

ZOOLOGY

PAPER—I

(CONVENTIONAL)

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.

Question Nos. 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 chronological 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

1. Write a brief note on each of the following : 8×5=40
- (a) Dentition in mammals 8
 - (b) Branchiostoma 8
 - (c) Parasitic adaptation in *Taenia* 8
 - (d) Air sacs in pigeon 8
 - (e) Nutrition in Protozoa 8
2. (a) Give an account of various types of canal systems. 15
- (b) What is metagenesis? Describe the structure and life history of *Obelia*. 15
- (c) Draw neat labelled diagrams of any four larval forms of Crustacea. (Description not required) 10
3. (a) Describe the phenomenon of metamorphosis with reference to insects, and add a note on its hormonal regulation. 15
- (b) Give an illustrated account of comparative anatomy of vertebrate urinogenital system. 15
- (c) Describe the shell diversity encountered in molluscs. 10
4. (a) Discuss the role of reproductive endocrines in life of vertebrates, and add a note on regulation of such glands. 20
- (b) Illustrate comparative functional anatomy of heart with reference to reptiles, birds and mammals. 20

SECTION—B

5. Write a brief note on each of the following : 8×5=40
- (a) Social behaviour in Primates 8
 - (b) Project Tiger 8
 - (c) Pearl culture 8
 - (d) SEM 8
 - (e) Null hypothesis 8
6. (a) Describe the propagation of lac insects through various cultivation practices, adding a note on lac extraction and uses of this product. 20
- (b) Discuss the importance of IPM in sustainable agricultural production. 20

7. (a) Give an account of the damage caused to farm animals by arthropod pests, and add a note on their control. 20
(b) Elaborate on how circadian rhythms govern the life of animals. 20
8. (a) Describe the principle, working and application of transmission electron microscope. 20
(b) Give an account of regression analysis emphasizing its salient features. 20

Examrace