

2015

**M.Sc. Part-I Examination**

**ZOOLOGY**

**PAPER—I ( Group—A )**

Full Marks : 50

Time : 2 Hours

*The figures in the margin indicate full marks.*

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

*Illustrate the answers wherever necessary.*

**Group—A**

Answer any *two* questions from each unit.

**Unit—I**

**( Non-Chordates )**

1. Write the distinction between protostomes and deuterostomes with regard to origin of mouth, coelom formation, and cleavage pattern. Draw phylogeny and evolutionary tree of metazoans based on body symmetry and degree of compartmentation of body.

6+6 $\frac{1}{2}$

(Turn Over)

2. State the identifying characters of free living nematodes. Enumerate their role as decomposer and plant infestor. Add a note on *Coenorhabditis elegans* from the perspective of developmental studies.

$2\frac{1}{2}+6+4$

3. Name the synonyms of Phylum Bryozoa. Elucidate the role of funicular cords of a bryozoan colony. Suggest an experiment to prove that the increased division rate of edge zooids is brought about by the increased nutrient movement from central zooids.

$2\frac{1}{2}+5+5$

4. Write short notes on (any *two* from a, b, c and *one* from d or e) :

$12\frac{1}{2}$

- (a) Butterfly park ; 4  
 (b) Conservation of earthworm ; 4  
 (c) Trochophore larva ; 4  
 (d) Significance of larval study ;  $4\frac{1}{2}$   
 (e) Demerits of colonial theory put forward by Hadzi.

$4\frac{1}{2}$

## Unit—II

### (Chordates)

5. (i) Cite suitable example of the fishes belonging to the following fish orders : 6

- (a) Lamniformes ;  
 (b) Osteolepiformes ;  
 (c) Torpediniformes ;  
 (d) Mastacembiliformes ;  
 (e) Tetradontiformes ;  
 (f) Siluriformes.

- (ii) Write any two distinctive characters of the following :

$6\frac{1}{2}$

- (a) Cypriniformes ;  
 (b) Perciformes ;  
 (c) Siluriformes.

6. (i) Describe briefly the accessory respiratory structure of:

*Anabas, Clarias, and Heteropneustes.* 6

- (ii) Draw and explain the evolutionary tree of *Homo sapiens* in respect to time scale.

$6\frac{1}{2}$

7. (i) Discuss in brief the different types of kidneys found in vertebrates. 6

- (ii) Describe in detail on the fine structure of nephron with suitable illustration.

$6\frac{1}{2}$

8. (i) Define echolocation. State the morpho-structural adaptations for Chiropteran echolocation.

$6\frac{1}{2}$

(ii) Describe the structure of Internal ear of a mammal with suitable illustration.

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