

Roll. No.

Question Booklet Number

O.M.R. Serial No.

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

ZOOLOGY

(Environmental Biology)

Paper Code							
B	0	5	0	9	0	9	T

(Elective)

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. Who first proposed the term 'Ecology'?
 - (A) Chales Darwin
 - (B) Gregor Mendel
 - (C) Ernst Haeckel
 - (D) Carl Linnaeus
2. Which of the following is not a level of ecological study?
 - (A) Organism
 - (B) Population
 - (C) Community
 - (D) Molecule
3. What does the term 'Synecology' refer to ?
 - (A) Ecological studies at the species level
 - (B) Ecological studies at the community level
 - (C) The study of ecosystems
 - (D) The study of individual organisms
4. Which of the following is an example of an abiotic component in an ecosystem?
 - (A) Plants
 - (B) Animals
 - (C) Soil
 - (D) Microorganisms
5. What does 'autecology' focus on ?
 - (A) The study of ecosystems
 - (B) The study of individual species
 - (C) The study of communities
 - (D) The study of human impact on the environment
6. Which scientist defined ecology as "the study of structure and function of nature"?
 - (A) E.P. Odum
 - (B) R. Margalef
 - (C) Charles Darwin
 - (D) Gregor Mendel
7. Which of the following best describes the modern scope of ecology?
 - (A) A branch of biology focused solely on plants
 - (B) An interdisciplinary science linking biological, physical and social sciences
 - (C) The study of human behaviour
 - (D) A field limited to the study of animal behaviour
8. Which biome is characterized by the lowest average annual temperature?
 - (A) Tropical rain forest
 - (B) Desert
 - (C) Tundra
 - (D) Savanna

9. What is the main climatic factor that differentiates a tropical rainforest from a tropical Savanna?
 - (A) Temperature
 - (B) Soil Type
 - (C) Precipitation
 - (D) Altitude
10. Which biome is characterized by hot summers, cold winters and moderate precipitation?
 - (A) Tundra
 - (B) Temperate Deciduous Forest
 - (C) Tropical Rain Forest
 - (D) Taiga
11. Which biome have greatest temperature variation between day and night?
 - (A) Savanna
 - (B) Desert
 - (C) Mediterranean
 - (D) Tundra
12. Climatic factor primarily influences the formation of deserts is :
 - (A) High humidity
 - (B) Low temperature
 - (C) Low precipitation
 - (D) High altitude
13. Which process in plants is directly influenced by light?
 - (A) Respiration
 - (B) Photosynthesis
 - (C) Transpiration
 - (D) Germination
14. Which factor is not influenced by light in the climate system?
 - (A) Temperature
 - (B) Wind pattern
 - (C) Ocean currents
 - (D) Soil composition
15. What is the effect of light on the distribution of biomes ?
 - (A) Light has no effect
 - (B) Light determines biome locations
 - (C) Light only affects aquatic biomes
 - (D) Light only affects desert biomes
16. How does light affect the behaviour of animals?
 - (A) It has not effect
 - (B) It influences migration patterns
 - (C) It only affects nocturnal animals
 - (D) None of the above

17. In a climate diagram, what does the Y-axis usually represent ?
- (A) Time
(B) Temperature and precipitation
(C) Latitude
(D) Altitude
18. Which colour is typically used to represent temperature in a climate diagram?
- (A) Blue
(B) Red
(C) Green
(D) Yellow
19. In which units is precipitation usually measured in climate diagrams?
- (A) Inches
(B) Millimeters
(C) Centimeters
(D) Meters
20. Adaptation helps a chameleon blend in with its surroundings is :
- (A) Sharp claws
(B) Long neck
(C) Colour changing ability
(D) Powerful jaws
21. Which adaptation helps penguins stay warm in cold environment?
- (A) Long legs
(B) Sharp claws
(C) Colour changing
(D) Thick blubber
22. Which adaptation helps dolphins communicate and navigate under water?
- (A) Thick blubber
(B) Long feet
(C) Ecolocation
(D) Sharp claws
23. Using the language of a financial statement, the 'income' of Earth's water budget is :
- (A) Precipitation
(B) Evaporation
(C) Condensation
(D) Runoff
24. What does a water budget calculate ?
- (A) The amount of water used by human population in a year
(B) The change in available water due to natural system
(C) The appropriate cost of water for a municipality
(D) The amount of money a state spent on water per year

25. The primary goal of water conservation is :
- (A) To reduce water bills
 - (B) To ensure availability of water for future generation
 - (C) To increase water usage
 - (D) To build more dam
26. Which irrigation method is most efficient for water conservation?
- (A) Drip irrigation
 - (B) Flood irrigation
 - (C) Sprinkler irrigation
 - (D) Surface irrigation
27. The Thar Desert is part of which biogeographic zone?
- (A) Semi-arid
 - (B) Deccan Peninsula
 - (C) Desert
 - (D) Gangetic plain
28. Which biographic zone includes the states of Gujrat and Rajasthan?
- (A) Western Ghat
 - (B) Islands
 - (C) Deccan Peninsula
 - (D) Semi-arid
29. Which factor is not considered in the theory of Island Biogeography?
- (A) Island size
 - (B) Distance from main land
 - (C) Climate change
 - (D) Immigration rate
30. Concept illustrated by the theory of Island Biogeography is :
- (A) Natural Selection
 - (B) Dynamic Equilibrium
 - (C) Genetic Drift
 - (D) Symbiosis
31. Which of the following is an abiotic factor?
- (A) Plants
 - (B) Animals
 - (C) Temperature
 - (D) Fungi
32. Abiotic factor can influence the distribution of terrestrial animals is :
- (A) Water availability
 - (B) Soil type
 - (C) Wind speed
 - (D) Light intensity
33. Animal can tolerate a wide range of salinity levels is :
- (A) Gold fish
 - (B) Salmon
 - (C) Frog
 - (D) Catfish

34. What is the pH of a neutral solution ?
- (A) 0
(B) 7
(C) 14
(D) 1
35. Biotic limiting factor is :
- (A) Temperature
(B) Water availability
(C) Soil composition
(D) Predation
36. Which of the following is an example of a density-dependent limiting factor?
- (A) Disease
(B) Natural disasters
(C) Climate
(D) Pollution
37. Which of the following statements is true about limiting factors?
- (A) They only affect abiotic components of an ecosystem
(B) They can be both biotic and abiotic
(C) They always increase the population size
(D) They are not influenced by population density
38. Which of the following is not considered a major ecosystem of the world?
- (A) Fresh water Ecosystem
(B) Grassland Ecosystem
(C) Marine Ecosystem
(D) Urban Ecosystem
39. The Taiga ecosystem is also known as :
- (A) Boreal Forest
(B) Triopical Rainfall
(C) Desert
(D) Grassland
40. Which type of zonation is observed in a forest ecosystem where different plant species occupy different heights?
- (A) Horizontal Zonation
(B) Vertical Zonation
(C) Temporal Zonation
(D) Spatial Zonation
41. Zone of a lake have highest concentration of oxygen is :
- (A) Littoral zone
(B) Profundal zone
(C) Benthic zone
(D) Limnetic zone

42. Primary producer in aquatic ecosystems are:
- (A) Zooplanktons
 - (B) Phytoplanktons
 - (C) Nekton
 - (D) Benthos
43. Which group of organisms includes fish and marine mammals that can swim actively in water?
- (A) Plankton
 - (B) Benthos
 - (C) Nekton
 - (D) Phytoplanktons
44. What type of organism is a zooplankton?
- (A) A primary producer
 - (B) A primary consumer
 - (C) A decomposer
 - (D) A predator
45. Which of the following animals is commonly found in the Savanna biome?
- (A) Penguins
 - (B) Giraffes
 - (C) Polar bears
 - (D) Kangaroos
46. Which of the following animals is typically found in the tropical rainforest biome?
- (A) Arctic fox
 - (B) Kangaroo
 - (C) Sloth
 - (D) Reindeer
47. What is the primary source of energy for most ecosystems on earth?
- (A) Water
 - (B) Sun
 - (C) Plants
 - (D) Animals
48. In an energy pyramid, which level contains the most energy?
- (A) Primary producers
 - (B) Primary consumers
 - (C) Secondary consumers
 - (D) Tertiary consumers
49. Best described flow of energy in an ecosystems :
- (A) Multidirectional
 - (B) Bidirectional
 - (C) Unidirectional
 - (D) Cyclical
50. Which of the following organisms is a primary consumer?
- (A) Grass
 - (B) Rabbit
 - (C) Wolf
 - (D) Mushroom

51. What happens to the energy that is not transferred to the next trophic level?
- (A) It is destroyed
(B) It is stored in the organisms
(C) It is lost as heat
(D) None of the above
52. Which of the following correctly described the flow of energy in food chain ?
- (A) Grass→Cow→ Human
(B) Caterpillar→Leaf→Human
(C) Cow→Grass→Human
(D) Leaf→Bird→Caterpillar
53. A diagram that shows the transfer of energy in one line is called :
- (A) Food web
(B) Food chain
(C) Food line
(D) Food court
54. An organism that gets energy from eating dead organisms or waste is called as :
- (A) Producer
(B) Herbivore
(C) Decomposer
(D) Carnivore
55. In a food web, which one is a primary consumer?
- (A) Lion
(B) Rabbit
(C) Eagle
(D) Snake
56. Which of the following organisms is at the top of the food web?
- (A) Grass
(B) Deer
(C) Wolf
(D) Rabbit
57. The key process in nitrogen cycle is :
- (A) Photosynthesis
(B) Nitrogen fixation
(C) Respiration
(D) Transpiration
58. In the nutrient cycle, what is the process of converting ammonia in to nitrites and nitrates called :
- (A) Nitrogen fixation
(B) Nitrification
(C) Denitrification
(D) Ammonification
59. Which of the following is not a component of the phosphorus cycle?
- (A) Weathering of rocks
(B) Absorption by plants
(C) Atmospheric fixation
(D) Decomposition of organic matter

60. What is the term for the amount of nutrients present in the soil at any given time?
- (A) Standing state
 - (B) Moving state
 - (C) Total state
 - (D) Nutrient food
61. A population is a group of :
- (A) Individual in a species
 - (B) Species in a community
 - (C) Communities in an ecosystem
 - (D) Individuals in a family
62. Most important factor for the success of an animal population?
- (A) Natality
 - (B) Adaptability
 - (C) Unlimited food
 - (D) Interspecies activity
63. Human population growth curve is a :
- (A) S-shaped curve
 - (B) Parabola curve
 - (C) J-shaped curve
 - (D) Zig Zag curve
64. When a human population is small, there is a greater chance of :
- (A) Genetic drift
 - (B) Gene flow
 - (C) Natural selection
 - (D) Mutation
65. Growth model is characterized by a rapid increase in population followed by a plateau is :
- (A) Exponential growth
 - (B) Logistic growth
 - (C) Linear growth
 - (D) Cyclical growth
66. What is the term for the number of individuals per unit area or volume?
- (A) Population size
 - (B) Population density
 - (C) Population distribution
 - (D) Population growth rate
67. Term for the number of births per 1000 individuals per year?
- (A) Birth rate
 - (B) Death rate
 - (C) Growth rate
 - (D) Fertility rate
68. What type of life table follows a cohort of individuals from birth to death?
- (A) Static life table
 - (B) Dynamic life table
 - (C) Period life table
 - (D) Stationary life table

69. Which of the following is a density-dependent factor affecting population growth?
- (A) Natural disasters
 - (B) Disease
 - (C) Climate
 - (D) Habitat destruction
70. Density-dependent factor that can limit population growth?
- (A) Earthquakes
 - (B) Hurricanes
 - (C) Competition for food
 - (D) Extremes temperature
71. Characteristics of 'r' strategists are :
- (A) Long life span
 - (B) High reproductive rate
 - (C) Low offspring survival rate
 - (D) Both (B) and (C)
72. Example of a 'K' strategist is :
- (A) Mouse
 - (B) Oak tree
 - (C) Frog
 - (D) Rabbit
73. Which of the following concept is central to environment ethics?
- (A) Anthropocentrism
 - (B) Biocentrism
 - (C) Ecocentrism
 - (D) All of the above
74. Secondary air pollutant is :
- (A) Carbonmonoxide
 - (B) Sulphur dioxide
 - (C) Ozone
 - (D) Lead
75. The leaders of Appiko movement was :
- (A) Panduranga Hegde
 - (B) Mahatma Gandhi
 - (C) Sundar Lal Bahuguna
 - (D) None of these
76. Which international agreement aim to reduce green house gas emission ?
- (A) Montreal Protocol
 - (B) Kyoto Protocol
 - (C) Basel Convention
 - (D) Stockholm convention

77. Which movement is considered one of the first environmental movement in India?
- (A) Narmada Bachao Andolan
 - (B) Chipko Movement
 - (C) Silent Valley Movement
 - (D) Appiko Movement
78. The main aim of the Appiko movement is :
- (A) To protect forest in the Western Ghats
 - (B) To clean the Ganges River
 - (C) To reduce air pollution in cities
 - (D) To promote renewable energy
79. How can cultural practices impact environmental conservation ?
- (A) By promoting unsustainable practices
 - (B) By fostering a deep connection to nature and sustainable practices
 - (C) By reducing biodiversity
 - (D) By increasing Pollution levels
80. The paper and pulp manufacture releases which of the following air pollutants?
- (A) Nitrogen dioxide
 - (B) Fumes
 - (C) Hydrogen sulphide
 - (D) Carbon monoxide
81. Main cause of acid rain is :
- (A) Carbon dioxides
 - (B) Methane
 - (C) Sulphur dioxide and Nitrogen oxides
 - (D) Ozone
82. What is Biodiversity?
- (A) The variety of the form on earth
 - (B) The study of Ecosystem
 - (C) The process of photosynthesis
 - (D) The classification of organism
83. Example of ex-situ conservation is :
- (A) National Park
 - (B) Wild life Sanctuaries
 - (C) Botanical gardens
 - (D) Biosphere reserves
84. The well known biodiversity hotspot in India is :
- (A) Thar desert
 - (B) Western Ghats
 - (C) Deccan Plateau
 - (D) Indo-Gangtic Plains

85. Which of the following regions is not considered a biodiversity hotspot?
- (A) Amazon Rainforest
 - (B) Himalayas
 - (C) Sahara desert
 - (D) Coral Triangle
86. Which of the following actions can help protect biodiversity hotspots?
- (A) Deforestation
 - (B) Urbanization
 - (C) Establishing protected areas
 - (D) Industrialization
87. Which conservation strategy involves protecting species in their natural habitat?
- (A) Ex-situ conservations
 - (B) In-situ conservations
 - (C) Genetic engineering
 - (D) Habitat fragmentation
88. What is the primary benefits of conserving Biodiversity?
- (A) Increased urban development
 - (B) Enhanced ecosystem services
 - (C) Higher pollution levels
 - (D) Reduced genetic diversity
89. Which of the following is a challenges in implementing conservation strategies?
- (A) Lack of scientific research
 - (B) Over abundance of natural resources
 - (C) Conflicts between conservation goals and economic development
 - (D) Excessive public support
90. What is the role of International Agreements in Biodiversity Conservation ?
- (A) To promote habitat destruction
 - (B) To facilitate global cooperation and funding for conservation efforts
 - (C) To reduce the number of protected area
 - (D) To increase the explanation of natural resources
91. In which state in the silent valley located?
- (A) Tamil Nadu
 - (B) Karnataka
 - (C) Kerala
 - (D) Andhra Pradesh
92. Which river flows through the salient valley?
- (A) Ganga
 - (B) Yamuna
 - (C) Kuntipuzha
 - (D) Godavari

93. Who was the prominent leader of the Narmada Bachao Andolan?
- (A) Medha Patkar
(B) Arundhati Roy
(C) Sundarlal Bahuguna
(D) Vandana Shiva
94. Which river was the focus of the Tehri Dham Protests?
- (A) Ganga
(B) Yamuna
(C) Namada
(D) Godavari
95. Which microorganisms are primarily responsible for Nitrogen fixation ?
- (A) Nitrosomonas
(B) Rhizobium
(C) Nitrobacter
(D) Clostridium
96. Primary source of carbon for plants in the carbon cycle:
- (A) Soil
(B) Water
(C) Atmospheric CO₂
(D) Fossil fuels
97. Major Carbon sink is :
- (A) Oceans
(B) Volcanoes
(C) Fossil fuels
(D) Factories
98. Carbon is transformed from the atmosphere to the ocean is called :
- (A) Carbon sequestration
(B) Carbon fixation
(C) Carbonation
(D) Carbon cycling
99. Which tree species was control to the Bishnoi Movement?
- (A) Banyan
(B) Neem
(C) Khejri
(D) Peepal
100. In which state did the Bishnoi Movement take place?
- (A) Gujrat
(B) Punjab
(C) Haryana
(D) Rajasthan

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।