

(DBOT 23)

**M.Sc. DEGREE EXAMINATION,
DECEMBER 2009.**

Second Year

Botany

Paper VII — CELL BIOLOGY AND MOLECULAR BIOLOGY

Time : Three hours

Maximum : 100 marks

SECTION A — (5 × 8 = 40 marks)

Answer any FIVE of the following.

1. Fluid mosaic model.
2. Lysosomes.
3. Electron microscopy.
4. Transposable elements.
5. Messelson and Stahl's experiment.
6. Lysogenic cycle.
7. Negative regulation of gene.
8. Transcriptional factors.

SECTION B — (4 × 15 = 60 marks)

Answer ALL the following.

9. (a) Give an account of the ultra structure of the Chloroplast and indicate its role in the synthesis of ATP through photo phosphorylation.

Or

- (b) Write the detailed structure of Golgi complex and list out its functions in the cell.
10. (a) Explain the mechanism of signal transduction mediated by G-protein coupled receptors.

Or

- (b) Discuss the role of oncogenes in the development of cancerous growth in cells.
11. (a) Describe the mechanism of genetic exchange through conjugation in bacteria.

Or

- (b) Give an account of the development of the modern concept of gene.
- 12.** (a) What major enzymes are involved in DNA replication? Discuss the steps involved in DNA replication.

Or

- (b) Explain the essential features of genetic code and add a note on the Wobble hypothesis.
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