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CALICUT UNIVERSITY CENTRALIZED ENTRANCE TEST (CU–CET)
APRIL 2025

M.Sc. ENVIRONMENTAL SCIENCE

Time : Two Hours Maximum : 400 Marks

Each question carries 4 marks.
1 mark will be deducted for each wrong answer.

1. What is the main component of smog ?
   (a) Nitrogen dioxide.
   (b) Carbon dioxide.
   (c) Oxygen.
   (d) Sulfur dioxide.

2. Environmental resources are :
   (a) The gross production value of the world's goods and services.
   (b) The maintenance of productivity of natural and human assets to the next generation.
   (c) The total amount of solar energy converted into biochemical energy through plant photosynthesis.
   (d) Resources provided by nature that cannot be allocated unit by unit.

3. Which of the following is a method for reducing water pollution ?
   (a) Recycling.
   (b) Using chemical fertilizers.
   (c) Dumping waste into water bodies.
   (d) Implementing wastewater treatment.

4. Which of the following is NOT a greenhouse gas ?
   (a) Carbon dioxide.
   (b) Methane.
   (c) Oxygen.
   (d) Nitrous oxide.

5. Who was the first scientist to coin the term SMOG and to describe the layers of SMOG ?
   (a) Nikola Tesla.
   (b) Stephen Hawking.
   (c) Dr Henry Antoine.
   (d) Nicolaus Copernicus.

6. Which of the following answers applies to renewable natural resource ?

   (a) Once the renewable natural resource is used, it is gone forever.

   (b) Renewable resources are costly to extract.

   (c) Renewable resources can be harvested at any rate without harming future supplies.

   (d) None of the above.

7. What is the term for the process by which carbon is released from the soil into the atmosphere ?

   (a) Carbon fixation. (b) Carbon sequestration.

   (c) Carbon cycling. (d) Carbon emission.

8. Which of the following particles is called the particulate pollutants ?

   (a) Ozone. (b) Radon.

   (c) Fly Ash. (d) Ethylene.

9. Which of the following statements is true about the Air Quality Index ?

   (a) It indicates the colour of the air.

   (b) It determines the intensity of sound and sound pollution.

   (d) It estimates air pollution mainly sulphur content in the air.

   (d) It predicts ozone levels in your area.

10. Consider the following statements and identify the right answer, i) According to the Malthusian theory, supply of food grains increases in geometric progression ii) The population grows in arithmetic progression.

    (a) i) only. (b) ii) only.

    (c) Both. (d) None of the above.

11. At what level a sound becomes physical pain ?

    (a) Above 50 dB. (b) Above 70 dB.

    (c) Above 80 dB. (d) Above 100 dB.

12. What is the term for the process by which nitrogen is converted into forms that can be used by plants ?

    (a) Nitrogen fixation. (b) Nitrogen deposition.

    (c) Nitrogen assimilation. (d) Nitrogen cycling.

13. When environmental Lapse Rate (ELR) is less is 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.

14. Which of the following explain the term economic development ?

    (a) Improvement in the technology involved.

    (b) Improvement in production.

    (c) Improvement in distribution system.

    (d) All of the above.

15. Which of the following air pollution control device has maximum efficiency ?

    (a) Spray tower. (b) Wet cyclonic scrubber.

    (c) Dynamic precipitator. (d) Electrostatic precipitator.

16. What does the term "externality" refer in the context of environmental economics ?

    (a) Positive impacts of economic activities on the environment.

    (b) Negative impacts of economic activities on third parties not involved in transaction.

    (c) Equilibrium state between economic growth and environmental conservation.

    (d) Direct relationship between economic development and environmental sustainability.

17. The electron emitted in β - radiation originates from where ?

    (a) Inner orbits of atoms.

    (b) Free electrons existing in nuclei.

    (c) The decay of a neutron in nuclei.

    (d) Photon escaping from the nucleus.

18. What is the primary goal of sustainable development in the context of economics and the environment ?

(a) Maximizing economic growth at the expense of environmental conservation.

(b) Achieving environmental conservation without regard to economic implications.

(c) Balancing economic development with environmental protection to meet the needs of present and future generations.

(d) Ensuring that economic growth and environmental conservation remain separate and independent objectives.

19. Air pollution that occurs in sunlight is :

(a) Reducing smog.

(b) Acid rain.

(c) Oxidizing smog.

(d) Fog.

20. Which of the following is a method for reducing air pollution ?

(a) Planting trees.

(b) Clear-cutting forests.

(c) Burning fossil fuels.

(d) Dumping waste into water bodies.

21. The quantity of DDT at each trophic level in the food chain :

(a) Decreases.

(b) Remains the same.

(c) Increases.

(d) Changes.

22. Which of the following is NOT a key objective of the National Green Tribunal (NGT) in India ?

(a) Providing speedy environmental justice.

(b) Handling cases related to environmental protection and conservation.

(c) Overseeing the implementation of environmental laws.

(d) Promoting industrial development at the expense of environmental concerns.

23. Brewery and sugar factory waste alter the quality of a water body by increasing :

(a) Temperature.

(b) Turbidity.

(c) pH.

(d) COD and BOD.

24. The wildlife protection Act was enacted in India in which year ?

(a) 1982.

(b) 1972.

(c) 1986.

(d) 1987.

25. Which of the following is the main reason for producing the atmospheric greenhouse effect ?

(a) Absorption and re-emission of ultraviolet radiations by the atmosphere.

(b) Absorption and re-emission of infrared radiations by the atmosphere.

(c) Absorption and re-emission of visible light by the atmosphere.

(d) None of the above.

26. Which governmental body is responsible for implementing and enforcing the Environmental Protection Act 1986 in India ?

(a) Ministry of Environment, Forest and Climate Change (MoEFCC).

(b) Ministry of Health and Family Welfare.

(c) Ministry of Agriculture and Farmers Welfare.

(d) Ministry of Water Resources, River Development and Ganga Rejuvenation.

27. What is the primary objective of the Environmental Protection Act 1986 in India ?

(a) Promoting industrial growth.

(b) Protecting and improving the quality of the environment.

(c) Expediting urban development projects.

(d) Regulating wildlife conservation.

28. Why the term oscillation is accompanied with El Nino and La Nina ?

(a) Because its fluctuations are perfectly periodic.

(b) Because its fluctuations are not perfectly periodic.

(c) Because they recur in the form of regular cycles in climate parameters.

(d) Because it is cool phase of ENSO with sea surface temperature in the eastern Pacific below average and air pressures high in the eastern and low in western Pacific.

29. Which year the national environmental tribunal act enacted ?

(a) 1995. (b) 1998.

(c) 1996. (d) 1985.

30. Consider the following statement (s) related to the similarity of El Nino and La Nina.

I They are part of a larger cycle called ENSO, or El Niño-Southern Oscillation.

II They are known to alter climate across more than half the planet and dramatically impact weather patterns.

Code :

(a) Only I. (b) Only II.

(c) Both I and II. (d) Neither I nor II.

31. What is the primary purpose of the National Environment Appellate Authority (NEAA) Act 1997 ?

(a) To regulate environmental pollution.

(b) To provide a forum for adjudicating appeals against orders of environmental authorities.

(c) To establish a mechanism for environmental monitoring.

(d) To promote environmental conservation awareness.

32. The United Nation's Commission on Sustainable Development (CSD) was started by the UN General Assembly in the year :

(a) 1995. (b) 1994.

(c) 1993. (d) 1992.

33. What was the main focus of the Stockholm Conference ?

(a) Climate change. (b) Biodiversity conservation.

(c) Environmental pollution. (d) Renewable energy.

34. Which of the following is a consequence of coral bleaching ?

(a) Increased coral reef growth. (b) Enhanced marine biodiversity.

(c) Decline in fish populations. (d) Expansion of coral reefs.

35. What is the main source of methane emissions ?

(a) Rice paddies. (b) Automobiles.

(c) Coal-fired power plants. (d) Deforestation.

36. What are the two main types of drip irrigation ?

(a) Surface and Subsurface drip irrigation.

(b) Under and subsurface drip irrigation.

(c) Top and surface drip irrigation.

(d) Top and under drip irrigation.

37. What is the term for the process by which pollutants are removed from the atmosphere by precipitation ?

(a) Condensation. (b) Precipitation.

(c) Deposition. (d) Transpiration.

38. Which of the following is a characteristic of an invasive species ?

(a) It helps increase biodiversity.

(b) It is native to the ecosystem it invades.

(c) It outcompetes native species for resources.

(d) It has a limited impact on the ecosystem.

39. What is the main objective of the Kyoto Protocol ?

(a) To promote sustainable development.

(b) To regulate air pollution.

(c) To reduce greenhouse gas emissions.

(d) To conserve biodiversity.

40. Which of the following statement is correct regarding SMOG ?

(a) SMOG is not originates from fog.

(b) SMOG is formed from smoke.

(c) SMOG originates from water vapor.

(d) SMOG originates through the combination of fog and smoke.

41. Which ozone-depleting substances are regulated under the Montreal Protocol ?

(a) Chlorofluorocarbons (CFCs). (b) Hydrochlorofluorocarbons (HCFCs).

(c) Halons. (d) All of the above.

42. The atmosphere is naturally composed of many gases which are presented in different ratios. Which gas is present in the highest quantity ?

(a) Oxygen.
(b) Nitrogen.
(c) Hydrogen.
(d) Both (1) and (2).

43. Which of the following acts is considered the cornerstone of environmental legislation in India, providing a comprehensive framework for the protection and improvement of the environment ?

(a) Wildlife Protection Act, 1972.
(b) Forest (Conservation) Act, 1980.
(c) Water (Prevention and Control of Pollution) Act, 1974.
(d) Environment Protection Act, 1986.

44. In order to control the emission of harmful gases into the atmosphere, a catalytic converter can be used. What of the following are the effects of this device ?

(a) Conversion of carbon monoxide into carbon dioxide.
(b) Conversion of nitric oxides into nitrogen dioxide.
(c) Conversion of hydrocarbons into water and carbon dioxide.
(d) All of these.

45. Which agency is responsible for implementing and enforcing environmental laws at the national level in India ?

(a) Ministry of Environment and Forests.
(b) Central Pollution Control Board (CPCB).
(c) State Pollution Control Boards (SPCBs).
(d) Ministry of Water Resources, River Development and Ganga Rejuvenation.

46. CFCs (Chlorofluorocarbons) have not been designated for use in refrigerators since they :

(a) Raise the temperature.
(b) Degrade ozone layer.
(c) Harm the ecosystem.
(d) Harm the human body.

47. What are the three relevant bands of solar radiation ?

(a) UV, infrared and Radio waves.

(b) UY, visible and infrared waves.

(c) Ultrasonic, infrared and visible light.

(d) UV, ultrasonic and Gamma rays.

48. What is soil profile ?

(a) A cross sectional view of the horizons in a soil.

(b) A front view of the horizons in a soil.

(c) A cross sectional view of the horizons in rocks.

(d) A front view of the horizons in rocks.

49. According to the Nebular Hypothesis, how did the Earth form ?

(a) It was created by a divine being.

(b) It formed from the collision of two planets.

(c) It accreted from a spinning disk of gas and dust.

(d) It originated from the remains of a supernova.

50. What is called for the mixture of all the contents of soil ?

(a) Erosion. (b) Sublimation.

(c) Degradation. (d) Loams.

51. What is called for the movement of surface litter and topsoil from one place to another ?

(a) Soil submerges. (b) Soil degradation.

(c) Soil erosion. (d) Soil pollution.

52. What is used to convert wastelands into agricultural lands ?

(a) Check dams. (b) Water purifier.

(c) Rain harvesters. (d) Gradonies.

53. What is the Earth's innermost layer called ?

(a) Crust. (b) Mantle.

(c) Outer core. (d) Inner core.

54. Which among the following does not cause pollution ?

(a) Automobiles.
(b) Thermal power plant.
(c) Hydro-electric plant.
(d) Nuclear power plant.

55. What is the process by which continents move apart from each other called ?

(a) Convergence.
(b) Divergence.
(c) Subduction.
(d) Seafloor spreading.

56. What is the primary cause of biodiversity loss ?

(a) Habitat destruction.
(b) Renewable energy sources.
(c) Conservation efforts.
(d) Population growth.

57. Which of the following is a consequence of ocean acidification ?

(a) Increased coral reef growth.
(b) Decreased shell formation in marine organisms.
(c) Expansion of sea ice.
(d) Reduction in sea levels.

58. Which mineral group is the most common in igneous rocks ?

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

59. "Roaring forties" is the term used to describe which of the following winds ?

(a) East-to-west air winds in the southern hemisphere.
(b) West-to east air winds in the northern hemisphere.
(c) East-to-west air winds in the northern hemisphere.
(d) West-to-east air winds in the southern hemisphere.

60. Which mineral is composed of silicon dioxide (SiO_2) and is commonly found in both igneous and sedimentary rocks ?

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

61. Which of the following indicates the correct order of the principal layers of the earth's atmosphere from top to bottom ?

(a) Troposphere - Stratosphere - Mesosphere - Thermosphere - Exosphere.

(b) Thermosphere - Stratosphere - Troposphere - Mesosphere - Exosphere.

(c) Exosphere - Thermosphere - Mesosphere - Stratosphere - Troposphere.

(d) Exosphere - Mesosphere - Thermosphere - Stratosphere - Troposphere.

62. Which factor determines the strength of the nuclear charge in an atom ?

(a) The number of protons.

(b) The number of neutrons.

(c) The number of electrons.

(d) The mass number.

63. Which of the following is a characteristic of a sustainable ecosystem ?

(a) Rapid depletion of natural resources.

(b) Loss of biodiversity.

(c) Balance between resource use and regeneration.

(d) Increased pollution levels.

64. What is the unit of measurement for mass binding energy ?

(a) Kilograms.

(b) Joules.

(c) Volts.

(d) Tesla.

65. What is the intermediate zone composed of in aerobic-anaerobic ponds ?

(a) Algae.

(b) Aerobic bacteria.

(c) Facultative bacteria.

(d) Organic solids.

66. What is a radioactive decay series ?

(a) A sequence of nuclear reactions in a nuclear reactor.

(b) A chain of radioactive decays starting with a radioactive parent nucleus and ending with a stable daughter nucleus.

(c) A series of chemical reactions involving radioactive isotopes.

(d) A process of converting non-radioactive elements into radioactive elements.

67. Bernoulli equation not be applicable for ?

(a) Viscous flow. (b) Incompressible fluid.

(c) Steady flow. (d) Laminar flow.

68. Which of the following is NOT a common platform used for remote sensing ?

(a) Satellites. (b) Aircraft.

(c) Ground-based sensors. (d) Microscopes.

69. A bus moving along a straight path and takes a sharp turn to the right side suddenly. The passenger sitting on the bus will :

(a) Bent towards right side. (b) Fall in the forward side..

(c) Bent towards left side. (d) None of the above

70. Which remote sensing technique uses laser pulses to measure distances to the Earth's surface ?

(a) Lidar (Light Detection and Ranging).

(b) Radar (Radio Detection and Ranging).

(c) Sonar (Sound Navigation and Ranging).

(d) InSAR (Interferometric Synthetic Aperture Radar).

71. Isotherms are imaginary lines that join places of equal :

(a) Atmospheric pressure. (b) Temperature.

(c) Sunlight. (d) None.

72. What is GIS (Geographic Information System) ?

(a) A system for tracking global weather patterns.

(b) A technology for measuring ocean depths.

(c) A tool for capturing, storing, analyzing, and managing spatial or geographic data.

(d) A method for studying subatomic particles.

73. Heat transfer takes place according to which of the following law ?

(a) Newton's second law of motion. (b) First law of thermodynamics.

(c) Newton's law of cooling. (d) Second law of thermodynamics.

74. Which GIS application involves modeling and predicting the spread of pollutants in the environment ?

(a) Habitat mapping.
(b) Hydrological modeling.
(c) Pollution dispersion modeling.
(d) Soil erosion mapping.

75. What is the term for the process by which pollutants accumulate in the tissues of organisms as they move up the food chain ?

(a) Biomagnification.
(b) Eutrophication.
(c) Bioaccumulation.
(d) Transpiration.

76. What role does GIS play in wildlife management and conservation ?

(a) By measuring the height of trees in a forest.
(b) By tracking the migration patterns of birds and animals.
(c) By studying the chemical composition of soil.
(d) By analyzing the properties of rocks in a mountain range.

77. In liquids and gases, heat transmission is primarily caused by :

(a) Convection.
(b) Radiation.
(c) Conduction.
(d) Conduction as well as convection.

78. Which of the following is a characteristic of sustainable agriculture ?

(a) Heavy use of synthetic fertilizers and pesticides.
(b) Monoculture farming.
(c) Crop rotation and organic farming practices.
(d) Clearing large areas of land for agriculture.

79. Suspended solids are measured by which of the following ?

(a) Turbidity rod.
(b) Gravimetric test.
(c) Chromatography.
(d) Jackson's turbidity meter.

80. Which of the following is a consequence of overfishing ?

(a) Increased fish populations.
(b) Decline in marine biodiversity.
(c) Expansion of coral reefs.
(d) Improved water quality.

81. 1 TCU (True Color Unit) is equivalent to :

(a) The color produced by 1 g of platinum cobalt.

(b) The color produced by 1 mg of platinum cobalt.

(c) The color produced by 1 mg of platinum cobalt in 1L of distilled water.

(d) The color produced by 1 mg of platinum cobalt in 1 mL of distilled water.

82. Which of the following statement is wrong regarding turbidity ?

(a) It is an extent to which light is absorbed by particles in the water.

(b) It is expressed in ppm.

(c) It depends on the fineness of particle present in the water.

(d) Turbidity rod is a laboratory method to measure turbidity.

83. Which of the following is an example of a secondary pollutant ?

(a) Carbon monoxide (CO). (b) Nitrogen dioxide (NO_2).

(c) Ozone (O_3). (d) Volatile organic compounds (VOCs).

84. Which of the following is an example of point source pollution ?

(a) Fertilizer runoff from agricultural fields.

(b) Automobile emissions.

(c) Oil spill from a tanker.

(d) Pesticide drifts from fields.

85. Which of the following is an example of a persistent environmental pollutant ?

(a) Carbon dioxide (CO_2). (b) Sulfur dioxide (SO_2).

(c) Polychlorinated biphenyls (PCBs). (d) Nitrogen oxides (NOx).

86. Why burning waste is not an acceptable practice of solid waste management ?

(a) Because it is very costly.

(b) Because it requires modern technologies.

(c) Because it causes several environmental issues.

(d) Because it requires lot of space.

87. What are non-persistent environmental pollutants ?

(a) Pollutants that degrade rapidly in the environment.

(b) Pollutants that accumulate in the environment over time.

(c) Pollutants that are only found in aquatic environments.

(d) Pollutants those are resistant to degradation.

88. The microbes those are active at low temperatures :

(a) Thermophiles. (b) Mesophiles.

(c) Psychrophiles. (d) Neutrophiles.

89. Which of the following factor does not affect the dry weather flow ?

(a) Infiltration of ground water.

(b) Population growth.

(c) Rate of water supply.

(d) Temperature conditions.

90. In ecological terms, what does the term "standing crop" means :

(a) Total weight of whole organic matter.

(b) Total weight of heterotrops.

(c) Total area covered by crops.

(d) None of the above.

91. The maximum quantity of dissolved oxygen present in wastewater is called :

(a) Saturated dissolved oxygen. (b) Maximum dissolved oxygen.

(c) Optimal dissolved oxygen. (d) Peak dissolved oxygen.

92. Which gas is most abundant in Earth's atmosphere ?

(a) Oxygen (O_2). (b) Nitrogen (N_2).

(c) Carbon dioxide (CO_2). (d) Water vapor (H_2O).

93. What is the approximate percentage of oxygen in the Earth's atmosphere ?

(a) 21 %. (b) 78 %.

(c) 0.04 %. (d) 1 %.

94. Darcy's law is valid for only :

(a) Laminar flow.
(b) Turbulent flow.
(c) Hydraulic flow.
(d) All of the mentioned.

95. Which of the following is the formula for pH calculation ?

(a) $\log 10[H+]$.
(b) $-\log 10[H+]$.
(c) $\log 2[H+]$.
(d) $-\log 2[H+]$.

96. What are terricolous animals ?

(a) Animals that live in a particular territory.
(b) Animals that live on high mountains.
(c) Animals that live in the soil.
(d) Animals that live in tree branches.

97. Which layer of the atmosphere is closest to the Earth's surface and where most weather phenomena occur ?

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

98. Global temperature lowering rate as per Paris agreement is _____.

(a) 1°C.
(b) 1.5°C.
(c) 0.5°C.
(d) 2°C.

99. What is organic particulate matter in the atmosphere primarily composed of ?

(a) Carbon-based compounds.
(b) Inorganic minerals.
(c) Heavy metals.
(d) Nitrogen oxides.

100. Method used to increase the water efficient irrigation system ?

(a) By pouring unnecessary water to the land.
(b) By not supplying adequate water.
(c) By applying drip irrigation method.
(d) By using more manures.