

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.

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 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

1. Write notes on the following : 8×5=40
- (a) Significances of conjugation in *Paramecium*
 - (b) Adaptive diversity in polychaetes based on habitat
 - (c) Effects of torsion in gastropods and its significance
 - (d) Air sacs in pigeon and their functions
 - (e) Adaptations of aquatic mammals
2. (a) "Evolution of metazoan is the differentiation of cells to perform different functions." Justify this in relation to the cellular organization of hydrozoans. 15
- (b) Discuss the affinities of Onychophora and suggest a suitable place for this in the animal kingdom. 15
- (c) Explain how the structure and life history of *Fasciola hepatica* are suitable for parasitic mode of life. 10
3. (a) Discuss the significance of echinoderm larvae. 15
- (b) Describe the adaptive devices of tropical freshwater fishes to live in marshes and swamps. 15
- (c) Describe the types of skull in Reptilia with neat labelled sketch. 10
4. (a) Describe the functions of ovarian hormones. 10
- (b) Compare the aortic arches of reptiles with birds with neat sketch. 15
- (c) Describe different types of jaw suspension in vertebrates with neat sketch. 15

SECTION—B

5. Write notes on the following : 8×5=40
- (a) Ecological effects of pollution
 - (b) Biological clock
 - (c) Chi-square test
 - (d) Cholera
 - (e) Pearl culture

6. (a) Describe any two sedimentary biogeochemical cycles in nature. 10
(b) Explain in detail about the methods of studying animal behaviour. 15
(c) Discuss the importance of forests and mention the conservation steps to be undertaken. 15
7. (a) Describe different types of biological rhythms. 15
(b) Explain the life cycle of sugarcane pest with a sketch and add a note on its management. 15
(c) Describe the process of ecological succession in an ecosystem. 10
8. (a) Define correlation. Explain different types of correlation. Add a note on the uses of correlation. 15
(b) Describe the causative agent, symptoms, transmission, diagnosis and control measures of AIDS. 15
(c) Explain the principle, working and application of spectrophotometry. 10
