2014

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

(b) Mesosomes, the infolds of cell membrane of some bacteria, bear respiratory enzymes.

(c) The protein layer provides elasticity and mechanical resistance to the plasma membrane.

(d) Euchromatin takes light stain and has less RNA content.

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

(f) A microtubule is walled by 13 proto-filaments formed of globular subunits of protein tubulin.

(g) The Na^+ K^+ exchange pump is a multipurpose active transport carrier protein.

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

(a) Ribonucleoprotein particles

(b) Chemical properties of protoplasm

(c) Lampbrush chromosome

(d) Oxysomes

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

(a) Give the main functions of endoplasmic reticulum.

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

(c) What are the main functions of the basal bodies and the centriole?

(d) Write on endocytosis.

(e) Write on oxidative decarboxylation.

4. (a) Write the structure of Golgi bodies. Discuss the various functions performed by Golgi bodies. 3+7=10

Or

Give an account of the structure of eukaryotic ribosomes and their roles in protein synthesis. 3+7=10

(b) Describe the structure and functions of mitochondria with special reference to electron transport system. 4+6=10

Or

How many models of plasma membrane do you know? Explain which of the models of it is more dynamic and why. Describe the mechanism of active transport. 2+5+3=10

(c) 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+3+2=10

Or

What do you understand by cell cycle? Give an account of the salient features of various phases of cell cycle. How is eukaryotic cell cycle regulated by cyclin-dependent kinases? 2+6+2=10

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