Brain International School

Vikas Puri, New Delhi

ASSIGNMENT NO. 3

SUBJECT: BIOLOGY **CLASS-XI** **JULY,2025**

CHAPTER 8: CELL: THE UNIT OF LIFE

1 Mark each

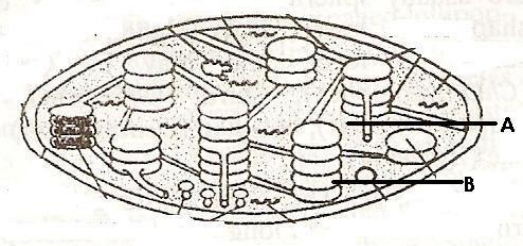
1) Name the substance that stabilizes the cell membrane of a eukaryotic cell.
2) What kind of ribosomeS are found in a prokaryotic cell?
3) Name the substance that stabilizes the cell membrane of a prokaryotic cell.

2 Marks each

1) Why are lysosomes called suicidal vacuoles? What kind of enzymes do they have?
2) Describe the genetic organization of a bacterial cell.
3) How is a Eukaryotic cell wall different from a prokaryotic cell wall?
4) Describe the function of any membrane bound cell organelle.

3 Marks each

1) How does the fluid mosaic model of a cell membrane explain the following:
   i. facilitated transport
   ii. Tissue recognition
   iii. endocytosis
   iv. antigenic properties of a tissue
   v. active transport
2) What is euchromatin? Explain the structure of a eukaryotic nucleus
3) Observe the given diagram and answer the questions that follow:



a) Identify the picture shown above.

b) Label A and B

c) Give the function of each

5 **Mark each**

1) Describe along with labeled illustrations, the Singer Nicholson Model of thecell membrane.

Chapter 9: BIOMOLECULES

1 Mark each

1) Name the homopolysaccharide found in an animal cell.
2) What are nucleosides?
3) Name 2 essential fatty acids.
4) What do you mean by anti parallel nature of DNA?
5) What kinds of bonds are found in a starch molecule?

2 Marks each

1) Why does oedema occur in persons suffering from deficiency of protein?
2) Name 2 coenzymes derived from vitamins?
3) Name 2 non-iron products of the breakdown of hemoglobin.
4) Differentiate between coenzyme and cofactor. Describe any 3 factors that affectenzyme activity
5) With the help of illustrations describe the secondary structure of proteins.
6) What is Km? What is its significance?

3 Marks each

1) Illustrate a glycosidic, a peptide, and a phosphodiester bond.
2) With the help of illustrations explain the concept of feedback inhibition of enzymes.
3) Enlist 3 factors that affect enzyme activity. Describe how they change enzymefunction.
4) Why are phospholipids called amphipathic? State the significance of such moleculeswith respect to biomembranes. State any 1 role of the proteins found in association with biomembranes.

5) How are enzymes classified? How do they act as biocatalysts?

Chapter 10: CELL CYCLE AND CELL DIVISION

1 Mark each

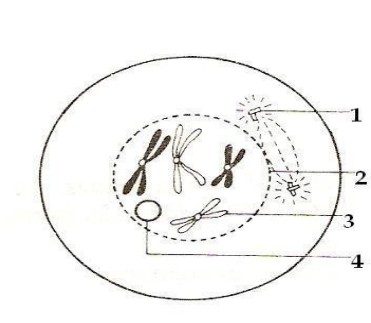
1) In which phase does DNA replication take place?
2) In which phase of cell division are the chromosomes present in the cytoplasm?
3) At which phase do you see sister chromatids during mitosis and meiosis?

2 Mark each

1) Enumerate the events that occur during diakinesis. What is the significance ofcrossing over?
2) What are the events that occur during (a) G2 phase, (b) S phase.
3) Does interphase take place after meiosis I? Justify.
4) Differentiate between mitotic and meiotic anaphase .

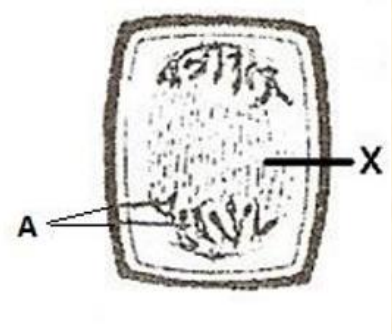
3 Mark each

1) Why the interphase is called a period of great activity? State the significance of meiosis.
2) Examine the figure and answer the questions:



i) Identify the stage.
ii) Label the diagram.
iii) What is the importance of '1'
iv) What will happen after this phase?

3) Observe the given diagram and answer the questions that follow.



v) Identify the stage shown in the diagram above.

vi) How will (X) form in this kind of a cell?

vii) How will this stage be different from a similar stage in Meiosis I?

viii) What is the chemical composition of (A)?

ix) Describe briefly, the stage immediately preceding this stage.