

2018

M.Sc. Part-I Examination

ZOOLOGY

PAPER—I (Group—A)

Full Marks : 50

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer any four questions taking two from each unit.

Unit—I

(Non-Chordates)

1. Explain with evidence the theory of Haeckel on the evolution of metazoa. Distinguish mesozoa from parazoa with examples. 5+7½
2. Define larva. Briefly discuss the concept of resource utilization in the larval development and its role in the global distribution for aquatic metazoan larvae. 6+6½

(Turn Over)

3. Define coelom. Describe origin and evolution of different types of coelom. What are the significance of development of coelom in metazoans ? 1+3+4+4½
4. (a) Write short notes on any *two* : 2×4
- (i) Different structures associated with feeding mechanism in ectoprocta.
 - (ii) Ecological roles of free living nematode.
 - (iii) Key stone species—and its ecological significance.
 - (iv) Trochophore larva and its significance.
- (b) Answer any *one* : 1×4½
- (i) Explain metamorphosis with examples.
 - (ii) Structural importance of 'Wheel organ' in rotifera.

Unit—II

(Chordates)

5. (a) Give suitable example of the fishes belonging to the following orders : 6
- (i) Syngnathiformes ;
 - (ii) Tetradontiformes ;
 - (iii) Osteolepiformes ;
 - (iv) Hexanchiformes ;

- (v) Chepliformes ;
 - (vi) Siluriformes.
- (b) Mention at least two salient features of the following orders : 6½
- (i) Clupeiformes ;
 - (ii) Pleuronectiformes.
 - (iii) Mugiliformes
6. (a) Draw and describe the evolutionary tree of *Homo sapiens* in respect of time scale. 6½
- (b) Give a descriptive account of Jaw suspension in vertebrates with necessary illustrations. 6
7. (a) Give a brief outline about the evolution of gill bars and gill filaments in fishes. 4
- (b) Give an account of integumental derivatives of mammals. 4
- (c) Describe the anatomical peculiarity of air sacs in birds. 4½
8. (a) Write notes on (any *one*) : 4½
- (i) Iodine binding in tunicates
 - (ii) Altitudinal and Longitudinal migration in birds.

(b) Write short notes on any two :

2×4

- (i) Internal ear of mammals
 - (ii) Echolocation in bats
 - (iii) Double pump system
 - (iv) Ascidian endostyle.
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