

M.Phil./Ph.D. ADMISSION TEST, 2018

Paper II

Subject : 116 - ENVIRONMENTAL SCIENCE

Roll No. (In figures)(In words)

OMR Sheet Sr. No.

○ Signatures of Invigilators 1. 2.

Names of Invigilators 1. 2.

Time : 2 Hours

Max. Marks : 200

GENERAL INSTRUCTIONS

1. Read the instructions given on the Question Booklet and OMR Sheet before starting the answers. All the entries should be filled by **blue or black ball point pen**.
 2. The Question Booklet contains **100** questions and all questions are compulsory.
 3. Each question is of **2** marks. There is **no negative marking**.
 4. Candidates must ensure that the Question Booklet issued to them has all the questions. Defective Question Booklet can be got changed within **10** minutes.
1. प्रश्नों के उत्तर लिखने से पूर्व प्रश्न-पुस्तिका और ओ.एम.आर. शीट पर दिये हुए निर्देश पढ़ें। सभी प्रविष्टियाँ नीले अथवा काले बॉल पॉइन्ट पेन से भरें।
 2. प्रश्न-पुस्तिका में **100** प्रश्न हैं और सभी प्रश्न अनिवार्य हैं।
 3. प्रत्येक प्रश्न **2** अंक का है। कोई नकारात्मक अंकन (**negative marking**) नहीं होगा।
 4. परीक्षार्थी सुनिश्चित कर लें कि उन्हें जो प्रश्न-पुस्तिका दी गई है उसमें सभी प्रश्न अंकित हैं। त्रुटिपूर्ण प्रश्न-पुस्तिका **10** मिनट की अवधि में बदलवाई जा सकती है।

5. In case of any discrepancy between English and Hindi versions of a question, English version will be taken as correct, wherever there are both versions.
 6. Select and darken the circle corresponding to the answer [(A) or (B) or (C) or (D)] in OMR sheet.
 7. In case more than one circles are darkened in a question, it will not be evaluated.
 8. Do not make any stray marks on OMR sheet and do not fold it.
 9. Any candidate found removing pages from the Question Booklet may be disqualified and prosecuted.
 10. Use of unfair means will disqualify the candidate from the examination.
 11. Cell phone, calculator or any such devices are not allowed in the Examination Hall.
 12. No candidate is allowed to leave the seat before handing over the original OMR sheet to the invigilator. Candidate can take Question Booklet and Carbon copy of OMR sheet.
5. किसी प्रश्न के अंग्रेजी और हिन्दी रूपान्तरणों में भिन्नता होने की स्थिति में अंग्रेजी रूपान्तरण सही माना जायेगा जहाँ प्रश्न-पत्र दोनों भाषाओं में है।
 6. सही उत्तर का चयन करें तथा सम्बन्धित [(A) अथवा (B) अथवा (C) अथवा (D)] गोले को ओ.एम.आर. शीट में काला करें।
 7. किसी प्रश्न में एक से अधिक गोले को काला करने पर उसे जाँचा नहीं जायेगा।
 8. ओ.एम.आर. शीट पर किसी तरह का चिह्न न बनायें और न ही उसे मोड़ें।
 9. प्रश्न-पुस्तिका से पृष्ठ निकालते हुए पाये जाने पर परीक्षार्थी को अयोग्य घोषित किया जा सकता है और उसके विरुद्ध विधिक कार्यवाही भी की जा सकती है।
 10. अनुचित साधनों का उपयोग करने पर परीक्षार्थी को परीक्षा के लिए अयोग्य घोषित कर दिया जायेगा।
 11. सेलफोन, संगणक और ऐसी किसी भी अन्य प्रविधियों को परीक्षा भवन में लाने की अनुमति नहीं है।
 12. ओ.एम.आर. शीट की मूल प्रति वीक्षक को सुपुर्द किये बिना किसी भी परीक्षार्थी को अपना स्थान छोड़ने की अनुमति नहीं है। परीक्षार्थी प्रश्न-पुस्तिका एवं ओ.एम.आर. शीट की कार्बन प्रति को अपने साथ ले जा सकेगा।

1. Speciation without geographical isolation is called :
 - (A) Asympatric speciation
 - (B) Sympatric speciation
 - (C) Non Sympatric speciation
 - (D) Allopatric speciation

2. So called Ozone umbrella is present in which layer of the atmosphere ?
 - (A) Stratosphere
 - (B) Mesosphere
 - (C) Troposphere
 - (D) Thermosphere

3. Wild-life Protection Act came into force in India in :
 - (A) 1968
 - (B) 1972
 - (C) 1976
 - (D) 1986

4. United Nations Conference on Human Environment in June 1972 was held at :
 - (A) Geneva
 - (B) Stockholm
 - (C) Rio de Janeiro
 - (D) Johannesburg

5. Which of the following is the best indicator of SO₂ pollution ?
 - (A) Bryophytes
 - (B) Pteridophytes
 - (C) Lichens
 - (D) Algae

6. The headquarter of IUCN is located at :
 - (A) Vienna, Austria
 - (B) New York, USA
 - (C) Paris, France
 - (D) Gland, Switzerland

7. Who proposed Lambda (λ) shaped energy flow model?
 - (A) Lindeman
 - (B) Tansley
 - (C) Wattman
 - (D) Odum

8. What does the Ozone layer absorb?
 - (A) X-rays
 - (B) Y-rays
 - (C) Infra-red rays
 - (D) Ultra-violet rays

9. CFCs are widely used as :
 - (A) Propellants
 - (B) Heaters
 - (C) Refrigerants
 - (D) Conductor

10. The term "Biosphere" was coined by :
 - (A) Charles Elton
 - (B) Lindeman
 - (C) Eduard Suess
 - (D) Vernadsky

11. Which are amongst biodiversity hot spots in India ?
 - (A) Eastern Ghats
 - (B) Western Ghats
 - (C) Satpura Hills
 - (D) Aravali Hills

12. Emphysema in man, may be caused by :
 - (A) Chain smoking of cigarettes
 - (B) Living in a place with severe cold
 - (C) Residing at a place with severe hot
 - (D) Working at a place of stone and marble cutting

13. Which is an appropriate example of ex-situ conservation method of biodiversity ?
- (A) Biosphere reserve
(B) Germplasm bank
(C) National park
(D) Wild-life sanctuary
14. Following statement about metal-ion detection using Atomic Absorption Spectroscopy (AAS) and Flame Photometry (FP), is true :
- (A) AAS has high sensitivity
(B) FP has high sensitivity
(C) FP measures absorption of the metal
(D) FP can detect only one element at a tissue
15. Normal altitude of GPS satellite is :
- (A) 15200 km
(B) 20200 km
(C) 24400 km
(D) 36600 km
16. The first marine biosphere reserve established in India is located in the state of :
- (A) Gujarat
(B) Kerala
(C) Tamil Nadu
(D) Andhra Pradesh
17. The principles of limiting factor in an eco-system were proposed by :
- (A) Odum and Clarke
(B) Shelford and Allen
(C) Leibig and Shelford
(D) Leibig and Odum
18. World biodiversity day is observed on :
- (A) 22nd May
(B) 5th June
(C) 22nd June
(D) 1st December
19. The average salinity of sea water is :
- (A) 0.25%
(B) 0.35%
(C) 2.5%
(D) 3.5%
20. The temperature of upper layer of water of a pond is 35°C. What will be its reading in °F ?
- (A) 67°F
(B) 95°F
(C) 117°F
(D) 98°F
21. The organisms which can tolerate only a small range of temperature difference in their surrounding, are known as :
- (A) Homiothermal
(B) Stenothermal
(C) Eurythermal
(D) Heterothermal
22. During cryopreservation, the temperature of liquid Nitrogen (N₂) remains at :
- (A) -02°C
(B) -50°C
(C) -196°C
(D) -220°C
23. An appropriate example of intra specific relationship is :
- (A) Antibiosis
(B) Commensalism
(C) Cannibalism
(D) Mutualism
24. During Nitrogen (N₂) cycle, the bacteria, which convert Nitrate into molecular Nitrogen (N₂) is :
- (A) *Bacillus ramosus*
(B) *Bacillus mycoides*
(C) *Nitrococcus* sp.
(D) *Pseudomonas denitrificans*

25. Which of the following bacterium is called as superbug, that could clean up oil spills ?
- (A) *Bacillus subtilis*
 (B) *Pseudomonas putida*
 (C) *Pseudomonas denitrificans*
 (D) *Bacillus denitrificans*
26. Excessive presence of which one of the following causes acid rain ?
- (A) Nitrous oxide
 (B) Methane
 (C) Carbon dioxide
 (D) Sulphur dioxide
27. The main components of biogas are :
- (A) Methane and Carbon dioxide
 (B) Methane, Hydrogen and Nitric oxide
 (C) Methane and Sulphur dioxide
 (D) Methane and Nitric oxide
28. In India, the most potent site to produce tidal energy is :
- (A) The Gulf of Cambay
 (B) Cambay basin of Alaknanda
 (C) Golden Beach, Chennai
 (D) Goa beach
29. "Project Tiger" was launched in :
- (A) 1967
 (B) 1972
 (C) 1976
 (D) 1981
30. Atmospheric layer, where temperature starts increasing with altitude is :
- (A) Lower Troposphere
 (B) Upper Troposphere
 (C) Thermosphere
 (D) Mesosphere
31. Total organic matter present in an ecosystem is known as :
- (A) Litter
 (B) Biome
 (C) Energy
 (D) Biomass
32. A higher Biological Oxygen Demand (BOD) indicates that :
- (A) Water is pure
 (B) Low level of microbes are present
 (C) High level of microbes are present
 (D) Microbial population is absent
33. Centre for Environmental Education (CEE) is located at :
- (A) New Delhi
 (B) Bengaluru
 (C) Ahmedabad
 (D) Dehradun
34. Why is human population growth often considered the foremost environmental problem ?
- (A) The Earth will run out of open land space within the next 50 years.
 (B) Increasing population strains resources and creates additional wastes.
 (C) There is no way to provide food for additional people.
 (D) There is insufficient oxygen production on Earth for more than 10 billion people.
35. How are the impacts of natural hazards linked to population growth ?
- (A) Population growth changes the rate of geologic processes, in turn changing the frequency of hazardous events.
 (B) Population growth concentrates people and resources, such that the impacts of an individual natural hazard can be greater.
 (C) Population growth weakens societal defenses against natural hazards.
 (D) Natural hazards strongly influence population growth.

36. Which type of malaria parasite attacks young, weak and undernourished individuals?
- Plasmodium ovale
 - Plasmodium knowlesi
 - Plasmodium falciparum
 - Plasmodium vivax
37. Which of the following causes a tropical cyclone to rotate?
- Geostrophic wind
 - Frictional force
 - Coriolis effect
 - Westerlies
38. Which of the following is caused by global warming?
- Ice sheets of Antarctica are breaking up.
 - The edge of West Antarctica Ice-sheet is shrinking at the rate of about 125 metres each year.
 - Coral Bleaching.
 - Balance patterns of precipitation.
39. What is the Green-house effect?
- Life on Earth "exhales" gas that warm up the atmosphere.
 - The tilt of the Earth changes the amount of solar energy the Earth receives.
 - The sun is putting out more radiant energy over time.
 - Certain gases in the atmosphere trap heat and warm the Earth.
40. What causes ocean acidification?
- CO₂ dissolved in ocean water
 - Sunscreen in the water
 - Ocean population
 - Warm water
41. Approximately what percentage of Earthquakes occur at plate boundaries?
- 25%
 - 50%
 - 75%
 - 90%
42. The three major steps involved in mineral processing are:
- Crushing, grinding and flotation
 - Liberation, separation and extraction
 - Mining, transportation and marketing
 - Extraction, processing and smelting
43. Purification and removal of bacteria, solid materials and other impurities from used water is classified as:
- Distillation
 - Cloud seeding
 - Reclamation
 - Membrane filtration
44. When making a soil survey, soil scientists dig soil pits primarily for the purpose of:
- Characterising and describing the different types of soil that exist in the area.
 - Locating the boundaries between adjacent soils in the field.
 - Obtain samples and data points used in the making computer generated soil maps.
 - Determining seasonal changes in water table depths that define drainage classes.
45. Edema and hypertension are toxicity symptoms of which major mineral?
- Magnesium
 - Calcium
 - Sodium
 - Sulfate

46. What is phenomenon of formation of coal called ?
(A) Diagenis
(B) Metamorphism
(C) Photosynthesis
(D) Protolith
47. What is biogas composed of ?
(A) O_2 and CO_2
(B) CO_2 and NO_2
(C) CH_4 and O_2
(D) CH_4 and CO_2
48. "Ozone" in stratosphere absorbs harmful :
(A) Dust particles
(B) Radiations
(C) Fumes
(D) Air pollutants
49. "Polychlorinated diphenyles" are by-products of plastics, lubricants, rubber and _____.
(A) Paper production
(B) Wood production
(C) Steel production
(D) All of above
50. Which solid waste disposal method is cheaper and simpler ?
(A) Pulverization
(B) Compositing
(C) Sanitary Land-filling
(D) Incineration
51. Carbon dioxide molecules in air absorb :
(A) Ultraviolet radiations
(B) Infrared radiations
(C) Sunlight
(D) Heat
52. What is the function of frequency analyzer ?
(A) It analysis noise signal in frequency domain into various frequency bands by magnetically separating the signal.
(B) It analysis noise signal in frequency domain into various frequency bands by electronically separating the signal.
(C) It analysis noise signal in frequency domain into various frequency bands by electromagnetically separating the signal.
(D) None of the above.
53. Why Ship accidents cause Marine Pollution ?
(A) Because if ship carrying passengers to collapse it results in the death of many people.
(B) Because ship is very huge in its size.
(C) Dredged material which carries heavy metals cause marine pollution.
(D) Ship materials stuck inside the marine organisms.
54. When does the rate of aerobic oxidation reduced in the sewage that is reduced to the water ?
(A) When O_2 concentration falls below 3.5 mg/l
(B) When O_2 concentration falls below 2.5 mg/l
(C) When O_2 concentration falls below 1.5 mg/l
(D) When O_2 concentration falls below 4.5 mg/l
55. Which one of the following causes thermal pollution ?
(A) Release of cold water
(B) Organic manures
(C) Purified water
(D) More number of trees
56. Which of the radioactive material is largely associated with bone cancer ?
(A) Radium - 226
(B) Thorium - 232
(C) Iodine
(D) Strontium - 90

57. The occurrence of pesticides like DDT in higher trophic levels is termed as :
- Bioremediation
 - Biomagnification
 - Biological enhancement
 - Biopollution
58. Which day was celebrated as first World Health Day ?
- 7th April 1946
 - 7th April 1949
 - 7th April 1950
 - 7th April 1948
59. Which among the following, the most polluted city is ?
- Delhi
 - Bhopal
 - Madras
 - Bengaluru
60. What is the composition of solar radiation spectrum ?
- 6 - 7% UV light, around 42% visible light, 51% near IR.
 - 14 - 15% UV light, around 35% visible light, 50% near IR.
 - 51% UV light, around 42% visible light, 6 - 7% near IR.
 - 20% UV light, 52% visible light, 28% near IR.
61. Name the type of ionizing radiation which are emitted from radioactive compounds and can penetrate biological materials and travel great distance is :
- α - rays (Alpha rays)
 - β - rays (Beta rays)
 - γ - rays (Gamma rays)
 - None of these
62. What are three principal pollutants of prime concern in agriculture ?
- Chlorine compounds, Pesticides, SO₂
 - Chlorine compounds, Fog, Lead
 - SO₂, CO, Chlorine
 - SO₂, Fluorine compound and Smog
63. When was the environmental protection act passed ?
- 1981
 - 1956
 - 1996
 - 1986
64. Ground water samples should be collected at least upto a distance of :
- 5 km
 - 4 km
 - 3 km
 - 2 km
65. CFC is mainly produced by :
- Television
 - Refrigerator
 - Tube light
 - Cooking gas
66. Potassium permanganate is used for purifying drinking water, because :
- It is a sterilising agent
 - It dissolves the impurities of water
 - It is a reducing agent
 - It is an oxidising agent
67. Which of the following is **not** a stage of environmental auditing ?
- Pre-audit
 - Post-audit
 - Audit
 - Extreme-audit
68. In India, EIA notification was first issued in the year :
- 2011
 - 2018
 - 1994
 - 1961
69. Which of the following is **not** a technique of environmental management system ?
- Environmental audit
 - Life-cycle analysis
 - Agenda 21
 - Cost-benefit analysis

70. Which one of the following country first introduced environmental auditing ?
- (A) Pakistan
(B) India
(C) USA
(D) China
71. Green house effect is due to :
- (A) X-rays
(B) Ultra-violet radiations
(C) Gamma radiations
(D) Infra-red radiations
72. The Air (Prevention and Control of Pollution) Act of India was enacted in the year _____.
- (A) 1981
(B) 1974
(C) 1999
(D) 2012
73. Which of the following is **not** a pollutant of atmosphere ?
- (A) Hydrogen
(B) Carbon dioxide
(C) Sulphur dioxide
(D) Carbon monoxide
74. Where was the World Summit on Sustainable Development, 2002 held ?
- (A) New Delhi
(B) Brisbane
(C) Johannesburg
(D) Beijing
75. The Water (Prevention and Control of Pollution) Act of India was enacted in the year _____.
- (A) 1986
(B) 2011
(C) 1974
(D) 1996
76. Ozone depletion is associated with _____.
- (A) Troposphere
(B) Ionosphere
(C) Exosphere
(D) Stratosphere
77. Stockholm conference on Human Environment was held in the year _____.
- (A) 2001
(B) 1972
(C) 1992
(D) 1981
78. CAZRI is located at _____.
- (A) Jodhpur
(B) Jaipur
(C) Kota
(D) Ajmer
79. Save Narmada Movement is connected to _____.
- (A) Baba Amte
(B) Medha Patkar
(C) Arundhati Roy
(D) All of above
80. The layer of atmosphere nearest to the earth is _____.
- (A) Stratosphere
(B) Troposphere
(C) Exosphere
(D) None of above
81. Smog is a combination of _____.
- (A) Water and ice
(B) Smoke and acid
(C) Smoke and fog
(D) All of above

82. Red Data Book is published by _____.
- (A) WWF
(B) WCED
(C) ETF
(D) IUCN
83. The Biological Diversity Act of India was enacted in the year _____.
- (A) 1965
(B) 2002
(C) 2010
(D) 1991
84. The Wildlife Protection Act of India was enacted in the year _____.
- (A) 2018
(B) 1975
(C) 2001
(D) 1972
85. The polluted water-borne disease is _____.
- (A) Jaundice
(B) Diarrhoea
(C) Typhoid
(D) All of above
86. In desert, average rainfall is _____.
- (A) 76 - 125 cm
(B) 26 - 75 cm
(C) 0 - 25 cm
(D) Above 126 cm
87. The term oligotrophic is used for _____.
- (A) Polluted water
(B) Desert
(C) Unpolluted pond
(D) Unpolluted lake
88. Which of the following test is used for testing the goodness of fit?
- (A) t test
(B) Normal test
(C) Chi-square test
(D) F test
89. If the geometric mean of number 4, 6 and z is 6, then the value of z is _____.
- (A) 8
(B) 4.5
(C) 4
(D) 9
90. For n attributes, the number of ultimate class frequencies is _____.
- (A) 3^n
(B) 2^n
(C) $2n$
(D) $3n$
91. If $P(A/B) = P(A)$, then events A and B are _____.
- (A) Mutually exclusive events
(B) Independent events
(C) Dependent events
(D) Equal events
92. Blue Baby Syndrome disease is caused due to _____.
- (A) High fluoride in water
(B) High oxygen in water
(C) High chloride in water
(D) High nitrate in water
93. The Headquarter of Zoological Survey of India is located at _____.
- (A) Kolkata
(B) New Delhi
(C) Jaipur
(D) Chandigarh

94. Which of the following is the permissible limit of fluoride in drinking water ?
- (A) 1.5 mg/l
(B) 6 mg/l
(C) 8 mg/l
(D) None of above
95. Which certificate defines environmental management system for a company or project ?
- (A) ISO 14000
(B) INA 369
(C) WD 751
(D) None of above
96. Soil erosion occurs through _____.
- (A) Wind
(B) Water
(C) Cyclones
(D) All of above
97. Thar desert is situated in _____.
- (A) Bangladesh
(B) India and Pakistan
(C) China
(D) All of above
98. The Forest Conservation Act of India was enacted in the year _____.
- (A) 2014
(B) 1980
(C) 2008
(D) 1951
99. The Environmental Protection Act of India came into force in the year _____.
- (A) 1986
(B) 1961
(C) 1974
(D) 1981
100. Where was the United Nations Conference on Environment and Development held in 1992 ?
- (A) Paris
(B) Brisbane
(C) Rio de Janeiro
(D) Dhaka

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SPACE FOR ROUGH WORK / रफ कार्य के लिये जगह

