

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. Write a brief account of the following :** **8×5=40**
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| (a) | Phenomenon of polymorphism with reference to Coelenterates | 8 |
| (b) | Functional morphology of pancreas in mammals | 8 |
| (c) | Catadromous migration among fishes | 8 |
| (d) | Structure of scolex in <i>Taenia solium</i> | 8 |
| (e) | Types of feathers in birds | 8 |

- Q2.** (a) What is Retrogressive Metamorphosis ? Discuss briefly with reference to life history of Ascidians. 10
- (b) Compare the functional anatomy of the brain in *Calotes*, *Columba* and *Oryctolagus*. 15
- (c) Write an essay on dentition in mammals. 15
- Q3.** (a) What is Torsion ? Describe the significance of torsion and detorsion in Gastropods. 10
- (b) Write an essay on modes of reproduction in Protozoa. 15
- (c) Describe the larval forms in Echinodermata. Add a note on their evolutionary significance. 15
- Q4.** (a) Describe the biting and chewing, siphoning and piercing and sucking mouth parts in insects with suitable examples. 15
- (b) Describe in detail, the life cycle and pathogenicity of *Leishmania donovani*. 15
- (c) Write an account of the canal system in sponges. 10

SECTION B

- Q5. Differentiate between the following :** **8×5=40**
- (a) Bioremediation and Biomagnification 8
 - (b) Correlation and Regression 8
 - (c) Biological Clock and Biological Rhythm 8
 - (d) SEM and TEM 8
 - (e) Infectious and Communicable Diseases 8
- Q6.**
- (a) "A population is a self-regulating system." Justify. 15
 - (b) What is Learning Behaviour ? Explain the terms Imprinting, Conditional behaviour and Habituation with suitable examples. 15
 - (c) Write an essay on Pearl culture in India. Is it an investment avenue ? Comment. 10
- Q7.**
- (a) What is Pollution ? Describe water pollution, its sources and effect on human health. 15
 - (b) What is the causative agent of Tuberculosis ? Describe the characteristics, pathogenicity and public health significance. 15
 - (c) What are Natural Resources ? Mention any two and discuss the conservation strategies undertaken. 10
- Q8.**
- (a) What are Mean, Median and Mode ? Explain the relationship between these three measures of central tendency. 15
 - (b) What is Scintillation Counting ? Explain the principle and its use in biology. 15
 - (c) What are the possible consequences of ozone layer depletion ? 10