

M.Sc. ZOOLOGY  
SECOND SEMESTER [SPECIAL REPEAT]  
ECOLOGY & ANIMAL BEHAVIOUR  
MSZ-201  
[USE OMR SHEET FOR OBJECTIVE PART]

**SET  
A**

Duration: 3 hrs.

Full Marks: 70

Time: 30 mins.

Marks: 20

**(Objective)**

Choose the correct answer from the following:

1 × 20 = 20

- Which of the following age pyramid can be used to describe an exponentially growing population?
  - Broad based
  - Bell shaped
  - Inverted
  - Urn shaped
- An S-shaped population growth pattern can be represented by which of the following pyramids?
  - Broad based
  - Bell shaped
  - Inverted
  - Urn shaped
- A highly convex curve in survivorship can be represented by which animal?
  - Elephant
  - Fish
  - Oyster
  - Butterfly
- A tectonic lake is an example of which of the following types of succession?
  - Allogenic
  - Secondary
  - Climatic
  - Retrogressive
- The terminal final community in the process of ecological succession is known as:
  - Environmental complex
  - Serel community
  - Climax community
  - Developmental community
- Which among these is not a criterion for instincts in animal behaviour?
  - Unlearned
  - Adaptive
  - Characteristic of species
  - None of these
- Learning behaviour should not result from:
  - Fatigue
  - Behaviour change
  - Parents
  - All of these
- Which among these is not a characteristic of the community?
  - Species association
  - Recessive behaviour
  - Biotic stability
  - Abundance of any species
- Which among these is a false statement for character displacement?
  - Structures communities
  - Brings down population for competition
  - Generates phenotypic diversity
  - None of these
- Who among these people was not involved in Optimal Foraging Theory?
  - Robert MacArthur
  - Eric Pianka
  - Niko Tinbergen
  - JME Nilen

11. World's total land area is:
  - a. 113,076 million hectares
  - b. 33,076 million hectares
  - c. 13,076 million hectares
  - d. None of these
12. Which of the following factors influence the primary productivity?
  - a. Nutrients
  - b. Climate
  - c. Both a & b
  - d. None of these
13. The flow of energy in an ecosystem is:
  - a. One way
  - b. Reverse way
  - c. Both a & b
  - d. None of these
14. The Grazing food chain starts with:
  - a. Omnivores
  - b. Herbivores
  - c. Carnivores
  - d. None of these
15. Gross primary productivity and Net primary productivity can be related as:
  - a.  $GPP = NPP + R$
  - b.  $GPP = NPP - R$
  - c.  $NPP = GPP + R$
  - d. None of these
16. Which of the animal undergoes the longest migrations?
  - a. Arctic tern
  - b. Sardine shoals
  - c. Zebra
  - d. None of these
17. The honey bees and social insects are clearest examples of:
  - a. Altruism
  - b. Kin selection
  - c. Courtship
  - d. None of these
18. Territorial behaviour is costly in:
  - a. Energy
  - b. Predation
  - c. Competition
  - d. All of these
19. An aggregation of males that are each seeking to attract a mate are called:
  - a. Harems
  - b. Leks
  - c. Dens
  - d. None of these
20. Polygyny is a strategy used by males to increase their:
  - a. Physical fitness
  - b. For reproductive success
  - c. For healthy offspring
  - d. All of the above

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**( Descriptive )**

Time : 2 hr. 30 mins.

Marks : 50

[ Answer question no.1 & any four (4) from the rest ]

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| 1. Write an account of kin selection, altruism, migration and territoriality behavior in animals.  | 10       |
| 2. What is ecological succession? Why did Odum preferred to call this process as Ecosystem development?  | 2+8=10   |
| 3. Write a descriptive note on the various prospects and details of competition theory.  | 10       |
| 4. What is Optimal Foraging Theory? Mention in detail about the theory with few examples and quantitative predictions.   | 3+7=10   |
| 5. What is energy flow? Enumerate the different principles of energy flow in an ecosystem. Brief details about the different models of energy flow in the ecosystem. | 2+8=10   |
| 6. Define population. Write the different types of age distribution in a population with the examples of pyramids.   | 3+7=10   |
| 7. What is courtship? How do animals demonstrate courtship behavior? Give examples.  | 10       |
| 8. Write short notes:  | 2.5×4=10 |
| a) Food chain  |          |
| b) Food web  |          |
| c) Desert ecosystem  |          |
| d) Forest ecosystem  |          |

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