



B.Sc./3rd Sem/BOT/25(NEP)

2025

3rd Semester Examination (CCFUP : NEP)

BOTANY

Paper : MJ 3-T (Single Core Major)

(Cell Biology)

Full Marks : 40

Time : Two Hours

*The figures in the margin indicate full marks.
Candidates are required to give their answers
in their own words as far as practicable.*

Group - A

Answer any *five* questions : $2 \times 5 = 10$

1. Define passive transport. Name one carrier mediated transport process.
2. What is facilitated diffusion?
3. What are cristae? Mention their roles.
4. Name the main components of the cell wall.
5. What are the roles of cyclins?
6. Name one cell adhesion molecule. Name one regulatory protein involved in neurotransmission.
7. Define NOR. Mention its function.
8. Define cell signaling.

P.T.O.

(2)

Group - B

Answer any *four* questions :

5×4=20

9. Name the different types of endocytosis and explain any one.
10. Write a short note on peroxisome. What is thylakoid?
4+1
11. Describe the stages of mitosis. What is the G₀ phase?
4+1
12. Write a short note on neurotransmission. Give one example of a second messenger.
13. Write differences between meiosis I and meiosis II. What is cytokinesis?
14. Briefly explain how integrins function as signal transducers. Which junction allows direct cytoplasmic exchange between adjacent cells?
4+1

Group - C

Answer any *one* question :

10×1=10

15. Explain the fluid mosaic model with suitable diagrams. Describe the role of protein kinases in cell cycle progression.
5+5
 16. Explain the principles of chromosome banding and discuss their applications in chromosome analysis. 10
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