why do they have different slopes?

It is because the slope of a distance-time graph determines the speed of that body, so steeper the slope greater will be the speed of the body. From the above graph, we can come to a conclusion that body A has the highest speed and body C has the least speed.

Q116 Assertion (A):
A Chemical reaction becomes faster at higher temperatures.
Reason (R):
At higher temperatures, molecular motion becomes more rapid.
(a) Both A and R are individually true and R is the correct explanation of A
(b) Both A and R are individually true but R is NOT a correct explanation of A
(c) A is true but R is false
(d) A is false but R is true

Correct Answer is (b) Both A and R are individually true but R is NOT a correct explanation of A

As you increase the temperature the rate of reaction increases. As a rough approximation, for many reactions happening at around room temperature, the rate of reaction doubles for every 10°C rise in temperature.

The explanation

Increasing the collision frequency

Particles can only react when they collide. If you heat a substance, the particles move faster and so collide more frequently. That will speed up the rate of reaction.

Q117 Which one of the following is NOT radioactive ?
(a) Astatine
(b) Francium
(c) Tritium
(d) Zirconium

Correct Answer is (d) Zirconium

Astatine is a radioactive chemical element with symbol At and atomic number 85. It is the rarest naturally occurring element in the Earth's crust, occurring only as the decay product of various heavier elements.

Francium is a chemical element with symbol Fr and atomic number 87. It used to be known as eka-caesium. It is extremely radioactive; its most stable isotope, francium-223 (originally called actinium K after the natural decay chain it appears in), has a half-life of only 22 minutes.

Tritium also known as hydrogen-3) is a radioactive isotope of hydrogen. The nucleus of tritium (sometimes called a triton) contains one proton and two neutrons, whereas the nucleus of protium (by far the most abundant hydrogen isotope) contains one proton and no neutrons.

Zirconium is a chemical element with symbol Zr and atomic number 40. The name zirconium is taken from the name of the mineral zircon, the most important source of zirconium. The word zircon comes from the Persian word zargun, meaning "gold-colored". It is a lustrous, grey-white, strong transition metal that closely resembles hafnium and, to a lesser extent, titanium. Zirconium is mainly used as a refractory and opacifier, although small amounts are used as an alloying agent for its strong resistance to corrosion. Zirconium forms a variety of inorganic and organometallic compounds such as zirconium dioxide and zirconocene dichloride, respectively. Five isotopes occur naturally, three of which are stable. Zirconium compounds have no known biological role.

Q118 Which one of the following is the correct sequence in increasing order of molecular weights of the hydrocarbons ?
(a) Methane, ethane, propane and butane
(b) Propane, butane, ethane and methane
(c) Butane, ethane, propane and methane
(d) Butane, propane, ethane and methane

Correct Answer is (a) Methane, ethane, propane and butane

Methane/Molar mass 16.04 g/mol

Ethane/Molar mass 30.07 g/mol

Propane/Molar mass 44.1 g/mol

Butane/Molar mass 58.12 g/mol

Q119 In an atom, the order of filling up of the orbitals is governed by
(a) Aufbau principle
(b) Heisenberg's uncertainty principle
(c) Hund's rule
(d) Pauli's exclusion principle

Correct Answer is (a) Aufbau principle

The aufbau principle states that in the ground state of an atom or ion, electrons fill atomic orbitals of the lowest available energy levels before occupying higher levels. For example, the 1s shell is filled before the 2s subshell is occupied. In this way, the electrons of an atom or ion form the most stable electron configuration possible.
Aufbau is a German noun that means construction or "building-up". The aufbau principle is sometimes called the building-up principle or the Aufbau rule. Since the name originates from German, despite it being a common noun, it should be capitalised in English.

Q120 An aqueous solution of copper sulphate is acidic in nature because the salt undergoes
(a) dialysis
(b) electrolysis
(c) hydrolysis
(d) photolysis

Correct Answer is (c) hydrolysis

Copper sulphate is a salt of a strong acid, H2SO4, and a weak base, Cu(OH)2.

So, in aqueous solution, the Cu2+ ions undergo hydrolysis as follows:

Cu(2+) + H2O = CuOH(+) + H(+)

The release of H+ ions by hydrolysis makes the solution distinctly acidic.

Q121 Consider the following statements with reference to the Periodic Table of chemical elements :
I. Ionisation potential gradually decreases along a period.
II. In a group of elements, electron affinity decreases as the atomic weight increases.
III. In a given period, electronegativity decreases as the atomic number increases.
Which of these statement(s) is/are correct ? (
(a) I only
(b) II only
(c) I and III
(d) II and III

Correct Answer is (b) II only

Thus, on moving from left to right in a period, the tendency of atoms to lose electrons decreases. Hence, the ionization energy increases across the period. ... Therefore it requires increased energy to remove an electron from the atom as we move across a period.

Electron affinity is defined as the energy given off when one mole of atoms in the gaseous state each takes in one (or more) electrons to become a mole of anions in the gaseous state.
Simply put, electron affinity tells you what the energetic gain is when an atom becomes an anion.
Now, let's take a look at the two factors you've mentioned and see how they affect electron affinity.
You can think of an atom's electron affinity as a measure of the attraction that exists between the nucleus, which is positively charged, and the electron, which is negatively charged.
This implies that factors that tend to reduce this attraction will also reduce electron affinity.
An increase in atomic size leads to a decrease in electron affinity because the incoming electron is added further away from the nucleus, i.e. on a higher energy level.

Electronegativity:
The tendency of an atom to attract the shared pair of electrons towards itself is known as electronegativity.

Electronegativity increases across a period while it decreases down a group.
Atomic radius increases down the group due to addition of new shell. Due to this the distance between nucleus and valence shell increases. And the nuclear attractions on the valence shell decrease hence electronegativity decreases.
The atomic radius decreases across a period. While moving from left to right in a period there is no addition of new shells but electrons are added to the same shell. Hence the nuclear attractions on outer most shell increases therefore electronegativity increases.
Here we have two elements with atomic numbers 35 and 75
The element 35 belongs to 4th period VIIA group and the element 75 belongs to 6th period VIIIB group
From the above information we can conclude that the element with atomic number 35 is more electronegative than the element with atomic number 75.

Q122 Quartizite is metamorphosed from
(a) Limestone
(b) Obsidian
(c) Sandstone
(d) Shale

Correct Answerr is (c) Sandstone

Quartzite is a metamorphic rock formed when quartz-rich sandstone or chert has been exposed to high temperatures and pressures. Such conditions fuse the quartz grains together forming a dense, hard, equigranular rock.

Q123 Which of the following cell organelles play the most significant role in protein synthesis ?
(a) Lysosome and Centrosome

(b) Endoplasmic reticulum and Ribosome
(c) Golgi apparatus and Mitochondria
(d) Lysosome and Mitochondria

Correct Answer is (b) Endoplasmic reticulum and Ribosome

Endoplasmic Reticulum is not an absolute requirement in protein synthesis, in the sense that a reconstituted construct containing mRNA, amino acids, tRNA, ribosome subunits, translation factors, co-factors and enzyme can produce proteins in-vitro (Cell-free protein synthesis). The fact that prokaryotes are able to synthesise proteins is a proof-of-concept that ER is not an absolute requirement for protein biogenesis.

Having said that, ER definitely plays a major role in maintaining protein homeostasis. When ER fails to do that, we encounter Unfolded Protein Response (UPR).

The ribosome is a complex molecule made of ribosomal RNA molecules and responsible for protein synthesis.

Q124 Assertion (A):
Scientists can cut apart and paste together DNA molecules at will, regardless of the source of the molecules.
Reason (R):
DNA fragments can be manipulated using restriction endonucleases and DNA ligases.
(a) Both A and R are individually true and R is the correct explanation of A
(b) Both A and R are individually true but R is NOT a correct explanation of A
(c) A is true but R is false
(d) A is fasle but R is true

Correct Answer is (a) Both A and R are individually true and R is the correct explanation of A

Genetic Engineering

Today, scientists can isolate essentially any gene of interest from any species, can incorporate that gene into a small self-replicating extrachromosomal genetic element (usually a plasmid or a viral DNA molecule), can introduce that ***"recombinant DNA molecule"*** into host cells such as bacteria or yeasts, can grow large vats or fermentors full of these recombinant organisms, and can subsequently isolate and purify essentially any desired quantity of the gene of interest. They can attach the gene to selected regulatory signals so that the gene will be correctly expressed in bacteria or in plants or in animals. In some cases, its expression can even be restricted to specific tissues or cell types in higher plants and animals. In other cases, the gene can be fitted with controlling sequences such that it will be expressed only after exposure to light, or to heavy metal cations, or to temperature shock. In short, scientists ca.ı cut apart and paste together DNA molecules almost at will, regardless of the source of the molecules. All of this has become possible because of the discovery and isolation of (1) a large battery of enzymes called ***restriction endonucleases*** that cut DNA molecules very precisely at known sites and (2) enzymes called ***DNA ligases*** that paste ("ligate") the pieces produced by restriction enzymes back together in the desired configurations. All of these procedures

Q125 The cellular and molecular control of programmed cell death is known as
(a) Apoptosis
(b) Ageing
(c) Degeneration
(d) Necrosis

Correct Answer is (a) Apoptosis

Apoptosis and autophagy are both forms of programmed cell death, but necrosis was long seen as a non-physiological process that occurs as a result of infection or injury

Apoptosis (from Ancient Greek "falling off") is a form of programmed cell death that occurs in multicellular organisms. Biochemical events lead to characteristic cell changes (morphology) and death. These changes include blebbing, cell shrinkage, nuclear fragmentation, chromatin condensation, chromosomal DNA fragmentation, and global mRNA decay. The average adult human loses between 50 and 70 billion cells each day due to apoptosis.

Q126 Which organelle in the cell, other than nucleus, contains DNA ?

(a) Centriole
(b) Golgi apparatus
(c) Lysosome
(d) Mitochondrion

Correct Answer is (d) Mitochondrion

Although most of a cell's DNA is contained in the cell nucleus, the mitochondrion has its own independent genome that shows substantial similarity to bacterial genomes. Mitochondrial proteins (proteins transcribed from mitochondrial DNA) vary depending on the tissue and the species. In humans, 615 distinct types of protein have been identified from cardiac mitochondria, whereas in rats, 940 proteins have been reported. The mitochondrial proteome is thought to be dynamically regulated.

Q127 Epiphytes are plants which depend on other plants for
(a) food
(b) mechanical support
(c) shade
(d) water

Correct Answer is (a) food

An epiphyte is an organism that grows on the surface of a plant and derives its moisture and nutrients from the air, rain, water (in marine environments) or from debris accumulating around it. Epiphytes take part in nutrient cycles and add to both the diversity and biomass of the ecosystem in which they occur like any other organism. They are an important source of food for many species. Typically, the older parts of a plant will have more epiphytes growing on them. Epiphytes differ from parasites in that epiphytes grow on other plants for physical support and do not necessarily negatively affect the host.

Q 128 Antigen is a substance which
(a) destroys harmful bacteria
(b) is used to treat poisoning
(c) lowers body-temperature
(d) stimulates formation of antibody

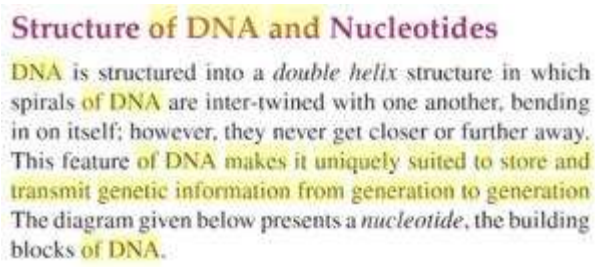
Correct Answer is (d) stimulates formation of antibody

An antigen is a substance that your immune system reacts against. A harmful virus is one kind of antigen. When your immune system detects some toxic foreign body or substance, it sends up defenses against this antigen called antibodies.

Q129 Which of the following features of DNA makes it uniquely suited to store and transmit genetic information from generation to generation ?
(a) Complementarity of the two stands
(b) Double helix
(c) Number of base-pairs per turn

(d) Sugar-phosphate backbone

Correct Answer is (b) Double helix



Structure of DNA and Nucleotides

DNA is structured into a *double helix* structure in which spirals of DNA are inter-twined with one another, bending in on itself; however, they never get closer or further away. This feature of DNA makes it uniquely suited to store and transmit genetic information from generation to generation The diagram given below presents a *nucleotide*, the building blocks of DNA.

Q130 The American multinational company, Monsanto has produced an insect-resistant cotton variety that is undergoing field- trails in India. A toxin gene from which ONE of the following bacteria has been transferred to this transgenic cotton ?
(a) Bacillus subtilis
(b) Bacillus thurigiensis
(c) Bacillus amyloliquifanciens
(d) Bacillus globlii

Correct Answer is (b) Bacillus thurigiensis

What is Bt?

The Bt is a short form of ubiquitous soil bacterioum Bacillus thuringiensis. This bacterium is gram positive and spore forming that forms parasporal crystals during stationary phase of its growth cycle. The synthesized crystalline proteins called 'endotoxins' are highly toxic to certain insects. They kill the insect by acting on the epithelium tissues of midgut of caterpillars.

Q131 Match List I with List II and select the correct answer using the codes given below the Lists :
List I - List II
(Bone) - (Name)
I. Breast-bone - (A) Clavicle
II. Collar-bone - (B) Patella
III. Knee-cap - (C) Scapula
IV. Shoulder blade - (D) Sternum
Codes:
(a) I-D, II-A, III-C, IV-B
(b) I-A, II-D, III-C, IV-B
(c) I-A, II-D, III-B, IV-C
(d) I-D, II-A, III-B, IV-C

Correct Answerr is (d) I-D, II-A, III-B, IV-C

The clavicle or collarbone is a long bone that serves as a strut between the shoulder blade and the sternum or breastbone. There are two clavicles, one on the left and one on the right. The clavicle is the only long bone in the body that lies horizontally.

The patella, also known as the kneecap, is a thick, circular-triangular bone which articulates with the femur (thigh bone) and covers and protects the anterior articular surface of the knee joint.

In anatomy, the scapula (plural scapulae or scapulas; also known as shoulder bone, shoulder blade or wing bone) is the bone that connects the humerus (upper arm bone) with the clavicle (collar bone).

The sternum or breastbone is a long flat bone located in the center of the chest. It connects to the ribs via cartilage and forms the front of the rib cage, thus helping to protect the heart, lungs, and major blood vessels from injury.

Q132 Consider the following statements :
I. Tapeworm is a hermaphrodite.
II. Round-worm has separate sexes.
III. Filaria is caused by a nematode.
IV. Guinea-worm is an annelid.
Which of these are correct ?
(a) I and II
(b) I, II and III
(c) III and IV
(d) II, III and IV

Correct Answer is (b) I, II and III

Taenia solium is the pork tapeworm belonging to cyclophyllid cestodes in the family Taeniidae. It is an intestinal zoonotic parasite found throughout the world, and is most prevalent in countries where pork is eaten. The adult worm is found in humans and has a flat, ribbon-like body, which is white in color and measures 2 to 3 m in length. Its distinct head, the scolex, contains suckers and a rostellum as organs of attachment. The main body, the strobila, consists of a chain of segments known as proglottids. Each proglottid is a complete reproductive unit; hence, the tapeworm is a hermaphrodite. It completes its life cycle in humans as the definitive host and pigs as intermediate host. It is transmitted to pigs through human feces or contaminated fodder, and to humans through uncooked or undercooked pork.

Nematodes are roundworms in the Phylum Nematoda. There are about 12,000 known species of roundworms, but many thousands of unknown species are suspected. Roundworms can be both free-living and parasitic. There is not as much known about free-living nematodes, since the parasitic forms are of greater interest to us.

Reproduction & Development:

Roundworms reproduce sexually and have internal fertilization. They also have separate sexes. Almost all roundworms reproduce by laying eggs. A roundworm may lay as many as 10,000 to 20,000 eggs a day. Young roundworms resemble the adults. They grow without metamorphosis. During their life they will molt (shed) an elastic cuticle four times.

Filariasis is a parasitic disease caused by an infection with roundworms of the Filarioidea type. These are spread by blood-feeding black flies and mosquitoes. This disease belongs to the group of diseases called helminthiases. Eight known filarial nematodes use humans as their definitive hosts.

Guinea worm, (Dracunculus medinensis), also called medina worm or dragon worm, member of the phylum Nematoda. The guinea worm, a parasite of humans, is found in tropical regions of Asia and Africa and in the West Indies and tropical South America.

The annelids, also known as the ringed worms or segmented worms, are a large phylum, with over 22,000 extant species including ragworms, earthworms, and leeches.

Q133 Match List I with List II and select the correct answer using the codes given below the Lists :
List I - List II
(Achievement in genetics) - (Scientists)
I. Discovery of transduction and Conjugation in bacteria - (A) Khurana
II. Establishing the sex-linked inheritance - (B) Kornberg
III. Isolation of DNA polymerase form E. coli - (C) Lederberg
IV. Establishing the complete genetic code - (D) Morgan

(E) Ochoa

Codes:
(a) I-D, II-C, III-B, IV-A
(b) I-C, II-D, III-A, IV-E
(c) I-D, II-C, III-A, IV-E
(d) I-C, II-D, III-B, IV-A

Correct Answer is (d) I-C, II-D, III-B, IV-A

Discovery of Transduction. The discovery of the process of transduction was traced back in 1952 when scientists Norton Zinder and Joshua Lederberg were studying the recombination in the bacterium Salmonella typhimurium.

Thomas Hunt Morgan and Sex Linkage

One day in 1910, American geneticist Thomas Hunt Morgan peered through a hand lens at a male fruit fly, and he noticed it didn't look right. Instead of having the normally brilliant red eyes of wild-type Drosophila melanogaster, this fly had white eyes. Morgan was particularly interested in how traits were inherited and distributed in developing organisms, and he wondered what caused this fly's eyes to deviate from the norm. Morgan's fly lab (Figure 1) at Columbia University was already in the habit of breeding Drosophila so that the researchers there could observe the transmission of genetic traits

through successive generations, so Morgan chose to do a simple breeding analysis to find out more about white eyes. Little did Morgan know that, with this white-eyed fly, he was about to confirm the chromosome theory. In doing so, Morgan would also be the first person to definitively link the inheritance of a specific trait with a particular chromosome.

In 1956 Kornberg isolated the first DNA polymerizing enzyme, now known as DNA polymerase, which he identified as the mechanism for DNA replication.

Har Gobind Khorana (9 January 1922 – 9 November 2011) was an Indian American biochemist. While on the faculty of the University of Wisconsin, he shared the 1968 Nobel Prize for Physiology or Medicine with Marshall W. Nirenberg and Robert W. Holley for research that showed the order of nucleotides in nucleic acids, which carry the genetic code of the cell and control the cell's synthesis of proteins. Khorana and Nirenberg were also awarded the Louisa Gross Horwitz Prize from Columbia University in the same year.

Q134 "Athlete's Foot" is a disease caused by
(a) Bacteria
(b) Fungus
(c) Protozoan
(d) Nematode

Correct Answer is (b) Fungus

Athlete's foot occurs when the tinea fungus grows on the feet. You can catch the fungus through direct contact with an infected person, or by touching surfaces contaminated with the fungus. The fungus thrives in warm, moist environments. It's commonly found in showers, on locker room floors, and around swimming pools.

Q135 In the eye donation, which part of the eye is transplanted from the donor ?
(a) Cornea
(b) Lens
(c) Retina
(d) The whole eye

Correct Answer is (a) Cornea

During eye donation, mostly the whole eye ball is donated. If that the most important part is the cornea(front transparent part of eye). Cornea is the part which is transplanted. The rest of the eyeball is rarely used.

Q136 A man whose blood group is not known meets with a serious accident and needs blood transfusion immediately. Which one of the blood groups mentioned below and readily available in the hospital will be safe for transfusion ?
(a) O, Rh-

(b) O, Rh+
(c) AB, Rh-
(d) AB, Rh+

Correct Answer is (a) O, Rh-

In transfusions of packed red blood cells, individuals with type O Rh D negative blood are often called universal donors. Those with type AB Rh D positive blood are called universal recipients.

Q137 "Metastasis" is the process by which
(a) cells divide rapidly under the influence of drugs
(b) cancer cells spread through the blood or laymphatic system to other sites or organs
(c) the chromosomes in cell nuclei are attached to the spindle before moving to the anaphase poles
(d) cancer cells are successfully inhibited to divide any further

Correct Answer is (b) cancer cells spread through the blood or laymphatic system to other sites or organs

Metastasis is a pathogenic agent's spread from an initial or primary site to a different or secondary site within the host's body; it is typically spoken of as such spread by a cancerous tumor. The newly pathological sites, then, are metastases (mets).
Cancer occurs after cells are genetically altered to proliferate rapidly and indefinitely. This uncontrolled proliferation by mitosis produces a primary heterogeneic tumour. The cells which constitute the tumor eventually undergo metaplasia, followed by dysplasia then anaplasia, resulting in a malignant phenotype. This malignancy allows for invasion into the circulation, followed by invasion to a second site for tumorigenesis.

Q138 Match List I with List II and select the correct answer using the codes given below the Lists :
List I - List II
(Substance) - (Physiological role)
I. Ptyalin - (A) Converts angiotensinogen in blood into angiotensin
II. Pepsin - (B) Digests starch
III. Renin - (C) Digests proteins
IV. Oxytocin - (D) Hydrolyses fats

(E) Induces contraction of smooth muscles

Codes:
(a) I-B, II-C, III-A, IV-E
(b) I-C, II-D, III-B, IV-E
(c) I-B, II-C, IH-E, IV-A
(d) I-C, II-A, III-B, IV-D

Correct Answer is (a) I-B, II-C, III-A, IV-E

Ptyalin

An enzyme in the saliva that converts starch into dextrin and maltose.

Pepsin is an endopeptidase that breaks down proteins into smaller peptides (that is, a protease). It is produced in the stomach and is one of the main digestive enzymes in the digestive systems of humans and many other animals, where it helps digest the proteins in food.

Renin's primary function is therefore to eventually cause an increase in blood pressure, leading to restoration of perfusion pressure in the kidneys. Renin is secreted from juxtaglomerular kidney cells, which sense changes in renal perfusion pressure, via stretch receptors in the vascular walls.

The renin–angiotensin system (RAS) or the renin–angiotensin–aldosterone system (RAAS) is a hormone system that regulates blood pressure and fluid balance.
When renal blood flow is reduced, juxtaglomerular cells in the kidneys convert the precursor – prorenin, already present in the blood into renin and secrete it directly into the circulation. Plasma renin then carries out the conversion of angiotensinogen, released by the liver, to angiotensin I. Angiotensin I is subsequently converted to angiotensin II by the angiotensin-converting enzyme (ACE) found in the lungs. Angiotensin II is a potent vasoconstrictive peptide that causes blood vessels to narrow, resulting in increased blood pressure. Angiotensin II also stimulates the secretion of the hormone aldosterone from the adrenal cortex. Aldosterone causes the renal tubules to increase the reabsorption of sodium and water into the blood, while at the same time causing the excretion of potassium (to maintain electrolyte balance). This increases the volume of extracellular fluid in the body, which also increases blood pressure.

Oxytocin is a peptide hormone and neuropeptide. Oxytocin is normally produced by the paraventricular nucleus of the hypothalamus and released by the posterior pituitary. It plays a role in social bonding, sexual reproduction in both sexes, and during and after childbirth. Oxytocin is released into the bloodstream as a hormone in response to stretching of the cervix and uterus during labor and with stimulation of the nipples from breastfeeding. This helps with birth, bonding with the baby, and milk production. Oxytocin was discovered by Henry Dale in 1906. Its molecular structure was determined in 1952. Oxytocin is also used as a medication to facilitate childbirth.

Sexual activity: The relationship between oxytocin and human sexual response is unclear. At least two uncontrolled studies have found increases in plasma oxytocin at orgasm – in both men and women. Plasma oxytocin levels are notably increased around the time of self-stimulated orgasm and are still higher than baseline when measured five minutes after self arousal. The authors of one of these studies speculated that oxytocin's effects on muscle contractibility may facilitate sperm and egg transport.

Q139 Solve the given equations :
X^2 + y^2 = 34
X^4 – y^4 = 544
The values of x and y are
(a) ± 4, ± 3
(b) ± 5, ± 3

(c) ±3, ±5
(d) ±3, ±4

Not Relevant to Paper I now as it is a part of CSAT

Q140 A worker reaches his factory 3 minutes late if his speed from his house to the factory is 5 km/hr. If he walks at a speed of 6 km/hr, then he reaches the factory 7 minutes early. The distance of the factory from his house is
(a) 4 km
(b) 5 km
(c) 6 km
(d) 7 km

Not Relevant to Paper I now as it is a part of CSAT

Q141 A conveyer belt delivers baggage at the rate of 3 tons in 5 minutes, and a second conveyer belt delivers baggage at the rate of 1 ton in 2 minutes. How much time will it take to get 33 tons of baggage delivered using both the conveyer belts ?
(a) 25 minutes and 30 seconds
(b) 30 minutes
(c) 35 minutes
(d) 40 minutes and 45 seconds

Not Relevant to Paper I now as it is a part of CSAT

Q142 Water is filled in a container in such a manner that its volume doubles after every five minutes. If takes 30 minutes for the container to be full, in how much time will it be one-fourth full ?
(a) 7 minutes and 30 seconds
(b) 10 minutes
(c) 20 minutes
(d) 25 minutes

Not Relevant to Paper I now as it is a part of CSAT

Q143 A city has a population of 3,00,000 out of which 1,80,000 are males. 50% of the population is literate. If 70% of the males are literate, the number of literate females is
(a) 24,000
(b) 30,000
(c) 54,000
(d) 60,000

Not Relevant to Paper I now as it is a part of CSAT

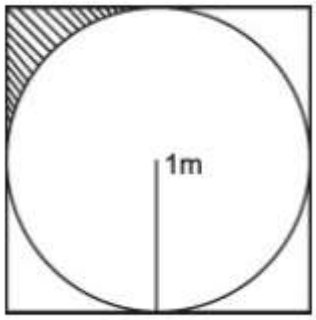
Q144 In a survey, it was found that 80% of those surveyed owned a car while 60% of those surveyed owned a mobile phone. If 55% owned both a car and a mobile phone, what per cent of those surveyed owned a car or a mobile phone or both ?
(a) 65%
(b) 80%
(c) 85%
(d) 97.5%

Not Relevant to Paper I now as it is a part of CSAT

Q145 In 1930, a person's age was 8 times that of his son. In 1938, the father's age became ten times that of his son's age in 1930. The ages of the son and father in 1940 were, respectively.
(a) 16 years, 58 years
(b) 15 years, 50 years
(c) 14 years, 42 years
(d) 13 years, 34 years

Not Relevant to Paper I now as it is a part of CSAT

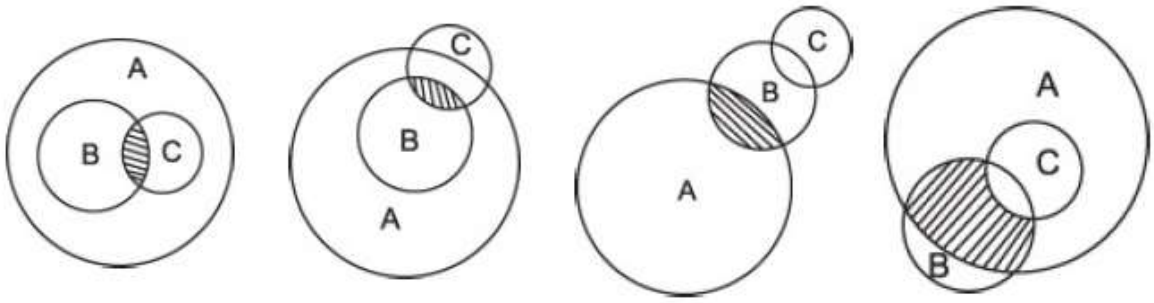
Q146



A circle of 1 m radius is drawn inside a square as shown in the figure given above. What is the area of the shaded portion in m2?
(a) (4 - p)
(b) 1 + (p/2)
(c) (1/4) - (p/4)
(d) 1 - (p/4)

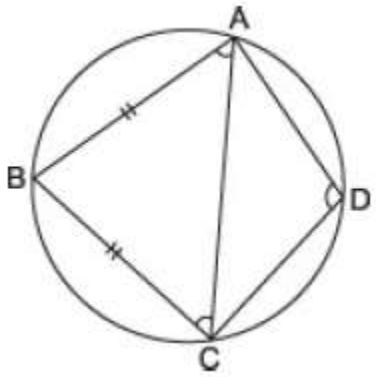
Not Relevant to Paper I now as it is a part of CSAT

Q147 Most guitarists are bearded males. If A represents all males, B represents bearded males and C represents all male guitarists, then the correct diagram for their relation (shaded portion) is



Not Relevant to Paper I now as it is a part of CSAT

Q 148



In the above figure, ABCD is a cyclic quadrilateral, AB = BC and angle BAC = 70°, then angle ADC is
(a) 40°
(b) 80°
(c) 110°
(d) 140°

Not Relevant to Paper I now as it is a part of CSAT

Q149 Anand must be a vegetarian because he is a Buddhist.
The argument assumes that
(a) most Buddhists are vegetarians
(b) all Buddhists are vegetarians
(c) only Buddhists are vegetarians
(d) most vegetarians are Buddhists

Not Relevant to Paper I now as it is a part of CSAT

Q150 A person travels from X to Y a speed of 40 kmph and returns by increasing his speed by 50%. What is his average speed for both the trips ?
(a) 36 kmph
(b) 45 kmph
(c) 48 kmph
(d) 50 kmph

Not Relevant to Paper I now as it is a part of CSAT