

Roll. No.

Question Booklet Number

O.M.R. Serial No.

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M.Sc. (SEM.-IV) (NEP) (SUPPLE.) EXAMINATION, 2024-25

ZOOLOGY

Applied Environmental Biology (Elective)

Paper Code							
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Question Booklet
Series

A

Time : 1 : 30 Hours

Max. Marks : 75

Instructions to the Examinee :

1. Do not open the booklet unless you are asked to do so.
2. The booklet contains 100 questions. Examinee is required to answer 75 questions in the OMR Answer-Sheet provided and not in the question booklet. All questions carry equal marks.
3. Examine the Booklet and the OMR Answer-Sheet very carefully before you proceed. Faulty question booklet due to missing or duplicate pages/questions or having any other discrepancy should be got immediately replaced.
4. Four alternative answers are mentioned for each question as - A, B, C & D in the booklet. The candidate has to choose the correct / answer and mark the same in the OMR Answer-Sheet as per the direction :

(Remaining instructions on last page)

परीक्षार्थियों के लिए निर्देश :

1. प्रश्न-पुस्तिका को तब तक न खोलें जब तक आपसे कहा न जाए।
2. प्रश्न-पुस्तिका में 100 प्रश्न हैं। परीक्षार्थी को 75 प्रश्नों को केवल दी गई OMR आन्सर-शीट पर ही हल करना है, प्रश्न-पुस्तिका पर नहीं। सभी प्रश्नों के अंक समान हैं।
3. प्रश्नों के उत्तर अंकित करने से पूर्व प्रश्न-पुस्तिका तथा OMR आन्सर-शीट को सावधानीपूर्वक देख लें। दोषपूर्ण प्रश्न-पुस्तिका जिसमें कुछ भाग छपने से छूट गए हों या प्रश्न एक से अधिक बार छप गए हों या उसमें किसी अन्य प्रकार की कमी हो, उसे तुरन्त बदल लें।
4. प्रश्न-पुस्तिका में प्रत्येक प्रश्न के चार सम्भावित उत्तर- A, B, C एवं D हैं। परीक्षार्थी को उन चारों विकल्पों में से सही उत्तर छानना है। उत्तर को OMR उत्तर-पत्रक में सम्बन्धित प्रश्न संख्या में निम्न प्रकार भरना है :

(शेष निर्देश अन्तिम पृष्ठ पर)

1. Which factor primarily influences the exponential growth of the human population?
 - (A) Mortality rate
 - (B) Fertility rate
 - (C) Emigration
 - (D) Immigration
2. The term “demography” refers to:
 - (A) Study of diseases
 - (B) Study of soil
 - (C) Study of human population statistics
 - (D) Study of climate change
3. Which of the following is a major consequence of overpopulation?
 - (A) Balanced ecosystem
 - (B) Environmental imbalance
 - (C) Soil fertility increase
 - (D) Reduced resource use
4. The first step in regulating human population is:
 - (A) Mass migration
 - (B) Birth control measures
 - (C) Urbanization
 - (D) Increasing fertility
5. Which environmental problem is caused by rapid industrialization?
 - (A) Desertification
 - (B) Global warming
 - (C) Forest regeneration
 - (D) Ozone repair
6. Global warming is mainly caused by:
 - (A) Nitrogen oxides
 - (B) Sulphur dioxide
 - (C) Greenhouse gases
 - (D) Helium
7. Urban water management involves:
 - (A) Oil refinery control
 - (B) Source protection
 - (C) Space research
 - (D) Ozone layer repair
8. Which of the following is not a source of urban water supply?
 - (A) Reservoirs
 - (B) Groundwater
 - (C) Oceans
 - (D) Rivers

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|--|--|
| <p>9. Which parameter is not considered for drinking water quality standards?</p> <p>(A) Turbidity</p> <p>(B) pH</p> <p>(C) Noise level</p> <p>(D) TDS</p> | <p>13. Which of the following contributes to land degradation?</p> <p>(A) Afforestation</p> <p>(B) Overgrazing</p> <p>(C) Organic farming</p> <p>(D) Controlled irrigation</p> |
| <p>10. Solid particles in water are generally measured as:</p> <p>(A) BOD</p> <p>(B) COD</p> <p>(C) TDS</p> <p>(D) DO</p> | <p>14. The main cause of climate change in the last century is:</p> <p>(A) Solar activity</p> <p>(B) Volcanic eruptions</p> <p>(C) Human activities</p> <p>(D) Natural cycles only</p> |
| <p>11. Sewage treatment primarily aims to:</p> <p>(A) Increase turbidity</p> <p>(B) Remove contaminants</p> <p>(C) Increase temperature</p> <p>(D) Add nutrients</p> | <p>15. The Kyoto Protocol deals with:</p> <p>(A) Ozone depletion</p> <p>(B) Greenhouse gas reduction</p> <p>(C) Soil erosion control</p> <p>(D) Water harvesting</p> |
| <p>12. The most effective stage in wastewater treatment to remove pathogens is:</p> <p>(A) Primary</p> <p>(B) Secondary</p> <p>(C) Tertiary</p> <p>(D) Screening</p> | <p>16. Which one is a renewable water resource?</p> <p>(A) Rainwater</p> <p>(B) Groundwater depletion</p> <p>(C) Fossil water</p> <p>(D) Mineral water</p> |

17. Which gas has the highest global warming potential?
- (A) CO₂
(B) CH₄
(C) N₂O
(D) O₃
18. Which of the following is not a challenge for sustainable development in India?
- (A) Land degradation
(B) Population decline
(C) Industrial pollution
(D) Water scarcity
19. Which parameter measures organic matter in wastewater?
- (A) DO
(B) TDS
(C) BOD
(D) pH
20. What is the permissible limit of pH in drinking water as per BIS standards?
- (A) 5.0–6.0
(B) 6.5–8.5
(C) 7.0–9.0
(D) 8.0–10.0
21. Which process removes large debris from sewage?
- (A) Sedimentation
(B) Screening
(C) Chlorination
(D) Aeration
22. Which type of pollution is caused by industrial effluents?
- (A) Thermal
(B) Noise
(C) Light
(D) Radioactive only
23. Which resource is most threatened by rapid urbanization?
- (A) Air quality
(B) Coal reserves
(C) Sand dunes
(D) Ocean currents
24. Which of the following is a measure to manage urban water?
- (A) Rainwater harvesting
(B) Deforestation
(C) Over-irrigation
(D) Dumping waste in rivers

25. Which is the most common greenhouse gas emitted by human activities?
- (A) CO₂
 - (B) N₂
 - (C) O₂
 - (D) CH₄
26. Deforestation affects biodiversity by:
- (A) Increasing habitat area
 - (B) Destroying habitats
 - (C) Reducing carbon dioxide
 - (D) Increasing soil fertility
27. Which is the most common cause of soil degradation in India?
- (A) Waterlogging
 - (B) Erosion
 - (C) Salinity
 - (D) Earthquakes
28. Black soil is best suited for:
- (A) Cotton cultivation
 - (B) Tea plantation
 - (C) Rice cultivation
 - (D) Wheat farming
29. The National Wasteland Development Board was established in:
- (A) 1985
 - (B) 1990
 - (C) 2000
 - (D) 1975
30. The term “integrated land use” refers to:
- (A) Using land for only one purpose
 - (B) Combining multiple uses sustainably
 - (C) Mining extensively
 - (D) Ignoring soil quality
31. Which forest type dominates the Western Ghats?
- (A) Mangroves
 - (B) Tropical evergreen
 - (C) Desert thorn
 - (D) Alpine
32. The Forest Survey of India is headquartered at:
- (A) Dehradun
 - (B) New Delhi
 - (C) Mumbai
 - (D) Bangalore

33. Which NGO is known for “Chipko Movement”?
- (A) Green Peace
(B) Dasholi Gram Swarajya Mandal
(C) WWF
(D) IUCN
34. Agroforestry involves:
- (A) Cultivation without trees
(B) Combining trees with crops
(C) Deforestation
(D) Purely industrial farming
35. Which soil type is found in Rajasthan deserts?
- (A) Alluvial
(B) Arid
(C) Black
(D) Laterite
36. Which species is most affected by deforestation in India?
- (A) Lion-tailed macaque
(B) Cow
(C) Pigeon
(D) Sparrow
37. Land degradation due to salinity is common in:
- (A) Coastal areas
(B) Deserts only
(C) Hill regions
(D) Evergreen forests
38. The National Conservation Strategy was launched in:
- (A) 1992
(B) 1980
(C) 2005
(D) 1972
39. The World Conservation Strategy (WCS) was prepared by:
- (A) IUCN
(B) WWF
(C) UNEP
(D) FAO
40. Which practice helps prevent soil erosion?
- (A) Contour ploughing
(B) Overgrazing
(C) Monocropping
(D) Excessive irrigation
41. Which is a limitation of water resources in India?
- (A) Seasonal rainfall
(B) Unlimited groundwater
(C) Uniform distribution
(D) Constant river flow

42. Forest conservation in India is regulated under:
- (A) Forest Conservation Act, 1980
 - (B) Environmental Protection Act, 1986
 - (C) Wildlife Protection Act, 1972
 - (D) Biodiversity Act, 2002
43. Which region is known as the “Lung of India”?
- (A) North East
 - (B) Rajasthan
 - (C) Deccan Plateau
 - (D) Himalayas
44. The main purpose of agroforestry is:
- (A) Maximizing timber
 - (B) Enhancing biodiversity
 - (C) Expanding deserts
 - (D) Depleting soil
45. Laterite soils are rich in:
- (A) Iron
 - (B) Nitrogen
 - (C) Calcium
 - (D) Potassium
46. The first National Forest Policy of India was adopted in:
- (A) 1952
 - (B) 1988
 - (C) 1970
 - (D) 1965
47. Which natural resource is renewable?
- (A) Forests
 - (B) Coal
 - (C) Petroleum
 - (D) Minerals
48. Which method improves degraded wastelands?
- (A) Afforestation
 - (B) Overgrazing
 - (C) Open cast mining
 - (D) Industrial dumping
49. Which activity leads to habitat fragmentation?
- (A) Road construction
 - (B) Terrace farming
 - (C) Organic farming
 - (D) Mixed cropping
50. Which organization prepares biennial “State of Forest Report”?
- (A) Forest Survey of India
 - (B) Ministry of Water Resources
 - (C) WWF-India
 - (D) CPCB

51. Which of the following is an abiotic factor in the environment?
- (A) Predators
 - (B) Temperature
 - (C) Parasites
 - (D) Decomposers
52. Which soil type is most fertile in India?
- (A) Alluvial
 - (B) Red
 - (C) Black
 - (D) Laterite
53. The gradual change in species composition in an area over time is called:
- (A) Speciation
 - (B) Ecological succession
 - (C) Habitat fragmentation
 - (D) Natural selection
54. Which of the following is a primary consumer in an ecosystem?
- (A) Grasshopper
 - (B) Tiger
 - (C) Eagle
 - (D) Snake
55. The term biotic factor refers to:
- (A) Climate
 - (B) Soil pH
 - (C) Living organisms
 - (D) Sunlight
56. Which is the most important factor determining the distribution of terrestrial organisms?
- (A) Temperature
 - (B) Pressure
 - (C) Salinity
 - (D) Wind speed
57. Edaphic factors refer to:
- (A) Climate-related aspects
 - (B) Soil-related aspects
 - (C) Topography
 - (D) Rainfall
58. The maximum population size that an environment can support is called:
- (A) Population density
 - (B) Carrying capacity
 - (C) Growth rate
 - (D) Resource potential
59. Which of the following gases is the main contributor to acid rain?
- (A) Carbon monoxide
 - (B) Sulphur dioxide
 - (C) Methane
 - (D) Hydrogen

60. Ozone layer is mainly found in which atmospheric layer?
- (A) Troposphere
(B) Stratosphere
(C) Mesosphere
(D) Thermosphere
61. The main cause of ozone layer depletion is:
- (A) Carbon dioxide
(B) CFCs
(C) Nitrogen
(D) Methane
62. Which of the following is a greenhouse gas?
- (A) Oxygen
(B) Nitrogen
(C) Carbon dioxide
(D) Argon
63. In ecological terms, pioneer species are:
- (A) Last species in succession
(B) First species to colonize
(C) Dominant species
(D) Extinct species
64. In India, the “Project Tiger” was launched in:
- (A) 1973
(B) 1980
(C) 1965
(D) 1992
65. Which of the following is NOT a source of air pollution?
- (A) Industrial emissions
(B) Automobile exhaust
(C) Photosynthesis
(D) Biomass burning
66. Which pollutant is mainly responsible for photochemical smog?
- (A) Nitrogen oxides
(B) Ozone
(C) Carbon dioxide
(D) Methane
67. The “black cloud of pollutant” over South Asia is known as:
- (A) Asian haze
(B) Asian brown cloud
(C) Monsoon dust
(D) Tropical cloud
68. Which is an example of secondary air pollutant?
- (A) Sulphur dioxide
(B) Nitrogen dioxide
(C) Ozone
(D) Methane

69. Which of the following metals is a serious air pollutant?
- (A) Iron
 - (B) Lead
 - (C) Calcium
 - (D) Sodium
70. The conversion of bare rock into a complex forest ecosystem is an example of:
- (A) Secondary succession
 - (B) Primary succession
 - (C) Retrogressive succession
 - (D) Climax regression
71. Which of the following is NOT a greenhouse gas?
- (A) Methane
 - (B) Water vapour
 - (C) Oxygen
 - (D) Carbon dioxide
72. The role of decomposers in an ecosystem is to:
- (A) Produce food
 - (B) Break down organic matter
 - (C) Control pests
 - (D) Store energy
73. Nitrogen oxides are produced mainly by:
- (A) Ocean currents
 - (B) Combustion of fossil fuels
 - (C) Photosynthesis
 - (D) Evaporation
74. Which is the largest terrestrial biome?
- (A) Desert
 - (B) Taiga
 - (C) Grassland
 - (D) Rainforest
75. Which is the best method for controlling industrial air pollution?
- (A) Electrostatic precipitators
 - (B) Open burning
 - (C) Landfilling
 - (D) River dumping
76. Which of the following is a major source of noise pollution in urban areas?
- (A) Wind
 - (B) Road traffic
 - (C) Soil erosion
 - (D) Photosynthesis

77. The main source of mercury pollution in water bodies is:
- (A) Agricultural runoff
 - (B) Industrial discharge
 - (C) Domestic sewage
 - (D) Deforestation
78. The safe limit of fluoride in drinking water prescribed by WHO is:
- (A) 0.5 mg/L
 - (B) 1.5 mg/L
 - (C) 3.0 mg/L
 - (D) 5.0 mg/L
79. Lead pollution primarily affects which system in humans?
- (A) Digestive system
 - (B) Nervous system
 - (C) Muscular system
 - (D) Circulatory system
80. The Ganga Action Plan (GAP) was launched in:
- (A) 1981
 - (B) 1985
 - (C) 1990
 - (D) 1995
81. Which parameter is NOT commonly used to measure water quality?
- (A) pH
 - (B) Dissolved Oxygen
 - (C) Biological Oxygen Demand
 - (D) Soil texture
82. Which Indian law deals specifically with the prevention and control of water pollution?
- (A) Water (Prevention and Control of Pollution) Act, 1974
 - (B) Environmental Protection Act, 1986
 - (C) Air Act, 1981
 - (D) Wildlife Protection Act, 1972
83. Acid rain is caused mainly by emissions of:
- (A) Ozone and methane
 - (B) Sulphur dioxide and nitrogen oxides
 - (C) Carbon monoxide and ozone
 - (D) Chlorofluorocarbons
84. Solid waste management does NOT include:
- (A) Collection
 - (B) Disposal
 - (C) Photosynthesis
 - (D) Recycling

85. Which chemical toxicant is commonly associated with Minamata disease?
- (A) Fluoride
(B) Mercury
(C) Lead
(D) Arsenic
86. The main aim of Wetland Conservation is to:
- (A) Increase deforestation
(B) Protect aquatic biodiversity
(C) Promote urbanization
(D) Remove oxygen from water
87. Which radiation type is most harmful to living tissues?
- (A) Radio waves
(B) Gamma rays
(C) Infrared rays
(D) Visible light
88. Photochemical smog is formed mainly due to the presence of:
- (A) Carbon monoxide
(B) Nitrogen oxides and hydrocarbons
(C) Methane
(D) Ammonia
89. Eutrophication of water bodies is caused by excessive:
- (A) Oxygen
(B) Nutrients (nitrates and phosphates)
(C) pH
(D) Sand particles
90. Which organization in India monitors environmental quality?
- (A) ISRO
(B) CPCB
(C) NABARD
(D) TRAI
91. The Black Cloud of Pollutant refers to:
- (A) Photochemical smog
(B) Dust storm
(C) Acid fog
(D) Volcanic ash
92. Marine pollution is mainly caused by:
- (A) Oil spills
(B) Road traffic
(C) Forest fires
(D) Mining

93. Which law provides the legal framework for protecting India's environment in general?
- (A) Environmental Protection Act, 1986
 - (B) Wildlife Protection Act, 1972
 - (C) Air Act, 1981
 - (D) Water Act, 1974
94. Bioindicators are useful for:
- (A) Measuring air and water quality
 - (B) Removing pollutants
 - (C) Producing oxygen
 - (D) Controlling floods
95. Radiation poisoning can result in:
- (A) Genetic mutations
 - (B) Increased oxygen levels
 - (C) Better immunity
 - (D) Soil fertility improvement
96. Which pollutant causes Blue Baby Syndrome?
- (A) Mercury
 - (B) Nitrates
 - (C) Lead
 - (D) Sulphur dioxide
97. The role of NGOs in environmental conservation includes:
- (A) Industrialization
 - (B) Awareness campaigns
 - (C) Air pollution generation
 - (D) Hunting
98. Noise levels beyond which human hearing can be damaged permanently:
- (A) 60 dB
 - (B) 85 dB
 - (C) 100 dB
 - (D) 40 dB
99. Which is NOT a source of thermal pollution?
- (A) Power plants
 - (B) Urban runoff
 - (C) Deforestation
 - (D) Industrial discharge
100. Man and Biosphere Programme (MAB) is coordinated by:
- (A) UNEP
 - (B) UNESCO
 - (C) WHO
 - (D) FAO

ROUGH WORK

Example :

Question :

Q.1 (A) ● (C) (D)

Q.2 (A) (B) ● (D)

Q.3 (A) ● (C) (D)

5. Each question carries equal marks. Marks will be awarded according to the number of correct answers you have.
6. All answers are to be given on OMR Answer Sheet only. Answers given anywhere other than the place specified in the answer sheet will not be considered valid.
7. Before writing anything on the OMR Answer Sheet, all the instructions given in it should be read carefully.
8. After the completion of the examination, candidates should leave the examination hall only after providing their OMR Answer Sheet to the invigilator. Candidate can carry their Question Booklet.
9. There will be no negative marking.
10. Rough work, if any, should be done on the blank pages provided for the purpose in the booklet.
11. To bring and use of log-book, calculator, pager & cellular phone in examination hall is prohibited.
12. In case of any difference found in English and Hindi version of the question, the English version of the question will be held authentic.

Impt. On opening the question booklet, first check that all the pages of the question booklet are printed properly. If there is any discrepancy in the question Booklet, then after showing it to the invigilator, get another question Booklet of the same series.

उदाहरण :

प्रश्न :

प्रश्न 1 (A) ● (C) (D)

प्रश्न 2 (A) (B) ● (D)

प्रश्न 3 (A) ● (C) (D)

5. प्रत्येक प्रश्न के अंक समान हैं। आपके जितने उत्तर सही होंगे, उन्हीं के अनुसार अंक प्रदान किये जायेंगे।
6. सभी उत्तर केवल ओ०एम०आर० उत्तर-पत्रक (OMR Answer Sheet) पर ही दिये जाने हैं। उत्तर-पत्रक में निर्धारित स्थान के अलावा अन्यत्र कहीं पर दिया गया उत्तर मान्य नहीं होगा।
7. ओ०एम०आर० उत्तर-पत्रक (OMR Answer Sheet) पर कुछ भी लिखने से पूर्व उसमें दिये गये सभी अनुदेशों को सावधानीपूर्वक पढ़ लिया जाये।
8. परीक्षा समाप्ति के उपरान्त परीक्षार्थी कक्ष निरीक्षक को अपनी OMR Answer Sheet उपलब्ध कराने के बाद ही परीक्षा कक्ष से प्रस्थान करें। परीक्षार्थी अपने साथ प्रश्न-पुस्तिका ले जा सकते हैं।
9. निगेटिव मार्किंग नहीं है।
10. कोई भी रफ कार्य, प्रश्न-पुस्तिका में, रफ-कार्य के लिए दिए खाली पेज पर ही किया जाना चाहिए।
11. परीक्षा-कक्ष में लॉग-बुक, कैल्कुलेटर, पेजर तथा सेल्युलर फोन ले जाना तथा उसका उपयोग करना वर्जित है।
12. प्रश्न के हिन्दी एवं अंग्रेजी रूपान्तरण में भिन्नता होने की दशा में प्रश्न का अंग्रेजी रूपान्तरण ही मान्य होगा।

महत्वपूर्ण: प्रश्नपुस्तिका खोलने पर प्रथमतः जाँच कर देख लें कि प्रश्नपुस्तिका के सभी पृष्ठ भलीभाँति छपे हुए हैं। यदि प्रश्नपुस्तिका में कोई कमी हो, तो कक्षनिरीक्षक को दिखाकर उसी सिरिज की दूसरी प्रश्नपुस्तिका प्राप्त कर लें।