2024

BIOTECHNOLOGY

(FYUGP)

Paper : BIT0300104

(Cell Biology)

Full Marks : 45

Time : 2 hours

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

1. Answer the following questions as directed : 1×5=5

   (a) Fluid mosaic model was proposed by_____. *(Fill in the blank)*

   (b) Define osmosis.

   (c) Which of the following is absent in prokaryotic cells ?
   (Choose the correct option)

   (i) Ribosomes

(ii) Plasma membrane

(iii) Mitochondria

(iv) DNA

(d) Who proposed the cell theory?

(e) The term 'cel' was first coined by _____. *(Fill in the blank)*

2. Answer the following questions in brief ***any five)***: 2×5=10

(a) What are the roles of mitochondria in a cell?

(b) Name two differences betvween chromatin and chromosomes.

(c) What are centrioles and where are they found?

(d) Define plasmolysis.

(e) What are lysosomes and why are they called 'suicidal bags'?

(f) Name two types of transport mechanisms across the cell membrane.

(g) Mention two functions of the endoplasmic reticulum.

(h) What is the difference between passive transport and active transport?

(i) Define the term 'semi-permeable membrane'.

(j) State the difference between plant and animal cells.

3. Write short notes on: ***(any four)*** 5×4=20

(a) Nucleus and its functions

(b) Golgi complex

(c) Chloroplast

(d) Mechanism of cell signalling

(e) Compartmentalization of eukaryotic cells

(f) Cytoskeleton

(g) Receptor ligand interactions and their functions

(h) Fluid mosaic model of cell membrane

4. Answer the following questions: ***(any one)*** 10×1=10

(a) Write a note on structure and functions of ribosomes. 10

(b) Compare between eukaryotic and prokaryotic cells. Write a note on nucleolus. 7+3=10

(c) Briefly explain the intrinsic and extrinsic pathways of apoptosis. 5+5=10

(d) Describe the structure and function of microtubules, microfilaments and intermediate filaments. 10