



All India Civil Services Coaching Centre

(Under the aegis of Government of Tamil Nadu)

TEST BOOKLET

Environment and Science & Technology

Time Allowed: 2 Hours

Maximum Marks: 200

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 Name on the Test Booklet
3. This Test Book contains 100 items (questions). Each it 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 response **ONLY** on the separate sheet provided along with the Test Booklet.
5. All items Carry equal marks. There will be **penalty (negative marking)** for wrong answers marked by you in the Answer sheet.
6. There are four alternatives for the answers to every question. For each question for which a wrong answer has been given by the candidate, one third ($\frac{1}{3}$) of the marks assigned to that question will be deducted as penalty.
7. 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 same penalty as above for that question.
8. If a question is left blank i.e., no answer is given by the candidate, there will be no penalty for that question.

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



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- Consider the following statements with reference to criteria for being an endangered species :
 - Reduction in more than 75% population over the last 10 years.
 - Probability of extinction in wild is at least 30% in 20 years.
 - Population size is estimated to number fewer than 250 mature individuals.Which of the above statements is/are incorrect?
 - 1 and 2 only
 - 2 and 3 only
 - 1 and 3 only
 - None of the above
- Consider the following statements related to Mangroves for the Future initiative :
 - The project is undertaken by International Union for Conservation of Nature
 - The initiative is not only confined to Mangrove ecosystem but includes other ecosystems like lagoons, sea grasses
 - It aims to promote investment in coastal ecosystem conservation for sustainable development
 - India withdrew from the initiative in 2018 citing discriminatory treatmentWhich of the statements given above is/are correct?
 - 1 only
 - 2 and 4 only
 - 1, 2 and 3 only
 - 1, 2, 3 and 4
- Listed below are some methods used to treat solid waste. Which of the following methods and its description are correctly matched?
 - Pyrolysis – Burning waste in large furnaces at high temperatures
 - Vermiculture – Biological process in which micro-organisms decompose degradable organic waste
 - Incineration – Combustion in absence of oxygen or under controlled atmosphere of oxygen
 - Composting – Decomposition of organic waste with the help of earthwormsSelect the correct answer using the code given below:
 - 1 and 3 only
 - 2 and 4 only
 - 1, 2, 3 and 4
 - None of the above
- Consider the following statements about Red Sanders:
 - It is classified as endangered by the IUCN.
 - It is found in the Western Ghats and the Western Himalayas.Which of the statements given above is/are correct?
 - 1 only
 - 2 only
 - Both 1 and 2
 - Neither 1 nor 2
- Which of the following statements is/are correct?
 - In a coastal zone, mangrove ecosystems, sea grass ecosystems and seaweed ecosystems are included.
 - A Coastal Regulation Zone (CRZ) consists of coastal land up to 2,000 metres from the High Tide Line (HTL).Select the correct answer using the code given below:
 - 1 only

- (b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2
6. Consider the following statements about Agasthyamalai Biosphere Reserve:
1. Its area falls in the Malabar rainforests and is one of the noted hotspot in the Western Ghats.
 2. It includes the Indian eco-regions of moist deciduous forests.
- Which of the above statements is/are correct?
- (a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2
7. Consider the following statements regarding Indicator species:
1. It is among the most sensitive species in a region.
 2. Lichens and amphibians are indicators of water quality.
- Which of the above statements is/are correct?
- (a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2
8. For the protection of environment, Protected Area Network (PAN) is developed across the country. Which of the following is/are correct about Protected Area Network (PAN) in India?
1. Wildlife Protection Act provides for declaration of Wildlife Sanctuary only and National Parks are declared under Environment Protection Act.
 2. National Parks enjoy greater degree of protection than Wildlife Sanctuary.
 3. National Parks are species centric and Wildlife Sanctuaries are region centric.
- Select the correct answer using the code given below:
- (a) 1 only
(b) 1 and 2 only
(c) 2 only
(d) 1, 2 and 3
9. Which of the following are the possible impacts of Invasive species?
1. Increase in biodiversity
 2. The decrease in endemic Species
 3. Degradation of marine and freshwater ecosystems
 4. Increase in crop and stock yields
- Select the correct answer using the code given below:
- (a) 1 and 3 only
(b) 2 and 3 only
(c) 2 and 4 only
(d) 1 and 4 only
10. Consider the following statements with reference to Wildlife Crime Control Bureau
1. It is a statutory multi-disciplinary body established by the Government of India.
 2. It assists both central and state governments to ensure success in prosecution related to Wildlife crimes.
- Which of the statements given above is/are correct?
- (a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2
11. Which of the following is/are the objective(s) of the restructured National Bamboo Mission (NBM)?
1. To increase the area under bamboo plantation in non-forest government and private lands to supplement farm income.
 2. To rejuvenate the under developed bamboo industry in India.
- Select the correct answer using the code given below:
- (a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2
12. Which of the following statements is/are correct about Biological Diversity Act, 2002?
1. This act was brought to realize the objectives of Bonn Convention.

2. It aims at fair and equitable sharing of benefits arising out of the utilization of genetic resources.
3. This act establishes two-tier structure at National & State level only to regulate access to the biological resources.

Select the correct answer using the code given below:

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

13. Consider the following:

1. Star tortoise
2. Monitor lizard
3. Pygmy hog
4. Lion Tailed Macaque

Which of the above species are found in India?

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

14. Consider the following statements related to Biodiversity Hotspots:

1. Eastern Himalayas and the Western Ghats are biodiversity hotspots in India.
2. The biodiversity hotspots are mostly confined to the tropical regions of the world.
3. It represents regions that have experienced considerable habitat loss but not present changing land use patterns.

Which of the above statements is/are incorrect?

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

15. Which of the following biosphere is not part of the World Network of Biosphere Reserves under UNESCO's Man and Biosphere programme?

- (a) Dibru Saikhowa
- (b) Agasthyamalai
- (c) Pachmari

(d) Simlipal

16. Which of the following steps will reduce the Carbon Emissions from Farming?

1. Neem coating of urea
2. Direct seeded rice system of rice cultivation
3. Pradhan Mantri Krishi Sinchai Yojana

Select the correct answer using the code given below:

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

17. Consider the following statements regarding the Carbon Neutrality Coalition, which was recently in News.

1. It is a group of countries, cities and organisations who have committed to take concrete and ambitious action to achieve the aims of the Paris Agreement.
2. India is the founder member to this Coalition.
3. All the member nations have pledged to become emissions neutral by 2050.

Which of the statements given above are correct?

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

18. Acid rain is caused mainly by the presence of sulphuric and nitric acids in the rain water which are result of oxidation of sulphur and nitrogen. Consider the following statements with regard to it.

1. Burning of fossil fuel and bio-mass are the causes of Acid rain.
2. The neutral pH value of rain water is 5.6
3. Calcareous soil act as a potential neutralizer of acidic component of rain water.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 3 only
- (c) 1 and 3 only

- (d) 1, 2 and 3
19. Consider the following statements regarding the National Clean Air Programme :
1. It aims to achieve a national level target of reducing PM_{2.5} and PM₁₀ concentrations by 20-30% between 2017 and 2024
 2. It will be implemented throughout the country
 3. It has been formulated under the Environment Protection Act, 1986
 4. Central Pollution Control Board will be the implementing agency of the programme
- Which of the statements given above is/are correct?
- (a) 1, 2, 3 and 4
 - (b) 1, 2 and 4 only
 - (c) 1, 3 and 4 only
 - (d) 1 and 4 only
20. Consider the following Pairs:
- | Disease | Primary Pollutant |
|-----------------------|-------------------|
| 1. Blue baby syndrome | - Methyl Mercury |
| 2. Itai-itai disease | - Cadmium |
| 3. Pneumoconiosis | - Silica |
- Which of the Pairs given above is/are correctly matched?
- (a) 2 only
 - (b) 1 and 2 only
 - (c) 2 and 3 only
 - (d) 1, 2 and 3
21. Which of the following statements is/are correct about the impacts of sand mining?
1. Sand mining can create turbidity in the water.
 2. It contributes to bank erosion and sinking deltas.
- Select the correct answer using the code given below:
- (a) 1 only
 - (b) 2 only
 - (c) Both 1 and 2
 - (d) Neither 1 nor 2
22. Consider the following statements with reference to EPCA(Environment Pollution Control Authority):
1. It is a statutory body under Environment Protection Act,1986.
 2. It is mandated to enforce Graded Action Response Plan(GRAP) in NCR as per pollution levels.
- Select the correct answer using the code given below:
- (a) 1 only
 - (b) 2 only
 - (c) Both 1 and 2
 - (d) Neither 1 nor 2
23. Consider the following with regard to Persistent organic pollutants(POP)
1. These compounds cannot be broken down by plants or animals
 2. Being water-soluble, they reach the water table through leaching, polluting ground water
 3. They are readily absorbed by plants and reach man through the food chain
 4. Being fat-soluble, their concentration increases manifold through the food web.
- Which of the statements given above is/are correct?
- (a) 1 and 4 only
 - (b) 2 and 3 only
 - (c) 1, 3 and 4
 - (d) 2 only
24. Which of the following are the sources which lead to the formation of ozone hole
1. Chlorofluorocarbons
 2. Nitrogen oxides
 3. Bromine
 4. Sulphuric acid particles
 5. Carbon tetrachloride
 6. Methyl Chloroform
- Select the correct answer using the codes given below.
- (a) 1, 2, 4 and 6 only
 - (b) 1, 3, 5 and 6 only
 - (c) 2, 3, 4 and 5 only
 - (d) 1, 2, 3, 4, 5 and 6
25. Consider the following statements with reference to Third National Wildlife Action Plan:
1. It is for the period 2018-2031.

2. It is first wildlife action plan to recognize concerns related to climate change impact on wildlife.
3. It has a protected area centric approach to wildlife conservation.
- Which of the statements given above is/are correct?
- (a) 1 and 2 only
(b) 1 only
(c) 1 and 3 only
(d) None of the above
26. Which of the following is not a quantitative pollutant?
- (a) CO₂
(b) DDT
(c) Ozone
(d) Nitrogen Oxides
27. Consider the following statements about compostable plastics:
1. These are biodegradable plastics.
 2. Minimum thickness prescribed for compostable plastics is 50 microns, as per the Plastic Waste Management Rules, 2016.
 3. Carry bags made of compostable plastics shall bear a label 'compostable'.
- Which of the statements given above are correct?
- (a) 1 and 2 only
(b) 1 and 3 only
(c) 2 and 3 only
(d) 1, 2 and 3
28. Consider the following statements with reference to IPCC(Inter-governmental Panel on Climate Change)
1. Its Fourth Assessment report was a critical scientific input for UNFCCC Paris agreement
 2. It carries its own scientific research along with the voluntary contribution from Scientists around the world.
 3. It received Nobel peace prize in 2007 shared with Al Gore
- Which of the statements given above is/are correct ?
- (a) 1 and 2 only
(b) 2 and 3 only
(c) 1 and 3 only
(d) 1, 2 and 3
29. Consider the following statements with reference to CycloPentane:
1. It is a Chlorofluorocarbon(CFC) with zero ozone depletion potential and zero global warming potential.
 2. Ministry of Environment, Forests and Climate Change has recently proposed the foam industries to shift to CycloPentane.
- Which of the statements given above is/are correct?
- (a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2
30. Consider the following statements about the Central Pollution Control Board (CPCB):
1. CPCB has been formed under the provisions of the Environment (Protection) Act, 1986.
 2. The Union Minister for the Ministry of Environment, Forest and Climate Change is the chairman of CPCB.
- Which of the statements given above is/are correct?
- (a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2
31. Which of the following are the areas on which IUCN works?
1. Challenges related to poverty alleviation and food security.
 2. Enhance Governance and Policy for better management of ecosystems and Habitats.
 3. Climate Change.
- Select the correct answer using the code given below:
- (a) 1 and 2 only
(b) 2 and 3 only
(c) 1 and 3 only
(d) 1, 2 and 3

32. Which of the following is/are likely impact(s) of climate change?

1. Rising temperature will increase the use of fertilisers resulting in rise in cost of crop production
2. Moderate warming is expected to benefit crop yields in temperate regions
3. Arable land in high-latitude region is likely to increase while those in coastal areas are likely to decrease

Select the correct answer using the code given below:

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

33. Consider the following statements with reference to Global Green Growth Institute:

1. It is an international treaty based organization launched at Rio+20 summit.
2. India is a founding member of this institute

Which of the statements given above is/are correct ?

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

34. Consider the following statements related to Wildlife Protection Act 1972 :

1. The act has been adopted by all states except Assam
2. Schedule VI was added to include specified plant species to be protected
3. 'Forests' have been placed under State List in the Constitution
4. The act makes immunization of livestock within radius of 5 km from a National Park compulsory

Select the correct answer using the code given below:

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

35. Consider the following statements with reference to Alliance to End Plastic Waste (AEPW):

1. It is a inter-governmental organization to end plastic waste especially in the ocean.
2. It aims to invest \$1.5 billion in the next 5 years to fight against plastic pollution.

Which of the statements given above is/are correct?

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

36. Which of the following statements is/are correct about the Waste Minimisation Circle (WMC)?

1. The Waste Minimisation Circle is an initiative sponsored by the Ministry of Environment, Forest and Climate Change.
2. The National Productivity Council is executing the WMC programme.

Select the correct answer using the code given below:

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

37. Consider the following statements about the Brundtland Report:

1. The Brundtland Report introduced the concept of sustainable development
2. It was sponsored by the World Commission on Environment and Development (WCED).

Which of the statements given above is/are correct?

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

38. During the Second commitment period of Kyoto protocol, a new greenhouse gas namely Nitrogen-triflouride (NF₃) was added. Where these NF₃ are used?

1. Replacement of CFC in Refrigeration

2. Liquid crystal Displays (LCDs)
3. Silicon based Solar cells
4. Petroleum based industries

Which of the statements given above is/are correct?

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

39. Consider the following statements with reference to Green Skill Development Programme:

1. It aims to train over 5.5 Lakh workers in environment and forest sectors in the country through 30 courses by 2021.
2. It was launched in 2016 as pilot project.

Select the correct answer using the code given below:

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

40. The Sailesh Nayak Committee Report is related to which of the following?

- (a) Green Gross Domestic Product
- (b) Coastal Zone Regulation
- (c) Biodiversity of the Western Ghats
- (d) None of the above

41. Why satellites and missiles are launched from the Eastern coast over the equatorial region?

1. To take the initial boost of earth's surface velocity at equator.
2. The Coriolis force is zero at that place.
3. To take precaution as just in case of failure of launch, the satellite does not fall on built up hinterland.

Codes:

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

42. Consider the following statements about "Black hole":

1. A black hole is a geometrically defined region of space time exhibiting such strong gravitational effects that nothing

excluding electromagnetic radiation such as light can escape from it.

2. After a black hole has formed, it can continue to grow by absorbing mass from its surroundings.
3. When an object falls into a black hole, any information about the shape of the object or distribution of charge on it is evenly distributed along the horizon of the black hole, and is lost to outside observers.

Which of the above statements is / are correct?

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

43. Consider the following statements about the Maglev train:

1. Maglev train travels along a guide way using magnets to create both lift and propulsion.
2. Maglev trains move more smoothly and more quietly than wheeled mass transit systems.
3. Maglev trains are relatively unaffected by weather.

Which of the above statements are correct?

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

44. Which of the following are true in context of the atmospheric refraction?

1. Atmospheric refraction tends to lengthen the day.
2. Elliptical appearance of sun near the horizon is the result of atmospheric refraction.
3. We see a blue sky due to the phenomenon of atmospheric refraction.

Codes:

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

45. Consider the following statements about the Ethernet:

1. Ethernet is a family of computer networking technologies for Wide Area Networks (WANs).
2. Data transfer rates over Ethernet can be up to 100 gigabits per second.
3. Ethernet has a good degree of backward compatibility.
4. Higher level network protocols like Internet Protocol (IP) uses Ethernet as their transmission medium.

Which of the above statements are correct?

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

46. Which of the following are the applications of Doppler effect?

1. Using RADAR guns to estimate velocity of an approaching vehicle.
2. Prediction of movement and direction of rain bearing clouds.
3. Marine animals can navigate in the absence of light using it.

Select the answer using the codes given below:

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

47. Which of the following conditions are associated with atmospheric pressure?

1. Nose bleeding at high altitude.
2. The melted wax of a candle drawn up into the wick.
3. Rise of ink in the tube of a fountain pen when the piston is pulled.

Codes:

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

48. One of the ways of heat transmission is conduction. Which of the following statements can be explained by this phenomenon?

1. During severe winters, Eskimos live in snow huts called igloos.
2. Ice slabs are covered with saw dust to minimize melting.
3. A refrigerator has to be switched off for defrosting whenever a thick layer of ice deposits on the outside and inside of the freezer.
4. Heating elements in water heaters and geysers are fitted near the bottom.

Codes:

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

49. Consider the following statements related to the atmospheric gases:

1. Carbon dioxide is carried in the blood as dissolved in blood plasma.
2. Breathing becomes faster in fever due to oxygen carrying capacity of blood becomes lower.
3. Oxygen is carried in human beings chiefly by the ammonia molecule.
4. Oxygen is transported to various parts of the body through hormones.

Which among the above given statements are correct?

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

50. Consider the following statements with respect to the Synthetic Diamond:

1. Synthetic diamond is produced through the high-pressure low-temperature production process.
2. These are devoid of properties such as thermal conductivity and electron mobility which are superior in naturally formed diamonds.
3. Diamond is mechanically and chemically stable thus can be used as electrode.
4. Synthetic diamond can be used in waste water treatment of organic effluents.

Which of the above given statements are correct?

- (a) 1, 2 and 3

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

51. Which among the following are the examples of natural carbon sink?

- 1. Carbon capture and sequestration.
- 2. Landfills
- 3. Absorption of carbon dioxide by the oceans.
- 4. Photosynthesis by terrestrial plants.

Codes:

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

52. Disinfection is an important step in ensuring that water is safe to drink. What are the advantages of using ultraviolet rays as disinfectant?

- 1. It produces no known toxic residuals.
- 2. UV radiation effectively destroys bacteria and viruses.
- 3. UV radiation can be used in water with high levels of suspended solids, turbidity, colour, or soluble organic matter.

Select the answer from the codes given below:

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

53. Consider the following statements about the usages of Baking Soda:

- 1. It is used in making baking powder which in turn is used in making cakes.
- 2. It is used in the formation of antacids which is used to neutralize excess acid in the stomach.
- 3. It is used in fire extinguishers.
- 4. It is used in removing permanent hardness of water.

Which of the above applications is/are correct?

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

54. Consider the following statements:

- 1. Citric acid is a good chelating agent.
- 2. Caffeine, a constituent of tea and coffee is a diuretic.
- 3. Ascorbic acid is essential for the formation of bones and teeth.

Which of the statements given above are correct?

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

55. Choose the correct statement(s) related to different chemicals:

- 1. Laughing gas is NO.
- 2. Cellophane used for wrapping is made up of glucose acetate.
- 3. The chemical used as a chemical weapon in the First World War was mustard gas.

Which of the above statements is / are correct?

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

56. India has been contemplating shifting from Oral Polio Virus (OPV) with Inactivated Polio Virus - (IPV). What could be the reason for this shift?

- (a) IPV is more effective in eradication than OPV.
- (b) It is mandated by World Health Organisation
- (c) Limited shelf life and potency of OPV
- (d) OPV gets destroyed by tropical heat

57. Gene cloning in vogue today can be used for which of the prospective areas:

- 1. Reviving an extinct species
- 2. To make stem cells
- 3. Understanding diseases
- 4. Synthetic medicines

Select the correct answer using code given below:

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

58. Which of the following statements about Humulin is/are correct?

1. It is a synthetic insulin produced by using genetic engineering technology.
2. Humulin is absorbed more rapidly and show its effectiveness in short duration.
3. Humulin causes fewer allergic and autoimmune reactions as compared to animal insulin.

Select the correct answer using the code given below:

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

59. Which of the following statements about adaptation of human body to low oxygen stress are correct?

1. Increasing red blood cells production.
2. Decreasing the binding affinity of haemoglobin.
3. Decreasing the breathing rate.

Select the correct answer using the code given below:

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

60. Consider the following regarding a type of digestive secretive juice?

1. It is produced from the second largest gland of human body.
2. It contains enzymes which can digest fats and starch.
3. It is produced from a gland which simultaneously acts as endocrine and exocrine type of gland.

Which of the following digestive juices best explains the above mentioned characteristics?

- (a) Pancreatic juice
- (b) Bile juice
- (c) Gastric juice
- (d) Intestinal juice

61. Consider the following statements regarding transportation of water and minerals in plants:

1. Phloem transports water to entire plant

leaves.

2. Xylem transports food to all parts of the plant.
3. Both phloem and xylem are unidirectional.

Which of the above statements are incorrect?

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

62. Which of the following statements about Phytoremediation techniques is/are correct?

1. Rhizofiltration is the removal of pollutants from surface water and groundwater.
2. Phytostabilization is the reduction of the mobility of heavy metals in soil.
3. Phytovolatilization is the evaporation of pollutant through stomata.

Select the correct answer using the code given below:

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

63. Following are some of the symptoms of a disease that has become epidemic in India:

1. It is caused due to over reaction by human immune system
2. Rapidly communicable
3. It affects largely children/infants

Which of the following diseases best describes the above mentioned symptoms?

- (a) Nipah viral infection
- (b) Sepsis
- (c) Japanese Encephalitis
- (d) Polio

64. Which among the following are classified as Carcinogens?

1. Tobacco
2. UV rays
3. Outdoor pollution
4. Gamma rays

Select the correct answer using the code given below:

- (a) 1, 2 and 4 only
- (b) 2 and 3 only

- (c) 2, 3 and 4 only
(d) 1, 2, 3 and 4

65. Rabies is a viral infection that mainly transmits to humans through a bite from an infected animal. Other than dog bites, Rabies Virus can be transmitted by which of following animals?

1. Cat
2. Monkey
3. Fox
4. Mongoose

Select the correct answer using the code given below:

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

66. Consider the following statements with reference to the India's Mission Shakti:

1. It was an Anti-satellite mission successfully conducted by ISRO.
2. The satellite destroyed in this mission was Microsat-R, an imaging satellite.
3. India is the third nation to possess and conduct anti-satellite deterrence capability.

Which of the above statements is/are correct?

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

67. Consider the following statements with reference to Chemical Weapon Convention:

1. It is administered by the Organisation for the Prohibition of Chemical Weapons (OPCW).
2. India was the first State Party to destroy all its stockpile of chemical weapons under the convention.
3. National Authority Chemical Weapons Convention (NACWC) is India's nodal agency for implementing the provisions of the Convention.

Which of the above statements are correct?

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

- (d) 1, 2 and 3

68. With reference to the Aditya-L1 mission, consider the following statements:

1. It is India's first space mission intended to study the outermost region of the sun.
2. It will be placed in a halo orbit around the Lagrangian point 1 (L1) of the Sun-Earth system that lies perpendicular to the plane of the axis between sun and earth.
3. Parker Solar Probe of Roscosmos is also intended to study the corona of the earth on similar lines.

Which of the above statements is/are incorrect?

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

69. With reference to the recently inducted Dhanush artillery guns in the Indian army, consider the following statements:

1. It is an indigenously upgraded variant of the Swedish Bofors gun.
2. It is the first long-range artillery gun to be produced in India.

Which of the above statements is/are correct?

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

70. With reference to the different types of vaccines, consider the following statements:

1. Inactivated vaccines provoke more durable immunological response than live attenuated vaccines and thus do not require multiple doses.
2. Live-attenuated vaccines cannot be administered to persons with impaired immune response system.
3. In a recombinant vaccine, only a protein from disease causing organism that generates protective immune response is inserted into gene of another cell.

Which of the above statements is /are correct?

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

71. With reference to the Stealth Technology, consider the following statements:

1. It is also termed as low-observable technology.
2. It is deployed only on aircraft.

Which of the above statements is/are correct?

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

72. Consider the following statements regarding Industrial genetics:

1. In this, the desired proteins are overexpressed in the organism by cells transformation and produced in mass scale.
2. This technique can be used in medicines production and bioremediation .

Which of the above statements is/are correct?

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

73. Consider the following statements with reference to the indigenously developed Doppler Weather Radar (DWR) in India:

1. It is the first indigenously developed Polarimetric Doppler Weather Radar (DWR) in India.
2. It can provide even detailed information on storm's internal wind flow and structure.
3. It is installed at Cherrapunjee, Meghalaya.

Which of the above statements is/are correct?

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

74. Food fortification refers to deliberate addition of one or more micronutrients to reduce the burden of micronutrient malnutrition in India. In this context, consider the following statements:

1. Milk, salt and edible oil are the only items that are fortified in India at present.
2. Fortification of staple food is not mandatory as per the Fortification of Food Regulations 2018.
3. Double fortified salt delivers crucial amount of iodine and vitamin B12.

Which of the above statements is/are correct?

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

75. Which of the following statements correctly represents the difference between viruses and bacteria?

1. Viruses are not capable of surviving on their own while bacteria can.
2. Viruses have both types of nucleic acids while bacteria have either DNA or RNA.
3. Viruses do not have a cell wall but bacteria have a well-defined cell wall.

Select the correct answer using the code given below:

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

76. Consider the following statements regarding Biosparging:

1. It is an Ex-situ remediation technology.
2. It involves the pressurized injection of air below the water table to decrease the content of groundwater oxygen.
3. It increases the rate of biological degradation of wastes by naturally occurring Microorganisms.

Which of the above statements is/are correct?

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

(d) 1, 2 and 3

77. In the context of Cruise and Ballistic Missiles, consider the following statements:

1. A Ballistic missile is a self-propelled guided vehicle that sustains flight through aerodynamic lift for most of its flight path.
2. A Cruise missile depends on gravity to reach its target.
3. Dhanush and Agni II are a type of Cruise missiles operational in Indian Defense forces.

Which of the above statements is/are incorrect?

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

78. Consider the following statements regarding DNA:

1. There are six bases in a strand of DNA.
2. All humans have same base sequence.
3. DNA sequencing can be used to understand diseases and their better treatment.

Which of the above statements is/are correct?

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

79. Consider the following statements regarding the digestion of food in our body:

1. Digestion of starch begins in the oral cavity.
2. The enzymes present in the bile juice helps in emulsification of fats.
3. The digestion of proteins gets completed in the large intestine.

Which of the above statements is/are correct?

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

80. With reference to the 'Oxytocin', seen in news recently, consider the following statements:

1. It is natural hormone secreted by pituitary glands in mammals.
2. It is listed in National List of Essential Medicines (NLEM) as it is crucial in preventing post-partum hemorrhage.
3. It also helps in formation of milk after the birth of a baby.

Which of the above statements is/are correct?

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

81. Consider the following statements regarding Firewall:

1. It is used to block malicious traffic requests and data packets while allowing legitimate traffic through.
2. Packet filtering firewalls opens up the coming packet to inspect all of its inside contents for passing.
3. Circuit-level gateways work by verifying the transmission control protocol (TCP) handshake.

Which of the above statements are correct?

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

82. With reference to Nanofabrics, consider the following statements:

1. These are textiles embedded with small nano particles.
2. Zinc oxide embedded nanofabrics can be used for UV rays protection.

Which of the above statements is/are correct?

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

83. Match the following given pairs with reference to parts of Robot:

Column 1**Column 2**

- | | |
|-----------------|---|
| A. Controller | 1. End-of-arm tooling on the robot |
| B. Manipulator | 2. Coordinates movements of mechanical system |
| C. End Effector | 3. Arm of the robot |
| D. Sensors | 4. Information Gatherers |

Identify the correct order:

A B C D

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

the following statements regarding uranium enrichment:

1. Uranium enrichment is the process by which a sample of mined uranium has its proportion of U-238 increased.
2. Nuclear power plants require highly enriched uranium (HEU).

Which of the above statements is/are correct?

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

84. Consider the following statements:

1. Formulating the policy of Department of Telecommunication for approval by Government.
2. Adjudicating disputes between two or more service providers.
3. Fixing tariffs and rates for telecom services.

Which of the above is/are the functions performed by Telephone Regulatory Authority of India (TRAI)?

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

87. With reference to the Cyber Swachhta Kendra, consider the following statements:

1. It is also known as Botnet Cleaning and Malware Analysis Centre.
2. It is not a part of Digital India initiative of Government of India.
3. This centre is being operated by the Indian Computer Emergency Response Team (CERT-In).

Which of the above statements is/are incorrect?

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

85. Consider the following statements with reference to Robotic Terminology:

1. An Actuator is a power mechanism that is used to effect motion or maintains the position of the robot.
2. Optical Encoder is a detection sensor that measures the linear or rotary motion of a robot.
3. A transducer is a device that converts energy from one form to another.

Which of the above statements is/are incorrect?

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

88. Consider the following statements with reference to Graphene:

1. It is the thinnest compound known to man.
2. Graphite can be formed by stacking layers of graphene on top of each other.
3. It is highly impermeable and photosensitive in its characteristics.

Which of the above statement is/are incorrect?

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

86. The Iran Nuclear Deal stipulates Iran to limit uranium enrichment and reduce its stockpile of enriched uranium. In this context, consider

89. Consider the following statements regarding Industrial Design:

1. It constitutes of the aesthetic aspect of an article such as a shape, a pattern, a line or a colour.

2. The owner of the registered industrial design cannot prevent third party making articles embodying the same design for commercial purpose.

Which of the above statements is/are correct?

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

90. With reference to the Chatbots, consider the following statements:

1. These are computer program designed to simulate conversation with human users over the internet.
2. Rule based chatbots provide predefined responses from a data base, based on the keywords used for the search.
3. Siri and Alexa are a type of Data-driven and predictive chatbots.

Which of the above statements are correct?

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

91. Which of the following statements is/are correct regarding 5G Network?

1. With 5G, the peak network data speeds are expected to be in the range of 6-7 Megabit per second.
2. It is expected to form the backbone of Internet of Things (IoT).
3. The committee was set up under the chairmanship of AJ Paulraj to suggest road map for 5G adoption.

Select the correct answer using the code given below:

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

92. India is taking tentative steps towards restarting research into cold fusion. In light of this, consider the following statements:

1. Cold Fusion or Low Energy Nuclear Reaction (LENR) is a nuclear reaction that occurs at near room temperature.

2. It seeks to produce nuclear energy without any harmful radiation.
3. The disadvantage of this idea is that it requires complex equipment for energy generation.

Which of the above statements is/are correct?

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

93. Consider the following statements with reference to India's National IPR Policy:

1. Cell for IPR Promotion and Management (CIPAM), to be setup under the aegis of Ministry of Law and Justice.
2. Existing commercial courts to adjudicate IP disputes in areas.
3. It provides to expand the ambit of Traditional Knowledge Digital Library (TKDL) for inclusion of Ayush.

Which of the above statements are correct?

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

94. With reference to Bharat Net Project, consider the following statements:

1. It aims at providing affordable broadband connectivity of upto 100Mbps to all rural households.
2. It is funded through the Universal Service Obligation Fund (USOF).
3. Bharat Sanchar Nigam Limited (BSNL) is handling the roll out of optical fibre network under the project.

Which of the above statements is/are correct?

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

95. Consider the following statements about Trademarks:

1. They are protected by intellectual property rights.

2. Arbitrary Marks that have no relationship to the good supplied, are the strongest trademark.
3. The Trademark Act in India was enacted in 1999.

Which of the above statements are correct?

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

96. Nuclear Reactors can be classified into two types depending upon the energy of neutrons that cause fissions in reactor core. In this context, consider the following statements:

1. Thermal reactors contain neutron moderator while a fast reactor contain no neutron moderator.
2. Almost all of the nuclear reactors built to date are fast reactors.

Which of the above statements is/are incorrect?

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

97. With reference to Nanomaterials, consider the following statements:

1. Incidental nanomaterial is unintentionally produced nanomaterial due to direct or indirect human influence.
2. Soot from forest fires is an example of engineered nanomaterial.
3. Titanium dioxide's nanoparticle is a naturally occurring nanomaterial.

Which of the above statements is/are correct?

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

98. E-KRANTI is a national e-governance plan to accelerate e-governance across India. Which of the following are the thrust areas of e-Kranti?

1. Education

2. Health
3. Security
4. Farmers

Select the correct answer using the code given below:

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

99. Which of the following is/are the application of Nanotechnology in food processing sector?

1. Contamination Sensor
2. Antimicrobial Packaging
3. Green Packaging
4. Tracing Brand Protection

Identify the correct option using the code given below:

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

100. Consider the following statements:

1. Atomic Energy Regulatory Board is responsible for design, construction, commissioning and operation of nuclear power reactors.
2. Nuclear Power Corporation of India Limited (NPCIL) is a PSE implementing the Fast Breeder Reactors Programme in India.

Which of the above statements is/are correct?

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