

2013

ZOOLOGY

(Major)

Paper : 3-2

Full Marks : 60

Time : 2½ hours

*The figures in the margin indicate full marks
for the questions*

1. Write 'True' or 'False' : 1×7=7

- (a) The nucleoplasmic ratio is one of the factors that governs the size of the cell.
- (b) The major part of the cytoplasm of a cell is largely in the gel state.
- (c) Histones are the small basic proteins associated with RNA of eukaryotic cells.
- (d) In 70S ribosome, the RNA/protein ratio is 2 : 1.
- (e) The phagosome fuses with a primary lysosome to form a secondary lysosome in which the food material is digested by enzymes.

- (f) Centrioles are morphologically identical to the basal body of cilia and flagella.
- (g) The terminal part of a chromosome beyond secondary constriction is called satellite.

2. Write short notes on the following : $2 \times 4 = 8$

- (a) Gram +ve bacteria
- (b) Plasmids
- (c) Mycoplasma
- (d) Ubiquinone

3. Answer any *three* from the following : $5 \times 3 = 15$

- (a) Write the functional significance of Golgi bodies.
- (b) Write on the biogenesis of 80S ribosome.
- (c) Write the events that occur during interphase of cell cycle that prepare the cell for nuclear division.
- (d) Write a brief note on the structure of eukaryotic chromosome.
- (e) Write a brief note on physical properties of protoplasm.

(3)

4. (a) Write the structure of endoplasmic reticulum and discuss the various functions performed by endoplasmic reticulum. 3+7=10

Or

"Lysosomes are said to be the suicidal bags in the cells." Explain it. Give the chemical composition and functions of lysosome. 2+3+5=10

- (b) Describe the structure and functions of mitochondria with special reference to electron-transport system. 3+7=10

Or

What do you understand by cytoskeleton? Name its various components and their functions and mention how they are involved in a variety of cell movements. 2+4+4=10

- (c) Write an essay on transport of ions across plasma membrane. 10

Or

What are the characteristic features of a cell membrane? Describe the permeability and chemical composition of a cell membrane. 3+3+4=10
