

D 102518

(Pages : 17)

Name.....

Reg. No.....

P.G. ENTRANCE EXAMINATION, APRIL 2024

ENVIRONMENTAL SCIENCE

Time : Two Hours

Maximum : 400 Marks

Each question carries 4 marks.

1 mark will be deducted for each wrong answer.

1. Father of White revolution in India is :

- | | |
|------------------------|----------------------|
| (a) Indira Gandhi. | (b) Varghese Kurian. |
| (c) M. S. Swaminathan. | (d) Vishal Tiwari. |

2. Among the following select the one which is not a principle of Green Chemistry ?

- (a) Green solvents.
- (b) Use of renewable feedstock.
- (c) Hazardous chemical synthesis.
- (d) Design for energy efficiency.

3. Environmental economics attempts to study the inter relationship between :

- (a) Environment and resource allocation.
- (b) Economic agents and environment.
- (c) Economic problems and environment.
- (d) Environment and ecology.

4. Green solvent used for bleaching clothes ?

- | | |
|------------------------|--------------------------|
| (a) Hydrogen peroxide. | (b) Tetra chloro ethane. |
| (c) Benzene. | (d) Toluene. |

5. International Biodiversity Day is observed on :

- | | |
|-------------|-------------|
| (a) May 22. | (b) May 23. |
| (c) May 21. | (d) May 24. |

Turn over

6. Which of the following pollutants are responsible for the cause of SMOG ?
- (a) From incinerators.
 - (b) Emissions from vehicles.
 - (c) Both incinerators and emissions from vehicles.
 - (d) None of the above.
7. Which of the following is called the secondary air pollutant ?
- (a) PANs.
 - (b) Ozone.
 - (c) Carbon monoxide.
 - (d) Nitrogen dioxide.
8. Pong Dam sanctuary is located in which state ?
- (a) Himachal Pradesh.
 - (b) Madhya Pradesh.
 - (c) Sikkim.
 - (d) Gujarat.
9. Which of the following is a non-renewable natural resource ?
- (a) Fish and cattle.
 - (b) Petroleum.
 - (c) Human Resources.
 - (d) All answers above are correct.
10. Nagoya Protocol is an International treaty related to :
- (a) Green house gas emission.
 - (b) Biosafety.
 - (c) Access to genetic resources, fair and equitable sharing of benefits.
 - (d) Ozone emission.
11. The Indian Meteorological Organization is situated in ?
- (a) Mumbai.
 - (b) Delhi.
 - (c) Kolkata.
 - (d) Pune.

12. When Environmental Lapse Rate (ELR) is greater than Adiabatic Lapse Rate (ALR), which of the following occurs ?
- (a) Super adiabatic lapse rate. (b) Neutral lapse rate.
(c) Adiabatic lapse rate. (d) Sub adiabatic lapse rate.
13. For the host, the most dangerous relationship with another organism is :
- (a) Symbiosis. (b) Parasitism.
(c) Commensalism. (d) Mutualism.
14. Which of the following is the use of washing soda ?
- (a) Softening of water. (b) Manufacture of glass.
(c) Manufacture of paints. (d) All of the above.
15. The maximum number of individuals that can be supported by a given environment is called :
- (a) Environment stress. (b) Environment resistance.
(c) Carrying capacity. (d) Human carrying capacity.
16. Which of the following substances cannot be emitted by radioactive substances during their decay ?
- (a) Protons. (b) Neutrinos.
(c) Beta particles. (d) Electrons.
17. Which economic approach focuses on internalizing environmental costs into the pricing mechanism to encourage sustainable resource use ?
- (a) Neoliberal economics. (b) Keynesian economics.
(c) Environmental economics. (d) None of the above.
18. Which among the following minerals is also known as Horn Silver ?
- (a) Silver Iodide. (b) Silver Chloride.
(c) Zinc Phosphate. (d) Silver Sulphide.

19. Assertion (A) : A high average income is not indicative of the overall well-being or human development in a country.
- Reason (R) : Average income does not cover indicators like level of literacy rate, health facilities and public facilities in a country.'
- (a) Both A and R is true, but the reason is not the correct explanation of the assertion.
 - (b) Both A and R is true, and the reason is the correct explanation of the assertion.
 - (c) Assertion is true, but the reason is false.
 - (d) Both assertion and reason are false.
20. The layer of atmosphere between 10 km to 50 km above the sea level is called as :
- (a) Troposphere.
 - (b) Thermosphere.
 - (c) Stratosphere.
 - (d) Mesosphere.
21. SAARC Disaster Management Centre is at :
- (a) Dhaka.
 - (b) Colombo.
 - (c) New Delhi.
 - (d) Kathmandu.
22. Among the following most highly intelligent mammal ?
- (a) Dolphin.
 - (b) Elephant.
 - (c) Kangaroo.
 - (d) Whales.
23. Which of the following is a statutory body responsible for implementing and enforcing environmental laws in India ?
- (a) Central Pollution Control Board (CPCB).
 - (b) Indian Council of Agricultural Research (ICAR).
 - (c) National Biodiversity Authority (NBA).
 - (d) Indian Space Research Organization (ISRO).

24. The cultivation of which of the plants on wastelands has a potential to generate biofuel in large quantities ?
- (a) *Jatropha curcas*. (b) *Copaifera langsdorfii*.
(c) *Camelina sativa*. (d) None of these.
25. Beer Lambert's law gives the relation between which of the following ?
- (a) Reflected radiation and concentration.
(b) Scattered radiation and concentration.
(c) Energy absorption and concentration.
(d) Energy absorption and reflected radiation.
26. The main reason for blueness of the sky is :
- (a) Due to the presence of water vapour.
(b) Due to the absorption of blue light due to the air.
(c) Due to the scattering of sunlight by air molecules.
(d) None of the above.
27. The correct statement about La Nina is :
- (a) It derives its name from Spanish word which means 'girl-child'.
(b) It is the opposite ENSO phase to El Niño.
(c) Both (a) and (b).
(d) Only (b).
28. Which of the following two regions from India included as hot spot ?
- (a) Eastern Himalayas and Western Ghats.
(b) Western Himalayas and Western Ghats.
(c) Northern Himalayas and Western Ghats.
(d) Southern Himalayas and Western Ghats.

29. Which of the following gas destroys the chlorophyll present in the plant leaves ?
- (a) SO_3 . (b) H_2S .
(c) SO_2 . (d) CO_2 .
30. The name not associated with Silent Valley movement :
- (a) Sathish Chandran Nair. (b) John Jacob.
(c) V. S. Vijayan. (d) Vandana Siva.
31. The word 'Sustainable Development' came into existence in the year ?
- (a) 1992. (b) 1978.
(c) 1980. (d) 1987.
32. What is the requirement for the storage of biomedical waste as per the Biomedical Waste (Management and Handling) Rules, 1998 ?
- (a) It should be stored in open areas.
(b) It should be stored in leak-proof containers.
(c) It should be stored without segregation.
(d) It should be stored indefinitely.
33. Ozone layer is located in which layer of the atmosphere ?
- (a) Thermosphere. (b) Troposphere.
(c) Stratosphere. (d) Mesosphere.
34. Which United Nations agency organized the Stockholm Conference ?
- (a) United Nations Environment Programme (UNEP).
(b) World Health Organization (WHO).
(c) Food and Agriculture Organization (FAO).
(d) United Nations Development Programme (UNDP).

35. Which of the following is the major contributor of carbon monoxide ?
- (a) Motor vehicle. (b) Industrial process.
- (c) Stationary fuel combustion. (d) None of the above.
36. Rio Summit at Rio de Janeiro, Brazil happened in the year ?
- (a) 1992. (b) 1993.
- (c) 1988. (d) 2005.
37. What is called for an area surrounding a body of water ?
- (a) Rainwater harvesting. (b) Watershed.
- (c) Water pumping. (d) Water cycle.
38. In which year the Ramsar Convention signed ?
- (a) 1962. (b) 1971.
- (c) 1980. (d) 1992.
39. What are Floes ?
- (a) Masses of fungi. (b) Masses of algae.
- (c) Masses of animals. (d) Masses of bacteria.
40. Which of the following is one of the Ramsar sites in Kerala ?
- (a) Silent Valley National Park.
- (b) Periyar Tiger Reserve.
- (c) Vembanad-Kol Wetland.
- (d) Parambikulam Tiger Reserve.
41. The pollutants including fumes, ash, nitric oxide, smoke, dust, and sulphur dioxide are come under the category of :
- (a) Primary Pollutants. (b) Secondary pollutants.
- (c) Biodegradable Pollutants. (d) None of the above.

42. Which one of the following is the simplified sequence of phosphorus cycling in a terrestrial ecosystem ?
- (a) Soil → Producers → Rock minerals → Consumers → Decomposers.
 - (b) Rock minerals → Soil → Producers → Consumers → Decomposers.
 - (c) Rock minerals → Decomposers → Producers → Consumers.
 - (d) Decomposers → Rock minerals → Consumers → Producers.
43. Particulate matters are those minute particles remain suspended in air and cause irritation when inhaled. Among the following select best example of particulate matter ?
- (a) Nitrogen dioxide.
 - (b) Water vapour.
 - (c) Ozone.
 - (d) Fly ash.
44. Indian Constitution empowers the State to enact laws for the prevention of water pollution and abatement of environmental pollution comes under the article ?
- (a) Article 48A.
 - (b) Article 51A (g).
 - (c) Article 21.
 - (d) Article 252.
45. What is the safe level of noise intensity for humans ?
- (a) Up to 90 decibels.
 - (b) Up to 70 decibels.
 - (c) Up to 80 decibels.
 - (d) Up to 55 decibels.
46. The ecosystem which has the least biodiversity is :
- (a) Deciduous forest.
 - (b) Tundra.
 - (c) Savanna.
 - (d) Alpine forest .
47. HPLC stands for :
- (a) High Power Liquid Chromatography.
 - (b) High Pressure Liquid Chromatography.
 - (c) High Pure Liquid Chromatography.
 - (d) High Performance Liquid Chromatography.

48. Correct statement on Big Bang Theory is :

- (a) The universe was created in a massive explosion billions of years ago.
- (b) The universe has always existed in its current form.
- (c) The universe was formed from the collision of two galaxies.
- (d) The universe was created by a divine being

49. Which horizon helps to determine the pH of the soil ?

- (a) A.
- (b) B.
- (c) C.
- (d) O.

50. In the given food chain if the amount of energy at the fourth trophic level is 4 kJ, what will be the energy available at the producer level ?

Grass → Grasshopper → Frog → Snake

- (a) 4 kJ.
- (b) 40 KJ.
- (c) 400 kJ.
- (d) 4000 kJ.

51. What is the state of matter of the Earth's outer core ?

- (a) Solid.
- (b) Liquid.
- (c) Gas.
- (d) Plasma.

52. Which layer of the atmosphere is known for its extremely low temperatures and is where most meteors burn up ?

- (a) Stratosphere.
- (b) Troposphere.
- (c) Thermosphere.
- (d) Mesosphere.

53. The only floating national park in the world where Phumdis are found :

- (a) Gulf of Mannar Marine National Park.
- (b) Keibul Lamjao National Park.
- (c) Sundarbans national park.
- (d) Rani Jhansi Marine National Park.

54. Which is the largest wet land in India :

- (a) Ashtamudi.
- (b) Sasthamkotta.
- (c) Sunderbans.
- (d) Chilka.

55. The main constituents of atmosphere are ;

- (a) N_2 and O_2 .
- (b) CO_2 and N_2 .
- (c) CO and CO_2 .
- (d) O_3 and SO_2 .

56. What are the pieces of the Earth's crust and uppermost mantle called ?

- (a) Continents.
- (b) Tectonic plates.
- (c) Subduction zones.
- (d) Seamounts.

57. Ratio of the mass of water vapour to mass of air indicating :

- (a) Absolute humidity.
- (b) Approximate humidity.
- (c) Relative humidity.
- (d) Specific humidity.

58. The region where mild and irregular wind in the equatorial is known as ?

- (a) Trade winds.
- (b) Westerlies.
- (c) Doldrums.
- (d) Easterlies.

59. Who coined the term 'Biodiversity' ?

- (a) Frankel.
- (b) Darwin.
- (c) Richard Feymann.
- (d) Walter G Rosen.

60. The Red Data Book contains colour-coded information sheets, which are arranged according to the extinction risk. Amber colour represents the species that are :

- (a) Formerly endangered.
- (b) Least concern.
- (c) Rare.
- (d) Vulnerable.

61. Which mineral is the most abundant in Earth's crust ?

- (a) Quartz.
- (b) Feldspar.
- (c) Mica.
- (d) Calcite.

62. Which layer of the atmosphere is responsible for aurora formation ?
- (a) Ozone layer. (b) Stratosphere.
(c) Exosphere. (d) Ionosphere.
63. Which mineral is the main component of limestone and marble ?
- (a) Quartz. (b) Feldspar.
(c) Mica. (d) Calcite.
64. Which of the following has maximum genetic diversity in India :
- (a) Banana. (b) Mango.
(c) Wheat. (d) Teak.
65. Which of the following processes is an example of physical weathering ?
- (a) Chemical dissolution. (b) Oxidation.
(c) Frost wedging. (d) Acid rain.
66. What is the most common used coagulant ?
- (a) Alum. (b) Ferric sulphate.
(c) Limestone. (d) Coal.
67. Which of the following organisms contributes to biological weathering by secreting acids that dissolve minerals in rocks ?
- (a) Earthworms. (b) Lichens.
(c) Fungi. (d) Bacteria.
68. What is the term for the process by which pollutants are removed from the atmosphere by living organisms ?
- (a) Deposition. (b) Bio magnification.
(c) Transpiration. (d) Bioremediation.

69. What is the definition of mass binding energy ?
- (a) The energy released when an atom loses an electron.
 - (b) The energy required to break a nucleus into its individual nucleons
 - (c) The energy associated with the formation of a nucleus from its individual nucleons
 - (d) The energy released during a nuclear fission reaction
70. Which of the following is a primary greenhouse gas ?
- (a) Methane.
 - (b) Oxygen.
 - (c) Nitrogen.
 - (d) Carbon monoxide.
71. Which type of radiation has the greatest penetrating power ?
- (a) Alpha radiation.
 - (b) Beta radiation.
 - (c) Gamma radiation.
 - (d) Neutron radiation.
72. What is the process by which plants release water vapor into the atmosphere ?
- (a) Respiration.
 - (b) Transpiration.
 - (c) Condensation.
 - (d) Precipitation.
73. Which of the following processes involves the splitting of heavy atomic nuclei into lighter nuclei ?
- (a) Fission.
 - (b) Fusion.
 - (c) Radioactivity.
 - (d) Decay.
74. Which of the following is an example of steady-state heat transfer ?
- (a) Cooling of I.C engine.
 - (b) Chilling effect of cold wind on a warm body.
 - (c) Boilers and turbines.
 - (d) Electric bulb cools down by the surrounding atmosphere.

75. Define remote sensing :
- (a) A method of communication using satellites.
 - (b) A technique for detecting underground resources.
 - (c) The process of observing and measuring objects or areas from a distance.
 - (d) A method for transmitting data wirelessly.
76. What is the term for the gradual increase in Earth's average temperature due to human activities ?
- (a) Greenhouse effect.
 - (b) Global warming.
 - (c) Ozone depletion.
 - (d) Acid rain.
77. What is the primary advantage of using satellite-based remote sensing ?
- (a) High spatial resolution.
 - (b) Low cost.
 - (c) Real-time data collection.
 - (d) Wide coverage area
78. Which of the following is non- renewable energy source ?
- (a) Wind.
 - (b) Solar.
 - (c) Coal.
 - (d) Hydroelectric.
79. The process of converting raw remote sensing data into useful information is :
- (a) Data preprocessing.
 - (b) Data acquisition.
 - (c) Data analysis.
 - (d) Data interpretation.
80. Which method is used to measure the color of water ?
- (a) Gravimetric analysis.
 - (b) Chromatography.
 - (c) Tintometer method.
 - (d) Hydrometer analysis.
81. How can remote sensing best contribute to water resource management ?
- (a) By tracking the movement of glaciers.
 - (b) By mapping the distribution of wetlands.
 - (c) By studying the behaviour of marine mammals.
 - (d) By monitoring changes in groundwater levels.

82. Which of the following is a less common application of GIS in environmental science ?
- (a) Habitat mapping and conservation.
 - (b) Flood risk assessment.
 - (c) Land use planning.
 - (d) Archaeological excavations.
83. When can a person complaint to the police regarding noise pollution level ?
- (a) When the ambient noise standards exceed by 20 dB.
 - (b) When the ambient noise standards exceed by 10 dB.
 - (c) When the ambient noise standards exceed by 30 dB.
 - (d) When the ambient noise standards exceed by 50 dB.
84. GIS is used in natural disaster management for :
- (a) By tracking the migration patterns of birds.
 - (b) By analyzing the movement of tectonic plates.
 - (c) By mapping vulnerable areas and planning evacuation routes.
 - (d) By monitoring changes in atmospheric pressure.
85. What is the main cause of ocean acidification ?
- (a) Deforestation.
 - (b) Burning fossil fuels.
 - (c) Volcanic eruptions.
 - (d) Industrial agriculture.
86. What is the primary purpose of GIS ?
- (a) To manage financial transactions.
 - (b) To perform medical diagnoses.
 - (c) To analyze geographic data and spatial relationships.
 - (d) To control traffic signals.

87. Which of the following water treatment process is done after filtration of water ?
- (a) Secondary sedimentation. (b) Flocculation.
(c) Primary sedimentation. (d) Disinfection.
88. Which of the following air pollution control device has maximum efficiency ?
- (a) Spray tower. (b) Wet cyclonic scrubber.
(c) Dynamic precipitator. (d) Electrostatic precipitator.
89. Which of the following is a common consequence of deforestation ?
- (a) Increased biodiversity. (b) Desertification.
(c) Reduced carbon emissions. (d) Preservation of ecosystems.
90. What is the term for the process by which water changes from a liquid to a gas ?
- (a) Evaporation. (b) Condensation.
(c) Precipitation. (d) Transpiration.
91. Which of the following is an example of an environmental chemical process ?
- (a) Photosynthesis. (b) Respiration.
(c) Acid rain formation. (d) Cell division.
92. The presence of which of the following in sewage indicates nitrogen content before decomposition of sewage ?
- (a) Nitrites. (b) Nitrates.
(c) Free ammonia. (d) Albuminoid nitrogen.
93. What are the types of water flow in the soil ?
- (a) Linear flow.
(b) Turbulent flow and Laminar flow.
(c) None of the mentioned.
(d) All of the mentioned.

94. Which segment of the environment is primarily responsible for regulating the Earth's climate and weather patterns ?
- (a) Hydrosphere. (b) Atmosphere.
(c) Biosphere. (d) Lithosphere.
95. The study of seepage of water through soil is important for, which of the following purpose ?
- (a) Drainage of soils.
(b) Stability of slopes.
(c) Ground water flow towards well.
(d) All of the mentioned.
96. What is a primary pollutant ?
- (a) Pollutant forms in the atmosphere through chemical reactions involving other pollutants.
(b) A pollutant naturally occurring and does not pose harm to the environment.
(c) A pollutant that directly emitted into the environment in a harmful form.
(d) A pollutant that is only harmful to aquatic ecosystems.
97. The geological formation which yields only insignificant quantity of groundwater is :
- (a) Aquifer. (b) Aquifuge.
(c) Aquiclude. (d) Aquitard.
98. What is the primary source of mercury pollution in aquatic ecosystems ?
- (a) Industrial emissions. (b) Agricultural runoff.
(c) Automobile exhaust. (d) Volcanic activity.
99. What is the name of the process to clean water using filters ?
- (a) Sublimation. (b) Oxidation.
(c) Rainwater harvesting. (d) Purification.

100. What are non-persistent environmental pollutants ?

- (a) Pollutants that accumulate in the environment over time.
- (b) Pollutants that are only found in aquatic environments.
- (c) Pollutants those are resistant to degradation
- (d) Pollutants that degrade rapidly in the environment.