PG/IS/ZOOL/Z - 101/09

M.Sc 1st Semester Examination, 2009

ZOOLOGY

PAPER—Z - 101

Full Marks : 40

Time : 2 hours

The figures in the right-hand margin indicate marks

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

Illustrate the answers wherever necessary

Write the answers to questions of each Group in separate books

GROUP—A

(*Non-Chordates*)

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

(*a*) Distinguish between Protostome and Deuterostome.

(*b*) Mention diagnostic features of Foraminifera.

(*c*) Differentiate spiral cleavage from radial cleavage.

(*d*) What is an umbrella species ?

2. Answer any *two* questions : 4 x 2

(*a*) Comment on the theory put forward by Hadzi to explain the metazoan origin.

(*b*) Highlight molecular basis of metazoan relationship.

(*c*) Describe the feeding apparatus of Bryozoa.

(*d*) Discuss significance of non-chordate conservation.

3. Answer *one* of the following : 8 x 1

(*a*) What is wheel organ? Discuss mode of reproduction in rotifera with special reference to environmental stimuli. 2 + 6

(*b*) Describe the structures associated with the food capturing devices of Bryozoa. Discuss the mechanism of feeding in this group with the help of suitable hypothesis. 3 + 5

GROUP—B

(*Chordate*)

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

(*a*) Cite suitable example of the following fin fish orders :

Mastacembaliformes

Mormyriformes

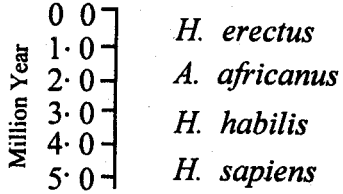
Macruriformes

Halosauriformes.

(*b*) Chemical structure of Thyroxine.

(*c*) Write down the orders of Cohort-Unguiculata with suitable examples.

(*d*) Mention the specific position in Million years time scale of the species evolved (mentioned below) during the evolution of *Homo sapiens sapiens*.



2. Answer any *two* questions : 4x2

(*a*) Give an outline sketch of the evolution of Order Primate.

(*b*) Quantify the normal and abnormal constituents of Urine.

(*c*) Describe in brief the accessory respiratory structures found in *Anabas* and *Heteropneustes* with suitable diagram.

(*d*) How do Chiropteras locate their food materials ?

3. Answer *one* of the following questions : 8 x 1

(*a*) (*i*) Describe the structure of a mammalian kidney.

(*ii*) Make a diagramatic representation of the tubular reabsorption and secretion during urine formation. 4 + 4

(*b*) (*i*) Does freshwater fish drink water? Explain.

(*ii*) What is counter current exchange theory? Illustrate the counter current mechanism (diagramatic). 3 + 5