CSM – 70/20
Zoology
Paper – I

Time : 3 hours

Full Marks : 300

The figures in the right-hand margin indicate marks.

Candidates should attempt Q. No. 1 from Section – A and Q. No. 5 from Section – B which are compulsory and any ***three*** *of the remaining questions, selecting at least* ***one*** *from each Section.*

SECTION – A

1. Answer **all** questions of the following :

   (a) Make a chart to show the classification of all major invertebrate phyla upto their classes. 15

   (b) Peripatus is one of the important organisms in terms of evolution. Discuss its affinities. 15

(c) Illustrate parental care seen in all the three orders of amphibians with suitable examples. 15

(d) Enumerate flight adaptations observed in birds. 15

2. (a) With labelled diagrams (no descriptions desired) illustrate different types of canal systems found in Porifera. 30

(b) Discuss various parasitic adaptations with suitable examples in Helmenthes. 30

3. (a) What are the distinguishing features of the poisonous snakes from non-poisonous ones ? Give suitable examples. 30

(b) Prepare a chart showing the endocrine glands, their cell types, the hormones secreted and their specific functions on the target tissues. 30

4. Write notes on the following : 15×4 = 60

(a) Affinities of Hemichordata

(b) Torsion and detorsion in Gastropoda

(c) Larval forms of Echinodermata

(d) Neoteny in Amphibia

SECTION – B

5. Answer **all** of the following :

(a) Describe how the two laws of thermodynamics get applied in energy flow in an ecosystem. 15

(b) Discuss the role of hypothalamus and pheromones in regulation of behaviour. 15

(c) Discuss the mechanism of pearl formation in bivalves. 15

(d) With the help of ray diagram show image formation in a Student's compound microscope. 15

6. (a) Illustrate how the productivity of a pond water ecosystem is assessed. 30

(b) What are the major cause for endangering of a species and comment on the management strategy for endangered species ? 30

7. (a) What do you understand by Biological Clock ? Discuss the molecular basis of biological clock in diurnal animals. 30

(b) Discuss the role of pathogen and vector in AIDS. Discuss how this disease is established inspite of a strong immune system of our body. 30

8. (a) Write notes on the following : $10 \times 3 = 30$

(i) Standard deviation

(ii) χ^2-test

(iii) Regression

(b) Write the basic principle of each step of immunoblotting. 30