2012

ZOOLOGY (Honours)

First Paper

Full Marks : 90   Time : Four Hours

The figures in the margin indicate full marks.

Group - A

1. Answer any *four* questions :   2×4=8

   (a) Why *Euglena* is called mixotrophic organism ?

   (b) Why phylum Porifera is known as 'dead end of phylum'?

   (c) Differentiate between pseudocoelom and coelom.

   (d) Name two ciliary bands of trochophore larva. State their functional significance.

   (e) Why male mosquito cannot bite ?

   (f) What is juvenile hormone (JH) ? Point out its function.

2. Answer any *four* questions :   4×4=16

   (a) Mention the different types of symmetry observed in the kingdom Animalia and their importance.

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(b) Discuss the role of symbionts in coral reef growth and productivity.

(c) Write a short note on parasitic adaptations of *Taenia* sp.

(d) Discuss different types of metamorphosis in insects with suitable diagrams.

(e) Explain the significance of metamerism.

(f) Comment on the phylogenetic status of *Peripatus*.

3. Answer any *two* of the following : $10\frac{1}{2} \times 2 = 21$

   (a) Classify phylum Echinodermata up to subclasses with reasons and suitable examples.

   (b) Define polymorphism. Illustrate it with suitable examples from the order siphonophora. State its significance. $1+7+2\frac{1}{2}=10\frac{1}{2}$

   (c) Discuss various hypotheses of metazoan origin.

   (d) Describe the life history of *Fasciola hepatica* with suitable diagrams.

Group - B

4. Answer any *four* of the following : $2 \times 4 = 8$

   (a) Differentiate between horn and antler.

   (b) Define neoteny and paedomorphosis.

   (c) What is carnassial teeth?

(d) What is solenoglyphus fang ? Give an example.

(e) Distinguish between Ratitae and Carinatae.

(f) What is ductus caroticus ?

5. Answer any *four* questions :　　　4×4=16

(a) Explain the phenomenon of retrogressive metamorphosis in *Ascidia*.

(b) How mimicry helps amphibians in defense against predators ?

(c) Classify reptilian skulls on the basis of temporal vacuities.

(d) Write a note on Jacobson's organ.

(e) Distinguish between Actinopterygii and Crossopterygii.

(f) What is bimodal respiration ? Explain the phenomenon in any fish with suitable diagram.

6. Answer any *two* of the following :　　　10½×2=21

(a) Enumerate the salient features of dipnoi. Write about the distribution of lung fish.　　7½+3=10½

(b) Write about the aerodynamic principles involved in 'lift', 'drag' and 'propulsion' of flying bird. Differentiate between hovering flight and flapping flight.　　8½+2=10½

P.T.O.

(c) Give a comparative account of structure of kidney among amniote vertebrates.

(d) *Branchiostoma* is both ciliary and filter feeder —justify the statement. Why the excretory system of *Branchiostoma* is considered as primitive type ?

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