2018

ZOOLOGY

(Major)

Paper : 3.2

(Cell Biology)

Full Marks : 60

Time : 3 hours

The figures in the margin indicate full marks for the questions

1. Write True or False : 1×7=7

(a) During interphase, nucleolus comprises of an amorphous part and filamental structures—the nucleolonema.

(b) Ribosome is known as 'suicide bag' of a cell.

(c) G_2-phase is the part of the cell cycle in which DNA is replicated.

(d) The convex face of cisternae of Golgi body is called the forming face.

(e) Some bacteria assume different forms in their life cycle, they are said to be pleomorphic.

(f) There is a definite ratio of the cytoplasm and nucleus of the cell, which is known as kern-plasm ratio.

(g) Active transport moves the substances across the plasma membrane against their concentration gradients using energy.

2. Write short notes on the following : 2×4=8

(a) Lampbrush chromosome

(b) Role of centromere in cell division

(c) Axoneme

(d) Synapsis

3. Answer any *three* from the following : 5×3=15

(a) Define lysosome. How can they be regarded as polymorphic?

(b) State the differences between mitosis and meiosis.

(c) Describe the ultrastructure of the centrioles.

(d) Describe the process of biogenesis of ribosomes.

(e) Write briefly on exocytosis and endocytosis with examples.

4. *(a)* Describe the ultrastructure of Golgi bodies. State their various functions. 3+7=10

Or

What do you understand by cell cycle? Give an account of the salient features of various phases of cell cycle. 2+8=10

(b) Give an account of the structure of chromosome. Distinguish between chromonema and chromatid. Write a short note on the different chromosomal shapes at anaphase. 5+2+3=10

Or

What are microtubules? Describe their structures, assembly, diassembly and functions. 2+8=10

(c) Describe the function of mitochondria with special reference to electron transport system. 10

Or

Describe the structure of plasma membrane. State different types of modification of plasma membrane. Write briefly the functions of plasma membrane. 5+3+2=10

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