

ZOOLOGY (Paper I)

Time Allowed : Three Hours

Maximum Marks : 300

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.

SECTION 'A'

1. Write concise accounts of any three of the following in about 200 words each: **20×3=60**
- (a) What are coral reefs? Enlist their geographical distribution, types and threats being faced by them.
 - (b) Draw well labelled diagrams only of male urinogenital system of Labeo and frog.
 - (c) Enlist and draw the diagrams of various larval forms of Echinoderms and describe their evolutionary significance.
 - (d) Draw a well labelled diagram of the internal ear of rabbit. Comment upon the functions of each part.
2. Answer any two of the following: **30×2=60**
- (a) Enumerate various stages of sexual reproduction in Sycon. Provide diagrammatic representation in support of your answer.
 - (b) What are the various hosts in which Wuchereria bancrofti completes its life cycle? Describe various stages of its life cycle along with the diagram.
 - (c) Explain the structure and functions of respiratory organ of Lamellidens branchiata.
3. (a) What is retrogressive metamorphosis? Provide an illustrated account of reproduction in Herdmania. **30**
- (b) Draw a well labelled diagram of respiratory system of Scoliodon and explain the mechanism of respiration. **30**
4. (a) Give an account on dentition in mammals. **30**
- (b) Enlist any five hard derivatives of vertebrate integumentary system. Give an account on various types of horns and antlers in mammals giving examples and diagrams. **30**

SECTION 'B'

5. Write in brief, accounts of any three of the following in about 200 words each: **20×3=60**
- (a) Mention the various steps of sulphur biogeochemical cycle and draw a well labelled diagram. Discuss its significance.

- (b) What is meant by 'sign-stimulus'? Mention various types of sign-stimuli and discuss with examples.
- (c) What is Lac culture? What are the uses of lac? Explain the methodology employed in lac culture. Discuss its present scenario in India.
- (d) What is EM? Mention different types of EM. Describe the structure and function of TEM. Mention its applications in biology.
6. (a) Define sustainable development. Discuss the principles of sustainable development in the conservation of natural resources. **20**
- (b) Give a brief account of social organisations and determination of 'castes' in termites. **20**
- (c) Write the clinical manifestations, mode of infection, diagnosis and treatment for tuberculosis. **20**
7. (a) What is student 't' test? Explain the application with example. **30**
- (b) Enlist five mammalian wildlife endangered species of India. Discuss the present scenario of conservation methods employed for Gir lion. **30**
8. (a) What is imprinting? Discuss salient features and significance of this phenomenon in animals. **30**
- (b) Comment upon "sexual conflicts" in animals. **30**