

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.

Neat sketches may be drawn, wherever required.

Answers must be written in ENGLISH only.

Indian Forest Services (Main)  
Examination 2022  
**SECTION—A**

1. Write a brief account on each of the following : 8×5=40
- (a) Horns and antlers in mammals
  - (b) Hormonal regulation of metamorphosis in insects
  - (c) Gonadal hormones and their functions
  - (d) Types of symmetry in animals
  - (e) Status of Sphenodon
2. (a) Explain the migration in fishes with suitable examples. 15
- (b) Describe the defensive structures and their mechanism of action in coelenterates. 15
- (c) Elaborate the general features of aquatic mammals and primates. 10
3. (a) Draw a transverse section of mammalian cochlea and explain how hearing is affected. 15
- (b) Describe the modes of life in polychaetes. 15
- (c) Discuss the various parasitic adaptations in Platyhelminthes. 10
4. (a) Explain the various adenohipophyseal hormones and their physiological functions. 15
- (b) Describe the modification of mouthparts in honeybee. 15
- (c) Classify the phylum Echinodermata up to class level and highlight the specific features of each class with examples. 10

**SECTION—B**

5. Write a brief account on each of the following : 8×5=40
- (a) Population age pyramids
  - (b) Principle, working and application of flame photometry
  - (c) Sign stimuli
  - (d) *F*-test and its application in biology
  - (e) Prawn culture

6. (a) Explain the general methods of prevention and control of air pollution. 15
- (b) Discuss the principle, working and application of scanning electron microscope. 15
- (c) What is correlation? Give its types, and explain graphic method and Spearman's rank correlation method of estimation of correlation between two variables. 10
7. (a) Discuss the nature of damage caused by *Pyrilla perpusilla* to sugarcane. Write its life cycle and control measures. 15
- (b) Differentiate between primary and secondary succession. Explain the sequential steps involved in the process of primary succession. 15
- (c) Describe the various types of social organizations prevalent in primates. 10
8. (a) Describe biological and non-biological nitrogen fixation. 15
- (b) Explain the instrumental learning in animals highlighting law of effect and law of exercise. 15
- (c) Explain the pathogenicity, means of spread and preventive measures of AIDS. 10

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