

ZOOLOGY (Paper I)

Time Allowed : Three Hours

Maximum Marks : 250

QUESTION PAPER SPECIFIC INSTRUCTIONS

(Please read each of the following instructions carefully before attempting questions)

There are EIGHT questions divided in two Sections.

Candidate has to attempt FIVE questions in all.

Question Nos. 1 and 5 are compulsory and out of the remaining, any THREE are to be attempted choosing at least ONE question from each Section.

The number of marks carried by a question/part is indicated against it.

Wherever any assumptions are made for answering a question, they must be clearly indicated.

Word limit in questions, wherever specified, should be adhered to.

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.

SECTION 'A'

1. Answer the following in about 150 words each:— **10×5=50**
- (a) Describe the organs and mode of locomotion in Paramoecium.
 - (b) Give an account of the structure of cnidoblast and various types of nematocysts of Hydra.
 - (c) Draw a transverse sectional diagram of female Ascaris and label it.
 - (d) Describe the different types of skulls in Reptilia with the help of labelled diagrams.
 - (e) Differentiate the structural variation of mouthparts in Insecta diagrammatically and label them.
2. (a) “Balanoglossus is the forerunner of chordates”—Justify the statement. **15**
- (b) What is Parasitism? Give an account of the life cycle of Wucheraria bancrofti and add a note on the pathogenicity and control of the disease caused by this parasite. **15**
- (c) Make a labelled diagrammatic representation of the basic forms and diversities in Echinoderm larvae and describe their evolutionary significance. **20**
3. (a) Describe “Torsion and Detorsion” in Gastropoda. Add a note on the significance of this phenomenon. **15**
- (b) With the help of labelled diagrams describe the embryonic disposition and modification of aortic arches in different vertebrates. **20**
- (c) Differentiate the basic characters of cartilaginous and Bony fishes with relevant diagrams. **15**
4. (a) What do you mean by Retrogressive metamorphosis? Give an illustrated account of the Gonads, developmental sequences and metamorphosis in Herdmania. **20**
- (b) Describe the Integumentary derivatives in Mammals along with labelled diagrams. **15**
- (c) Give an elaborate account on the Migration of Birds. Add a note on the problems faced by them during migration. **15**

SECTION 'B'

5. Answer the following in about 150 words each:— **10×5=50**

- (a) Distinguish between edge, border and ecotone. Why do edges and ecotones often support a greater diversity of species than the adjoining communities?
- (b) What do you understand about conditioning? Explain with relevant examples.
- (c) Give an account of “Analysis of variance” and mention its significance.
- (d) How are pearls cultured? Describe the economic importance of Pearl Culture.
- (e) Differentiate between the Phase Contrast and Fluorescent Microscopy.
- 6. (a) Define sustainable development. What are the merits of remote sensing in sustainable development? Give examples. 20
- (b) Give an elaborate account on AIDS. 15
- (c) Describe the Predator-Prey relationship with suitable examples. 15
- 7. (a) Distinguish between a dominant and keystone species. Add a note on the crucial role played by the keystone species on the community structure and structure of a food web. 20
- (b) Give an account on “correlation analysis”, its application and significance. 15
- (c) Describe the principle, structure and function of Liquid scintillation counter and mention its application. 15
- 8. (a) Give an account of Orientation, Navigation and Homing behaviour in animals with suitable examples. 20
- (b) What is ozone layer? Describe the mechanism of degradation of ozone layer and its impact. 15
- (c) Describe the principal steps in Apiculture and add a note on various aspects of its rearing techniques. 15