

# ZOOLOGY Paper-I

## [Biodiversity & Ecology-I (ZOO-201)]

Time : 3 Hours

Max. Marks : 36

Note : In all five questions are to be attempted. Question No. 1 is compulsory.  
Attempt any one question from each Unit.

1. Write briefly :

- (a) Hepatopancreas
- (b) Spiracles
- (c) Economic importance of lobster
- (d) Classification of *polister*
- (e) Y-shaped energy flow model
- (f) Thermal stratification
- (g) Dispersion
- (h) Pyramid of biomass

8×1=8

### Unit-I

- 2. (a) Give an account of digestive system of *Periplaneta Americana*. 4
- (b) Write a note on social organization in termites. 3
- 3. Give classification up to orders and write brief ecological notes on the following :
  - (a) *Lepisma* 2
  - (b) *Forficula* 2
  - (c) *Bombyx* 3

### Unit-II

- 4. (a) Give an account of the structure and functioning of compound eye of Prawn. 5
- (b) Draw different stages in life cycle of *Culex*. 2
- 5. Give classification upto orders and write brief ecological note and economic importance of the following :
  - (a) King crab 3
  - (b) *Lepas* 2
  - (c) *Sacculina* 2

### Unit-III

- 6. (a) What is soil profile ? Describe briefly the factors that affect soil formation. 4
- (b) What is food web? Explain with a suitable example. 3

7. Define Ecosystem. What are its components? Discuss about freshwater ecosystem of the world. 39

**Unit-IV**

8. (a) Discuss in detail the Nitrogen cycle. 7  
(b) What are different ways to regulate population? 4
9. (a) Give morphological and physiological adaptations of animals who live in terrestrial habitat. 3  
(b) Briefly explain the concept of limiting factor. 5

**ZOOLOGY Paper-II**

**[Biodiversity & Ecology-II (ZOO-202)]**

Time : 3 Hours

Max. Marks : 36

Note: Attempt five questions in all. Question No. 1 is compulsory and for the rest, select one question from each Unit.

1. Write briefly on the following :

- (a) Competitive exclusion principle  
(b) Ammensalism  
(c) Climax communities  
(d) Biomagnification  
(e) Global warming  
(f) Ospharidium  
(g) Pedicellariae  
(h) Proboscis of *Balanoglossus*

8×1=8

**Unit-I**

2. With the help of a labelled diagram, give an account of nervous system of *Pila*. 7

3. (a) Classify upto order and write an ecological note of the the following:

- (i) *Nautilus*  
(ii) *Sepia*  
(iii) *Octopus*  
(iv) *Chiton*

- (b) Draw a labelled diagram of alimentary canal of *Pila*. 4,3

**Unit-II**

4. (a) Give an account of external characters of *Balanoglossus*. 4,3

- (b) Draw a labelled diagram of water vascular system of *Asterias*. 7

5. Describe different types of larvae found in echinoderms. 7

**Unit-III**

6. How does mutualism differ from commensalism? Giving suitable examples, describe mutualism. 7

7. What is ecological niche? Give an account of hypervolume niche. 7