

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.

Neat sketches may be drawn, wherever required.

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

SECTION A

Q1. Write a brief account on each of the following : 8×5=40

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|-----|--|---|
| (a) | Role of fins in fish locomotion | 8 |
| (b) | Structure and mechanism of action of cnidoblasts | 8 |
| (c) | General features of egg-laying mammals and pouched mammals | 8 |
| (d) | Affinities of <i>Balanoglossus</i> | 8 |
| (e) | Structure of internal ear in mammals | 8 |

- Q2.** (a) Classify phylum Mollusca up to class level and mention characteristic features of each class with relevant examples. 15
- (b) Draw a labelled transverse section of pancreas and comment on the role of various pancreatic hormones. 15
- (c) Describe the structure and role of book-lungs in scorpions. 10
- Q3.** (a) With the help of a labelled diagram, describe the life history of *Leishmania*. 15
- (b) Discuss the concept of metamerism in annelids with relevant examples. 15
- (c) Explain the functions of mammalian integument. 10
- Q4.** (a) Describe the structural peculiarities of larval forms in Echinoderms. 15
- (b) Give an account of the various skeletal structures in sponges. 15
- (c) "Birds are called glorified reptiles." Comment. 10

SECTION B

- Q5.** Write a brief account on each of the following : 8×5=40
- (a) Role of mosquitoes as vectors of human diseases 8
 - (b) Pearl culture in freshwater 8
 - (c) Principle and applications of spectrophotometry 8
 - (d) Acid rain and its impact on biosphere 8
 - (e) Habituation behaviour in animals 8
- Q6.**
- (a) Give an account of gastro-intestinal nematodes of cattle and briefly discuss their pathogenicity. 15
 - (b) Explain various measures implemented by the government to manage vehicular pollution in India. 15
 - (c) Discuss different sign stimuli used by animals and comment on their adaptive significance. 10
- Q7.**
- (a) Describe the principle, working and applications of Scanning Electron Microscopy. 15
 - (b) What is meant by communicable diseases ? Describe the pathogenicity, clinical manifestation and prevention of cholera. 15
 - (c) What is meant by global warming ? How is it impacting the environment in the context of greenhouse gases ? 10
- Q8.**
- (a) List various population characteristics. Explain J-shaped and S-shaped growth forms with suitable examples. 15
 - (b) Giving suitable examples, explain the concept of homing in animals. 15
 - (c) Explain null hypothesis and its application in Biology. 10

