

# SCIENCE & TECHNOLOGY

## TEST PAPER-2

1. 'Antibiotics' is a type of antimicrobial used in the treatment and prevention of bacterial infection. Consider the following statements with reference to 'Antibiotics'

1. Antibiotics can only be used against bacteria.
2. Antibiotics are effective against viruses.
3. Overuse of Antibiotics leads to development of anti-bacterial resistance in bacteria

Select the CORRECT statement(s) in following:

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

2. 'Nitrogen Cycle' is the process by which nitrogen is converted between its various chemical forms. Which of the following would release nitrogen in cycle?

- (a) Fossil fuel combustion
- (b) Use of artificial nitrogen fertilizers
- (c) Excreta of animals
- (d) All of the above

3. Consider the following pairs:

Stages of food Processing in animals	Details
1. Ingestion	: Food is broken into molecules enough for the body digestion
2. Digestion	: First stage of food processing.
3. Absorption	: The final stage of food processing. Cells start taking molecules such as amino acids.

Which of the above pairs is/are correctly matched?

- (a) Only 1
- (b) Only 1 and 2
- (c) Only 3
- (d) None of the above

4. 'E-fuel' is the next future of renewable energy. Consider the following statements:

1. It is created by sequencing of hydrogen and plant juices.
2. E-fuel cannot be used directly in combustion engines.
3. Energy released on combustion of per unit liter of e-fuel is significantly lower than conventional fuels.

Select the correct statement(s) given below:

- (a) Only 2
- (b) Only 1
- (c) Only 1 and 2
- (d) All of the above

5. "Antioxidants" are the substances that prevent the body from the attack of free radicals. With reference to it, consider on the following:

1. Fresh fruits and vegetables are rich sources of antioxidants.
2. "Antioxidants" are used as food additives to help guard against food deterioration.

Which of the statements given above is/are correct?

- (a) Only 1
- (b) Only 2
- (c) both 1 and 2
- (d) Neither 1 nor 2

6. Consider the following pairs:

- |               |                          |
|---------------|--------------------------|
| 1. Beriberi   | Deficiency of Vitamin B  |
| 2. Anaemia    | Deficiency of Hemoglobin |
| 3. Diphtheria | Bacterial Infection      |

Which of the above pairs is/are correctly matched?

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



**7. In Vitro Fertilization (IVF) is increasingly becoming famous among infertilised parents. Regarding IVF consider on the following statements:**

1. It can be used only in case of blocking of females fallopian tube.
2. There is no formal law governing IVF and surrogacy in India.

*Which of the statements is/are true?*

- (a) Only 1      (b) Only 2  
(c) Both 1 and 2      (d) None of the above

**8. What is the major difference between plant cell and animal cell?**

- (a) Shape of plant cell is round while shape of animal cell is rectangular.
- (b) The cell wall is present in plant cell whereas the cell wall is absent in animal cell.
- (c) Plant cells don't have mitochondria, whereas animal cells do
- (d) All of the above

**9. Assertion (A):** Lichen is a composite organism emerges from algae living on fungus. They are considered as very effective indicator of climate change.

**Reason (R):** Lichens are extremely sensitive to environmental disturbances.

*Select the correct option given below:*

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

**10. Consider the following match:**

1. Red Blood Cells : Responsible for (RBC) body's immune system.
2. White Blood Cells : Responsible for (WBC) carrying oxygen from the lungs to different tissues and organs.
3. Plasma : Transportation of nutrition to tissues and returns of waste materials to kidney.

*Which of the above pairs is/are CORRECT?*

- (a) Only 1      (b) Only 1 and 2  
(c) only 3      (d) None of the above

**11. "Data Exclusivity" has been a contentious issue in the Indian IPR regime. Consider the statements with reference to "Data Exclusivity":**

1. It refers to the exclusive rights of the authority on the field trials data of a product.
2. Data Exclusivity is the exclusive rights of the product manufacturer on data generated throughout the making process.
3. Strict Data Exclusivity incentivize ever greening of patents

*Select the CORRECT answer:*

- (a) Only 1      (b) Only 1 and 2  
(c) Only 2 and 3      (d) All of the above

**12. The agreement on Trade Related Aspects of Intellectual Property Rights (TRIPs) is an International agreement administering intellectual property. Which of the given statement(s) is TRUE:**

- (a) It is legally binding on all member countries of WTO.
- (b) TRIPs only has provisions related to enforcement and protection and does not say about dispute resolution.
- (c) TRIPs Plus is the bilateral agreement while TRIPs is a multilateral agreement.
- (d) None of the above

**13. Ethanol is used in petrol engines as a replacement for gasoline.**

*Consider the following statements:*

1. Ethanol has lesser energy density than gasoline.
2. Blending of Ethanol increases the thermal efficiency of the fuel.
3. Blended petrol is environment friendly.

*Which of the statement (s) is/are TRUE?*

- (a) Only 1      (b) Only 1 and 2  
(c) Only 2 and 3      (d) All of the above



- 14. Molasses and Bagasse are both important by products of sugar industry. What is the difference between two?**
- Molasses is the primary by product while Bagasse is the secondary by-product.
  - Bagasse can be used directly as a fuel whereas Molasses cannot be
  - Both a and b
  - None of the above
- 15. Even after passing more than a decade bio fuel policy has not yielded desired results. Why Ethanol blended petrol's share is such abysmally low?**
- Poor availability of Ethanol
  - Heavy excise duty on inter-state Ethanol trade
  - Ban on import of Ethanol for blending program
  - All of the above
- 16. Consider the following pairs:**
- |                                |   |
|--------------------------------|---|
| 1. Emission Trading            | (A) Developed countries can invest in emission reduction projects in another developed country.                 |
| 2. Joint Implementation        | (B) A mechanism that allows to buy Kyoto units from other Units.  |
| 3. Clean Development Mechanism | (C) Developed countries meet their emission reduction commitments from developing or least developed countries. |
- Select the correct pair(s):
- | A     | B | C |
|-------|---|---|
| (a) 1 | 2 | 3 |
| (b) 2 | 1 | 3 |
| (c) 1 | 3 | 2 |
| (d) 2 | 3 | 1 |
- 17. "Carbon leakage" is a major issue with the carbon pricing economics. What "carbon leakage" refers to?**
- It refers to the constant falling of prices of carbon tax.
  - It refers to the emission of carbon in another country due to regulatory procedure of one country.
  - Both (a) and (b)
  - None of the above
- 18. With reference to Multi-Drug Resistant TB, consider the following statements:**
- MDR-TB caused by bacteria that is resistant to at least two drugs of first line therapy.
  - MDR-TB infection is not primary and evolves as the secondary TB stage.
- Select the correct statement(s) from the given below statement(s):
- Only 1
  - Only 2
  - 1 and 2 both
  - None of the above
- 19. The maximum number of species among the Indian Fauna belongs to .....?**
- Mammals
  - Reptiles
  - Molluses
  - Arthropods
- 20. Consider the following statements:**
- The Sulphur content in sour crude oil is higher in comparison to sweet crude oil.
  - Brent crude oil is a sour crude oil.
  - Most of Brent crude oil comes from North Sea.
- Which among the above statements is/are true?
- Only 1 and 2
  - Only 1 and 3
  - Only 2 and 3
  - All of the above
- 21. Consider the following statements with reference to the oil gas fields in India:**
- The number of only oil producing fields is greater to in comparison to the number of only gas producing fields.
  - Around half of India's total oil and gas fields produce both oil and gas.
- Which among the above statement (s) is/are correct?
- Only 1
  - Only 2
  - Both 1 and 2
  - None of the above



**22. Consider the following statements:**

1. India's onshore crude oil production is significantly higher than offshore crude oil production.
  2. India's offshore natural gas production is significantly higher than onshore natural gas production.

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



23. Natural gas is often described as the cleanest fossil fuel. With this reference consider the following statements:

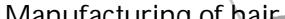
1. Natural gas produces less carbon dioxide per joule delivered than either coal or oil.
  2. Natural gas makes insignificant percentage of human emissions.
  3. Natural gas is less potent green house gas in comparison to carbon dioxide.

Select the correct statement(s)



24. In recent times, health concerns have been raised concerning human exposure to coal tar.

**The various applications of coal tar include:**

- 
  1. Manufacturing of hair dyes and soaps
  2. Construction of roads
  3. Manufacturing of paints
  4. Manufacturing of photographic materials

Which among the above statement (s) is/are CORRECT?



25. Offshore drilling is increasingly becoming a popular oil/gas production technology. What advantages it offers over land based installations?

1. Offshore oil and gas production is cheaper and easier than land based installations.
  2. Offshore oil and gas production is environment friendly.
  3. Land oil has already been exploited in most places.

*Choose the correct option from the codes given below:*



**26. Which of the following is NOT Green House Gas (GHG)?**

- |                  |                         |                                 |
|------------------|-------------------------|---------------------------------|
| 1. $\text{CO}_2$ | 2. $\text{N}_2\text{O}$ | 3. $\text{H}_2\text{O}$ (vapor) |
| 4. $\text{SO}_2$ | 5. $\text{CH}_4$        |                                 |
| (a) 3 only       | (b) 4 only              |                                 |
| (c) 1 and 4 only | (d) 3 and 4 only        |                                 |

27. Which of the following statements are true with regards to Bio-Digester toilets?

- When human excreta comes in contact with bacteria, it gets converted into methane and water through a series of steps of anaerobic digestion
  - These toilets are not suitable for sub zero temperatures and work in a limited range of temperature
  - Bio-Digesters maintain required temperatures by geothermal and microbial heat.
  - It is 100% maintenance free

**28. Which of the following is NOT an effect of depletion of ozone layer?**



**29. Which of the following sectors is responsible for the maximum anthropogenic emission of Green House Gases (GHGs):**

- (a) Transparent
  - (b) Power Stations
  - (c) Industrial process
  - (d) Waste disposal & treatment



**30. International Union for Conservation of Nature (IUCN) is a very important institution towards conservation:**

1. IUCN came up into existence after the Earth Summit of 1992.
2. IUCN is the world's oldest and largest global environmental organization.
3. IUCN is an organization of Multinational Corporations united to fight conservation efforts.
4. IUCN is a collaboration of both the government agencies and private conservation groups.

*Which of the above statements are NOT true?*

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

**31. Which of the following is/are Aichi target, which is an outcome of Nagoya Protocol?**

1. Protection of the coral reefs
2. Protection of the marine and coastal areas
3. Reduction in the loss of the natural habitat
4. Conservation of the forest areas

*The correct code is:*

- (a) 1, 2 and 3      (b) 2, 3 and 4  
(c) 1, 3 and 4      (d) All of the above

**32. Which of the following aspect is/are included in Bio-piracy?**

1. Violation of the environmental laws
2. Misuse of the traditional knowledge
3. Exploration of the traditional forest dwellers commercially

*Correct Code is:*

- (a) Only 1      (b) Both 1 and 2  
(c) Both 2 and 3      (d) All of the above

**33. With reference to Compressed Natural Gas (CNG). Consider on the following statements:**

1. CNG is a mixture of hydrocarbons mainly of Methane upto 80-90%.
2. It is a liquid fuel
3. It is more abundant compare to LPG and cheaper too.

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

- (a) Only 1      (b) Only 1 and 2  
(c) Only 1 and 3      (d) All of the above

**34. Montreal Protocol is related to:**

- (a) Ozone depletion  
(b) Emission Trading  
(c) Biopiracy  
(d) Wetland Conservation

**35. International Panel on Climate Change (IPCC) is the leading institution working towards climate change science. Consider the following statements:**

1. It is a formal inter-governmental organization under United Nations Organisation (UNO)
2. This is an open platform, where anyone can voluntarily contribute.

*Select the correct statement(s)*

- (a) Only 1      (b) Only 2  
(c) Both 1 and 2      (d) None of the above

**36. What of the following is true about Global Dimming?**

- (a) The process prevents heat and energy of sun to reach at earth surface because of massive polluted clouds.
- (b) It is the average drop in the temperature of extreme polar areas
- (c) Decreasing of Glaciers in mountains
- (d) None of the above

**37. Radio Frequency Identification (RFID) technique is increasingly being used in transport sector. Consider the following statements regarding this:**

1. Unlike Bar-Code identification, RFID needs not to have target object in the line of sight.
2. Compare to other existing identification techniques, RFID tags can hold much more data, which enables it to be used for detailed information of objects.

*Select the correct statement(s) from given below:*

- (a) Only 1      (b) Only 2  
(c) 1 and 2 both      (d) None of the above



**38. Which of the following establish a distinction between Code Division between Multiple Access (CDMA) and Global System of Mobile (GSM)?**

- (a) CDMA can be used for voice or data but GSM can only be used for data.
- (b) Data carrying speed of GSM is comparatively higher than CDMA
- (c) Both a and b
- (d) None of the above

**39. Consider the following pairs:**

- |            |   |
|------------|---|
| 1. Tejas   | A. Indigenously developed Light Combat Aircraft (LCA)               |
| 2. Lakshya | B. India's indigenous remote piloted vehicle (RPV) for surveillance |
| 3. Nishant | C. Pilotless assault aircraft.                                      |

Select the correct match(s) from the given below option(s)

- |          |          |          |
|----------|----------|----------|
| <b>A</b> | <b>B</b> | <b>C</b> |
| (a) 1    | 2        | 3        |
| (b) 1    | 3        | 2        |
| (c) 2    | 1        | 3        |
| (d) 2    | 3        | 1        |

**40. Holographic technology has revolutionized the three dimensional image science. Consider the following statements with reference to it.**

- 1. Holographic technology is primarily an application of laser.
- 2. With the help of this technology exact replica of the objects can be created

Select the correct statement(s) from the given below:

- (a) Only 1
- (b) Only 2
- (c) 1 and 2
- (d) None of the above

**41. Consider the following statements:**

- 1. Unsaturated fats are conventionally regarded as 'healthier' than saturated fats
- 2. Omega-3 fatty acids polyunsaturated fatty acids

Which among the above is/are correct statement(s)

- (a) Only 1
- (b) Only 2
- (c) 1 and 2 both
- (d) None of the above.

**42. Which among the following is most polluting industry among the four?**

- (a) Cement
- (b) Synthetic Rubber
- (c) Food Processing
- (d) Stone crushing

**43. Consider the following statements:**

- 1. The carbon content in cast Iron is less than that in Pig iron.
- 2. Wrought iron has lower carbon content than both the cast iron and pig iron

Which among the above statement(s) is/are True?

- (a) Only 1
- (b) Only 2
- (c) 1 and 2 both
- (d) None of the above

**44. With reference to energy production gas Hydrates are-**

- 1. Source of Methane gas
- 2. Abundant in sea-beds in deep oceans and the permafrost regions.
- 3. Safely exploitable source energy

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

- (a) Only 1
- (b) Only 1 and 2
- (c) Only 1 and 3
- (d) All of the above

**45. Which among the following methods of heat transfer is maximum responsible for heating of the lower layers of the atmosphere near earth's surface?**

- (a) Radiation from sun
- (b) Radiation from earth
- (c) Conduction
- (d) Convection

**46. Immunodeficiency can result from which of the following?**

- 1. Malnutrition
- 2. Gene mutation
- 3. Infection

Choose the correct option from the codes below:

- (a) 1 and 2
- (b) 2 and 3
- (c) 1 and 3
- (d) All of the above



**47. Consider the following statements:**

**Assertion (A):** For good health, it is necessary to regularly have diets rich in Vitamins B group and C.

**Reason (R):** Most of the vitamins in Group B and C are water soluble and thus can not be stored in the body. They can be easily discharged from the body.

*In the context of the statements above, which of these is true?*

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

**48. Consider the following statements about photochemical smog:**

- 1. It occurs in warm, dry and sunny climate.
- 2. It is a powerful eye irritant.
- 3. Hydrocarbons and nitrogen oxides are its major components.

*Choose the correct option from the codes below:*

- (a) All of the above
- (b) 2 and 3
- (c) 1 and 2
- (d) 1 and 3

**49. Consider the following statements about cellulosic ethanol:**

- 1. It is also known as second generation ethanol.
- 2. It is not made from starch or sugar.
- 3. Despite being a major replacement for ethanol, it has not been commercially utilized till date.

*Choose the correct option from the codes below:*

- (a) All of the above
- (b) 2 and 3
- (c) 1 and 2
- (d) 1 and 3

**50. The use of Artificial sweeteners have increased in the recent times owing to the needs of diabetic patients and calorie conscious individuals. Consider the following statements:**

- 1. No artificial sweetener is as stable as natural sugar and hence can not be used at cooking temperatures.
- 2. Artificial sweeteners may not provide any calorie to the human body at all.

*Which of these is/are true?*

- (a) Only 1
- (b) Only 2
- (c) Both
- (d) None of the above

**51. Consider the following statements:**

- 1. The greater the Biological Oxygen Demand (BOD) of the water, the greater is its polluting tendency.
- 2. The use of bio-fertilizers even if toxic to some pests is considered to be a part of organic farming.

*Which of these is/are true?*

- (a) Only 1
- (b) Only 2
- (c) Both
- (d) None of the above

**52. Which of the following are bio-fertilizers?**

- 1. Cyanobacteria
- 2. Blue-green algae
- 3. Azotobacter

*Choose the correct option from the codes below:*

- (a) 1 and 2
- (b) 2 and 3
- (c) 1 and 3
- (d) All of the above

**53. Consider the following statements about Single Cell Protein (SCP):**

- 1. It is used for preserving the genetic database of rare protein-rich food crops.
- 2. SCP can also be used as food by human beings.
- 3. The productivity of nutrients in SCP is much lower than conventional agricultural production of cereals, fruits, pulses etc.

*Choose the correct option from the codes below:*

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

**54. Tissue culture is a technique of regenerating the whole plant from parts of a plant.**

**Consider the following statements about tissue culture:**

- 1. It can be practiced both in the agricultural field and in the laboratory.
- 2. The plants obtained after tissue culture are genetically identical to the original plant from which they were grown.
- 3. Plants having a disease even in one part can not be used in tissue culture.

*Choose the correct option from the codes below:*

- (a) 1 and 2
- (b) 2 and 3
- (c) 1 and 3
- (d) All of the above





- 64. Consider the following statements about hydrocarbons:**
1. They are formed by incomplete combustion of fuel used in automobiles.
  2. Hydrocarbons are carcinogenic.
  3. They can cause ageing in plants and make them shed leaves and flowers.
- Choose the correct option from the codes below:*
- (a) All of the above      (b) 2 and 3
  - (c) 1 and 2                (d) 1 and 3
- 65. Consider the following statements:**
- Assertion (A):** Normally rain water is acidic even if it is not acid rain.
- Reason (R):** While raining, the water reacts with carbon dioxide present in the atmosphere.
- In the context of the statements above, which of these is true?*
- (a) Both A and R are true and R is the correct explanation for A.
  - (b) Both A and R are true and R is not the correct explanation for A.
  - (c) A is incorrect but R is correct.
  - (d) A is correct but R is incorrect.
- 66. The compound Histamine plays a significant role in human bodies. Which of the following roles are played by it?**
1. It stimulates the release of acid in the stomach.
  2. It is known to be responsible for nasal congestion associated with common cold.
  3. It is also associated with allergic response to pollen.
- Choose the correct option from the codes below:*
- (a) All of the above      (b) 2 and 3
  - (c) 1 and 2                (d) 1 and 3
- 67. Depression is increasingly affecting the mental and physical health of individuals in a modern society. Which of the following statements is/are true regarding it?**
1. It can be caused by high production of neurotransmitters like noradrenaline in the body.
  2. Low signal-sending activity in the neurons is also associated with depression.
  3. Medicines such as sleeping pills contain tranquilizers which help tackle depression.
- Choose the correct option from the codes below:*
- (a) 1 and 2                (b) 2 and 3
  - (c) 1 and 3                (d) All of the above
- 68. Consider the following statements about anti-microbial agents:**
1. Iodine is a powerful antiseptic.
  2. Disinfectants can be applied to both inanimate and animate objects, including the human body.
  3. Same substance can act as disinfectant and antiseptic by varying the concentration.
- Choose the correct option from the codes below:*
- (a) All of the above      (b) 2 and 3
  - (c) 1 and 2                (d) 1 and 3
- 69. Which of the following can be used as food preservatives?**
1. Common salt
  2. Sugar
  3. Vegetable oil
- Choose the correct option from the codes below:*
- (a) 1 and 2                (b) 2 and 3
  - (c) 1 and 3                (d) All of the above
- 70. A clothe dyer is finding it difficult to dye clothes as the dye is not being absorbed on the cloth evenly and the cloth is looking dull because of this.. There is no problem with the dye. What can be a possible reason for this?**
- (a) The cloth piece has been washed with hard water.
  - (b) The cloth piece has been kept in ethanol for some time and then dried.
  - (c) The cloth piece has been kept in sunlight for long.
  - (d) None of the above
- 71. Bottled fruit juices made in the market are clearer as compared to those made at home. Why?**
- (a) Fruit juice made in the market is impure whereas the one made at home is pure.
  - (b) Market made juices are clarified by the use of pectinases and proteases (enzymes).
  - (c) Market made juices contain strong preservatives which react with the cell walls of the fruit juice breaking them.
  - (d) Glucose and other additives that are added to the market made juice enhance the clarity of the juice.





**79. Catalytic converters are fitted in automobiles for reducing emission of poisonous gases. Which of the following metals are used as catalysts in it?**

1. Rhodium
2. Platinum-palladium
3. Strontium

*Choose the correct option from the codes below:*

- (a) All of the above      (b) 2 and 3  
(c) 1 and 2                  (d) 1 and 3

**80. Sulphur is a major pollutant. It can enter the atmosphere through which of the following sources?**

1. Volcanic eruptions
2. Combustion of fossil fuels
3. From surface of ocean and from gases released by decomposition

*Choose the correct option from the codes below:*

- (a) 1 and 3                  (b) 1 and 2  
(c) 2 and 3                  (d) All of the above

**81. Consider the following statements:**

**Assertion (A):** There is a practice of measuring amount of pollutants in fatty tissues of organisms for getting a measure of the pollutants that have a tendency for Bio-Magnification.

**Reason (R):** If the pollutant is soluble in water, it will be excreted by the organism. But, pollutants that dissolve in fats may be retained for a longer period of time.

*In the context of these statements, choose the correct option:*

- (a) A and R both are true, and R may be a possible reason for A.  
(b) A and R both are true, but R does not explain A.  
(c) A is true, R is false.  
(d) A is false, R is true.

**82. Nitrogen fixation on earth can be achieved in which of the following ways?**

1. By micro-organisms.
2. By man using industrial processes.
3. By thunder and lightning.

*Choose the correct option from the codes below:*

- (a) 1 and 2                  (b) 1 and 3  
(c) 2 and 3                  (d) All of the above

**83. The sons of a colour blind woman are always blind but not the daughters because:**

- (a) the gene for colour blindness inherited from mother is dominant over the natural gene from the father
- (b) the colour blindness gene is a recessive gene borne on the X chromosome and the sons inherit it only from mother but daughters inherit from both father and mother
- (c) the gene for colour blindness is recessive gene inherited by sons only from mother and the daughters inherit it only from father
- (d) the female hormone in girls does not allow the expression of the colour blindness gene in daughters

**84. Photographic plates are covered with black paper because**

- (a) the cellulose acetate of the paper must remain fresh
- (b) sunlight is easily absorbed by black paper and it helps develop the film
- (c) the silver bromide present on the plate is very sensitive to light and black paper prevents contact with light
- (d) None of the above explains it

**85. Consider the following statements about transfats:**

1. They are saturated fats.
2. They are used in processed food to increase its shelf life, inter alia.
3. Consumption of transfats increases the risk of coronary heart disease in humans.

*Choose the correct option from the codes below:*

- (a) 1 and 3                  (b) 1 and 2  
(c) 2 and 3                  (d) All of the above

**86. Consider the following statements about an alternative fuel ethanol, which is recommended in the National Bio-fuel policy:**

1. It burns cleaner and more completely than petrol.
2. Ethanol can be derived from sugar cane juice and molasses
3. The Sumitra Chaudhary Committee has recommended 20% blending of ethanol with petrol by 2017.

*Choose the correct ones from the codes below:*

- (a) 1 and 2                  (b) 2 and 3  
(c) 1 and 3                  (d) All of the above



**87. Which of the following is true about Hydro Fluoro Carbons (HFCs):**

1. They need not be prepared synthetically.
2. Montreal Protocol bans HFCs.
3. They contribute substantially to ozone layer depletion.
4. They are greenhouse gases.
5. They are used widely in cooling systems.

*Choose the correct ones using the code below:*

- (a) 3, 4 and 5
- (b) 1, 2 and 3
- (c) 4 and 5
- (d) All of the above

**88. Which of the following can be ways through which the supply of oxygen in water is regulated?**

1. Diffusion from air
2. Photosynthetic activity of aquatic plants.
3. Breakdown of carbon dioxide under deep water.

*Choose the correct ones using the codes below:*

- (a) 1 and 2
- (b) 2 and 3
- (c) 1 and 3
- (d) All of the above

**89. Consider the following statements about ectotherms (cold-blooded animals):**

**Assertion (A):** Their body temperature tends to match with the environmental temperature in which they live.

**Reason (R):** They cannot control their body temperature by physiological activities.

*In the context of the statements above, which of these is true?*

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

**90. Consider the following statements:**

**Assertion (A):** During autumn and spring there is a bloom of phytoplankton growth in lakes.

**Reason (R):** In these seasons, the lake water churns and redistributes water and oxygen which are vital for the growth of phytoplankton.

*In the context of the statements above, which of these is true?*

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

**91. Consider the following statements about Bharat Emission Stage Standards:**

1. It not only applies to motor vehicles but also to power plants.
2. It permits some lead and sulphur content in fuels.
3. It does not include regulations for CO<sub>2</sub>.

*Choose the correct ones from the codes below:*

- (a) 1 and 2
- (b) 2 and 3
- (c) 1 and 3
- (d) All of the above

**92. Which of the pollutants are covered under Bharat Emission Stage Standards:**

1. CO
2. Hydrocarbons
3. Particulate matter
4. NOX

*Choose the correct ones from the codes below:*

- (a) 1 and 2
- (b) 2, 3 and 4
- (c) 1 and 4
- (d) All of the above

**93. Candidemia is a major infection related disease spread in India. Which of the following causes Candidemia?**

- (a) Bacteria
- (b) Fungi
- (c) Virus
- (d) Protozoa



**94. Escherichia coli:**

1. Is one of the bacteria found in human intestine
2. helps in the synthesis of some important vitamins
3. can grow in either the presence or absence of oxygen
4. used in production of human Insulin

Select the correct statements from the codes given below:

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

**95. Which among the following comparisons of the Haemophilia A and haemophilia B is/are correct?**

1. While Haemophilia A is a genetic disease, Haemophilia B is a rare non-genetic disease
2. While in Haemophilia A person bleeds for longer time, in Haemophilia B, a person bleeds more profoundly

Choose the correct option from the codes given below:

- (a) Only 1 is correct  
(b) Only 2 is correct  
(c) Both 1 & 2 are correct  
(d) Neither 1 nor 2 is correct

**96. Consider the following:**

- |               |                |
|---------------|----------------|
| 1. Rhizobium  | 2. Azotobacter |
| 3. Mycorrhiza | 4. Azolla      |

Which among the above are Biofertilizers?

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

**97. How the Japanese Encephalitis is different from the Virus Encephalitis?**

1. While Japanese Encephalitis is a mosquito borne disease, Virus Encephalitis is a water borne disease
  2. While Japanese Encephalitis results in Acute encephalitis syndrome, or AES, Virus Encephalitis does not result in such disease
- Choose the correct option from the codes given below:

- (a) Only 1 is correct  
(b) Only 2 is correct  
(c) Both 1 & 2 are correct  
(d) Neither 1 nor 2 is correct

**98. With reference to human body, the functions of Insulin is/are:**

1. Preventing absorption of glucose from the blood
  2. Facilitation of storing of glucose as glycogen
  3. Prevention of use of fat for deriving energy
- Choose the correct option from the codes given below:

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

**99. With reference to the lifestyle caused heart diseases viz. Angina & Heart Attack, which among the following statements is / are correct?**

1. While Angina is a condition wherein the arteries are narrowed down, reducing the blood supply to the heart, in heart attack, arteries are completely blocked due to blood clots or fat deposits
2. While Angina is a short term or temporary blockage of the blood flow to the heart, Heart Attack is a permanent blockage of the blood flow to the heart

Choose the correct option from the codes given below:

- (a) Only 1      (b) Only 2  
(c) Both 1 & 2      (d) Neither 1 nor 2

**100. Which among the following comparisons of the Aplastic anaemia and Sickle Cell Anaemia is/are correct?**

1. While Aplastic anaemia is non-genetic, Sickle Cell Anaemia is a genetic disease
2. While Aplastic anaemia is caused due to mutation of a protein, Sickle Cell Anaemia is caused due to changes in Bone Marrow

Choose the correct option from the codes given below:

- (a) Only 1      (b) Only 2  
(c) Both 1 & 2      (d) Neither 1 nor 2





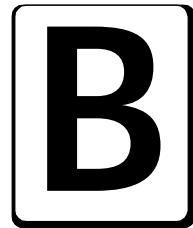
# GS MENTORS

An Institute of Top IAS Trainers

## IAS2015 P.T. TEST SERIES

GS-I<sup>st</sup> PAPER (SCIENCE & TECHNOLOGY)

### TEST BOOKLET



Maximum Marks: 200

Time Allowed: 2 Hours

#### INSTRUCTIONS

1. IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS TEST BOOKLET DOES NOT HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS, ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET.
2. You have to enter your Roll Number on the Test Booklet in the Box provided alongside. DO NOT write anything else on the Test Booklet.
3. This Test Booklet contains **100** items (questions). Each item is printed in English. Each item comprises four responses (answers). You will select the response which you want to mark on the Answer Sheet. In case you feel that there is more than one correct response, mark the response which you consider the best. In any case, choose **ONLY ONE** response for each item.
4. You have to mark all your responses **ONLY** on the separate Answer Sheet provided. See directions in the Answer Sheet.
5. All items carry equal marks.
6. Before you proceed to mark in the Answer Sheet the response to various items in the Test Booklet, you have to fill in some particulars in the Answer Sheet as per instructions sent to you with your Admission Certificate.
7. After you have completed filling in all your responses on the Answer Sheet and the examination has concluded, you should hand over to the Invigilator only the Answer Sheet. You are permitted to take away with you the Test Booklet.
8. Sheets for rough work are appended in the Test Booklet at the end.
9. **Penalty for wrong answers:**

**THERE WILL BE PENALTY FOR WRONG ANSWERS MARKED BY A CANDIDATE IN THE OBJECTIVE TYPE QUESTION PAPERS.**

- (i) There are **four** alternatives for the answer to every question. For each questions for which a wrong answer has **been** given by the candidate **one-third** of the marks assigned to that question will be deducted as penalty.
- (ii) If a candidate gives more than one answer, it will be treated as a **wrong answer** even if one of the given answers happens to be correct and there will be same penalty as above to that question.
- (iii) If a question is left blank, i.e. no answer is given by the candidate, there will be **no penalty** for question.

**DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE ASKED TO DO SO**