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(Printed Pages 3)

(20426)

Roll No.:

B.Sc. (Biotech.)-I Year.

**3457**

**B.Sc. (Biotechnology)  
Examination, April-2026**

**Cell Biology**

**(B-103)**

**B.Sc. (Bio-Tech.)**

*Time : Three Hours /*

*[Maximum Marks : 50*

**Note :** Attempt any **five** questions. **All**  
questions carry equal marks.

1. Describe the cell theory and discuss the concept of pre-cellular evolution. 10
2. Write the function of calcium ions ( $\text{Ca}^{2+}$ ) in cellular signaling pathways and how they influence cellular activities. 10

**P.T.O.**

3. Describe in detail of:
- (i) Endoplasmic reticulum 5
  - (ii) Cell adhesion 5
4. Differentiate between the following:
- (i) Apoptosis and necrosis 4
  - (ii) Cell senescence and cell differentiation 3
  - (iii) Endocytosis and exocytosis 3
5. Write a detailed note on the following:
- (i) DNA replication 5
  - (ii) GPCR 5
6. Write the mechanisms of signal transduction through Receptor Tyrosine Kinases and their importance in cellular responses. 10
7. Write a short note on the following:
- (i) Protein kinases 4
  - (ii) Nucleoplasm 3
  - (iii) Cell cycle 3

8. Write the function of calcium ions ( $\text{Ca}^{2+}$ ) in cellular signaling pathways and how they influence cellular activities. 10
9. Write a short note on any **two** of the following:
- (i) Peroxisomes 4
  - (ii) Protein folding 3
  - (iii) Signal transduction 3
10. Write a short note on the following:

2 × 5 = 10

- (i) Nuclear membrane,
- (ii) Meiosis
- (iii) Nucleolus
- (iv) Golgi complex
- (v) Smooth Endoplasmic Reticulum

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