

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

