2008

M.Sc.

1st Semester Examination

ZOOLOGY

PAPER—Z-101

Full Marks : 40

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.

Group—A

(Non-Chordates)

1. Answer any *two* of the following : 2×2

(a) Mention four characteristic features of Metazoa.

(b) Differentiate schizocoelic and enterocoelic colour formation.

(c) Importance of larva in aquatic life.

(d) Name the constituent minor phyla under Lophophorata.

2. Answer any *two* of the following : 4×2

(a) Comment on the ecological role of free living nematodes.

(b) Why flagship species are important from the point of non-chordates conservation.

(c) Mention the triggering factors for the cyclomorphosis in Rohifera.

(d) Highlight the role of Foraminifera in assessing environmental features of marine environment.

3. Answer any *one* of the following :

(a) Briefly describe the variation in stomal structures of soil inhabiting and plant feeding nematodes. Discuss the Benet and Clark's Model explaining the pumping cycle of nematodes. 4+4

(b) Depict the major evolutionary divergences in extant Super-phyletic groups of metazoa, based on their embryonic, morphological and molecular criteria. Explain colonial blastea-planula theory with suitable diagram in respect to metazoan origin. 4+4

Group—B

(Chordate)

1. Answer any *two* questions : 2×2

(i) Cite one example of the following fish orders :
Pleuronectiformes,
Pereiformes,
Mugiliformes,
Lamniformes.

(ii) Chemical structure of tyrosine and Di-iodotyrosine.

(iii) Prerequisites of respiratory organs.

(iv) Swimbladders of Protopterus — State the evolutionary significance of the swim bladder of Protopterus.

2. Answer any *two* questions : 4×2

(i) Fish gills.

(ii) Explain the evolution of Membranous labyrinth in respect to 'dog-fish and rabbit'.

(iii) Discuss the morphological adaptations for echolocation in *Myotis lucifugus*.

(iv) Sketch the phylogeny of mammalian evolution after Colbert (1969) and Griffith (1978).

3. Answer any *one* from the following :

(a) (i) Separation of Urinary and gonadel duct in vertebrate. 4

(ii) Mammalian Metanephrictubules. 4

(b) (i) Iodine cycle in protochordates. 4

(ii) Osmoregulation in marine water fishes. 4