

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) Statocysts of Medusa | 8 |
| (b) Erythrocytic Schizogony | 8 |
| (c) Canal System in Sponges | 8 |
| (d) Origin of Tetrapods | 8 |
| (e) Flight adaptations in Birds | 8 |

- Q2.** (a) Define conjugation. Diagrammatically explain the mechanism of conjugation in Paramecium. 15
- (b) What is metagenesis ? Explain metagenesis with reference to the life cycle of Obelia. 15
- (c) Give an illustrated account of life history of Branchiostoma. 10
- Q3.** (a) Explain the structural organisation of adrenal gland in mammals. Describe its hormones and their functions. 15
- (b) Define metamorphosis. Explain the hormonal control of metamorphosis in insects. 15
- (c) Describe the structure and phylogenetic significance of Trochophore larva. 10
- Q4.** (a) What are coral reefs ? Describe the formation and types of coral reefs found all over the world. 15
- (b) Describe the structure of human eye. Explain the mechanism of vision in humans. 15
- (c) Describe the water vascular system of Asterias. 10

SECTION B

- Q5. Write a brief account on each of the following :** **8×5=40**
- (a) Biological clock and its significance 8
 - (b) Small pox — causes and pathogenicity 8
 - (c) Ecotones and edge effect 8
 - (d) Courtship behaviour in birds 8
 - (e) “Forests are an important natural resource.” Comment. 8
- Q6.**
- (a) Describe the phenomenon of learning, instinct and imprinting in animals, with suitable examples. 15
 - (b) What is Sericulture ? Describe its methods and significance. Also add a note on silkworm diseases. 15
 - (c) Differentiate between SEM and TEM. 10
- Q7.**
- (a) What is Pollution ? Explain the sources, impacts and preventive measures of noise pollution. 15
 - (b) Name the causative organism and vector of plague. Explain its pathogenesis and its control measures. 15
 - (c) Discuss the role of ticks and mites in cattle and livestock diseases. 10
- Q8.**
- (a) What is Integrated Pest Management ? Describe the different strategies of integrated pest management employed in agriculture. 15
 - (b) Describe the principle, working and applications of Scintillation counter. 15
 - (c) Describe null hypothesis in context to chi-square analysis. 10

