

## 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.*

*Questions no. 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.*

*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.*

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

*Answers must be written in **ENGLISH** only.*

*Neat sketches may be drawn, wherever required.*

## SECTION A

**Q1. Answer the following questions :**

**8×5=40**

- (a) Write in brief about the method(s) of ingestion, digestion of food and excretion of wastes in *Paramecium*. 8
- (b) Define body symmetry. Give its types with examples. 8
- (c) Elaborate on the structural organization of compound eye in prawn. 8
- (d) Elucidate the structural diversity of shells in molluscs. Also, write their functions. 8
- (e) Briefly describe types of dermal scales and their structures in fishes. 8
- Q2.** (a) Describe the structure of human internal ear. Also, explain the mechanism of hearing and balancing. 15
- (b) How is Ascariasis caused ? Describe the mode of transmission and life history of *Ascaris*. Give the harmful effects of Ascariasis and its control measures. 15
- (c) Explain the structure and mechanism of action of nematocysts in the defense mechanism of coelenterates. 10
- Q3.** (a) Explain the structure of respiratory organs and write the mechanism of terrestrial and aquatic respiration in arthropods. 15
- (b) Enlist the distinctive features of various subclasses of Reptilia. Also, write the differentiating characters of poisonous and non-poisonous snakes. 15
- (c) Highlight various characteristics of egg-laying mammals, pouched mammals and aquatic mammals. 10
- Q4.** (a) Describe in detail about the structural organization of mammalian pituitary gland with emphasis on its hormones and their functions. 15
- (b) Enumerate the general features and parasitic adaptations of *Fasciola*. 15
- (c) Giving suitable examples and diagrams, describe the phenomenon of parental care in Apoda, Anura and Caudata. 10

## SECTION B

- Q5. Answer the following questions :** **8×5=40**
- (a) What is greenhouse effect ? How does it influence our environment ? 8
  - (b) Explain the principle, working and applications of Geiger – Muller counter. 8
  - (c) Differentiate between population dispersal and population dispersion. 8
  - (d) Explain the various methods of lac cultivation. 8
  - (e) What are biological rhythms ? Explain the various types of biological rhythms, citing examples. 8
- Q6.**
- (a) Explain the biological and non-biological modes of nitrogen fixation. Also, draw the nitrogen cycle. 15
  - (b) Enlist the various species suitable for prawn culture. Also, describe methods of its seed production and culture techniques. 15
  - (c) What is correlation ? Give its types. Briefly explain the various methods of calculation of correlation between X and Y variables. 10
- Q7.**
- (a) Differentiate between primary and secondary pollutants. Describe different sources as well as management methods of gaseous pollutants. 15
  - (b) Citing examples, explain the different types of social groupings in primates. Also, mention the advantages of group living. 15
  - (c) Describe the life history and pathogenicity of *Pyrilla perpusilla*. Add a note on its preventive measures. 10
- Q8.**
- (a) What is meant by AIDS ? How is it transmitted ? Comment on the pathology of HIV infection and its preventive measures. Add a note on its present status in India. 15
  - (b) Write the principle, working and applications of TEM. 15
  - (c) Differentiate between primary and secondary succession. Explain the various steps involved in primary community succession. 10

