

ZOOLOGY

PAPER—I

Time Allowed : Three Hours

Maximum Marks : 200

**QUESTION PAPER SPECIFIC INSTRUCTIONS**

**Please read each of the following instructions carefully  
before attempting questions**

There are EIGHT questions in all, out of which FIVE are to be attempted.

Question Nos. 1 and 5 are compulsory. Out of the remaining SIX questions, THREE are to be attempted selecting at least ONE question from each of the two Sections A and B.

All questions carry equal marks. The number of marks carried by a question/part is indicated against it.

Neat sketches may be drawn, wherever required.

Attempts of questions shall be counted in sequential order. Unless struck off, attempt of a question shall be counted even if attempted partly. Any page or portion of the page left blank in the Question-cum-Answer Booklet must be clearly struck off.

Answers must be written in ENGLISH only.

### SECTION—A

1. Write a brief account on each of the following : 8×5=40
- (a) Salient features of Rotifera with suitable examples
  - (b) Parasitic adaptations of *Fasciola*
  - (c) Feeding mechanisms of Mollusca
  - (d) Skull types of Squamata
  - (e) Air-breathing fishes
2. (a) What are Great Barrier Reefs? Describe how climate change influences coral reef formation. 15
- (b) Write an account on recent system of animal classification. Outline its differences from earlier empirical approach(es). 15
- (c) Describe the life cycle of *Nereis*. 10
3. (a) Write an account on modification of mouthparts in Insecta. Give suitable examples and diagrams. 15
- (b) Discuss that *Sphenodon* is the most primitive and Crocodile is the most advanced of all living reptilians. 15
- (c) Polychaetes exhibit different modes of life adapted to different habitats. Elaborate. 10
4. (a) Enumerate the functions and main components of endoskeleton of vertebrates. Give an account on the types of jaw suspensoria with suitable diagrams. 15
- (b) Describe the structural organization of thyroid and parathyroid glands in different vertebrate groups with a note on the hormone-producing cells and hormones. 15
- (c) *Herdmania* is a primitive and degenerate descendant of ancestral chordates. Discuss. 10

### SECTION—B

5. Differentiate between the following : 8×5=40
- (a) Biomes and Ecotones
  - (b) Ecto- and Endo-parasites of cattle
  - (c) *Pyrilla* and *Achaea* pests
  - (d) Spectrophotometry and Flame photometry
  - (e) Polyculture and Integrated fish farming

6. (a) What is ecological succession? Explain the causes and theories of ecological succession. 15
- (b) Define apiculture. Explain the methodology, status and scope of apiculture in India. 15
- (c) Describe the principle and application of ANOVA. 10
7. (a) With suitable examples, explain different methods of studying animal behaviour. 15
- (b) Primates exhibit a system of social hierarchy. Explain it in the context of territoriality and dominance. 15
- (c) Write about the pathogenicity of cholera with a note on control measures. 10
8. (a) Explain the importance of fisheries in India. Write about the conservation strategies of finfish and shellfish. 15
- (b) Describe the role of hormones in prey-predator detection and predator tactics. 15
- (c) Define population. Explain the characteristics of a population. 10

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