

Time : 2-30 Hours]

Instructions:

[Max. Marks : 70

All questions are compulsory.

Illustrate your answers with neat diagrams wherever necessary.

**Question - 1 Write the following**

- i) Give details of the various Events of cell cycle and its control. [07]
- ii) What is Cell-Cell Interactions and explain Cell adhesion in detail. [07]

OR

- i) Write a note on the Meiosis and its biological significance. [07]
- ii) Why some cell loses control on its growth, give detail on molecular dysregulation that cell underwent. [07]

**Question - 2 Write the following**

- i) Write a note on cytoskeleton and its importance. Give detail account on microtubules. [07]
- ii) Give detail account on movement of biomolecules across the bio-membrane. [07]

OR

- i) Write a note on types and significance of lipids and proteins present on Bio-membrane. [07]
- ii) Explain Ca ion movement across the bio membrane. What are the consequences of defect in Ca ion channel? [07]

**Question - 3 Write the following**

- i) Write a note on Lysosome and pathways through which materials reach to lysosome. [07]
- ii) Discuss the structural organization of Golgi body with its functions. [07]

OR

- i) What is scavenger pathway? Give a brief account on disorders related to this pathway. [07]
- ii) Explain the molecular organization of Endoplasmic Reticulum. Enlist various functions of Smooth and Rough Endoplasmic Reticulum. [07]

**Question - 4 Write the following**

- i) Write a note on nuclear membrane and transportation across it. [07]
- ii) Describe the organization and packaging of Chromatin in Nucleus. [07]

OR

- i) Discuss the characteristics of Cancer cells. Add a note on its Biomarkers. [07]
- ii) Explain mechanism and control of Carcinogenesis [07]

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**Question - 5**

**Attempt any seven out of twelve**

**[14]**

- i) Describe role of GPI anchor.
- ii) Write short note on factors affecting Fluidity of plasma membrane.
- iii) Explain importance of low pH in lysosome.
- iv) Significance of RBC cells having negative charge on the surface?
- v) What is ionophore and its role?
- vi) Give brief detail on actin filaments.
- vii) What is septate junction?
- viii) Cite difference between Nucleus and Nucleolus.
- ix) Significance of Mitosis.
- x) What is plasmodesmata?
- xi) List Importance of Glycosylation of protein present in bio-membrane.
- xii) What cause cancer?

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