ZOOLOGY PAPER–I

[Bio-diversity & Cell Biology–I (ZOO-101)]

Time Allowed : Three Hours **Maximum Marks : 36**

Note : Attempt *five* questions in all selecting *two* questions from each Unit and Question No. 1 is compulsory. Draw well labeled diagrams where required.

1. Explain briefly :
   (a) Cyclosis
   (b) Intermediate host
   (c) Metagenesis
   (d) Economic importance of *Metridium*
   (e) Osmosis
   (f) Mitochondrial DNA
   (g) Name *two* fixatives used in microscopy.
   (h) Name *two* enzymes associated with mitochondria. $8 \times 1 = 8$

Unit–I

2. (a) Explain different theories of locomotion in *Amoeba*. 3.5
   (b) Give sketch of life-cycle of *Plasmodium*. 3.5
3. (a) Classify class mastigophora of protozoa into various orders and give suitable examples. 3
   (b) Write an ecological note and economic importance of the following:
   (i) *Trypanosoma*
   (ii) *Opalina*
   $2 \times 2 = 4$

Unit–II

4. Describe canal system of Sycon and explain the mechanism of circulation of water through the system. 7
5. (a) Classify class calcarea and Hexactinellida of porifera up to orders and give suitable example.
   (b) Write an ecological note and economic importance of the following:
   (i) *Hyalonema*
   (ii) *Tubularia*
   $2 \times 2 = 4$

Unit–III

6. (a) Explain principle and applications of SEM. 4.5
   (b) Differentiate between prokaryotic and eukaryotic cell. 2.5
7. (a) What is fixation ? Explain different types of staining techniques used in cell biology. 3
   (b) Explain fluid mosaic model of plasma membrane. 4

Unit–IV

8. Explain the structure, associated enzymes and functions of Golgi apparatus. 7
9. (a) Explain the role of mitochondria in respiration. 4
   (b) Explain structure and functions of ER. 3