

**M.Sc. Botany (Final) DEGREE EXAMINATION, MAY 2007.  
Paper VII – CELL BIOLOGY AND MOLECULAR BIOLOGY**

**Time : Three hours**

**Maximum : 100 marks**

**SECTION A - ( 5 X 8 = 40 marks )  
Answer any FIVE of the following.  
All questions carry equal marks.**

- |                                    |                           |
|------------------------------------|---------------------------|
| 1. Principles of light Microscopy. | 2. IS elements.           |
| 3. Fluid mosaic model.             | 4. Lysosomes.             |
| 5. Hershey and Chase experiment.   | 6. Overlapping genes.     |
| 7. DNA polymerases of E.coli.      | 8. Frame shift mutations. |

**SECTION B - ( 4 X 15 = 60 marks )  
Answer ALL the following.**

9. (a) Explain the structure and functions of different membrane systems of chloroplast.  
Or  
(b) Role of vacuoles in plants.
10. (a) What are G proteins? What is their structure and explain their role in Signal transduction.  
Or  
(b) What is Apoptosis? What are the major sequential changes takes place during Apoptosis?
11. (a) Differentiate between the two methods of recombination in bacteria-Conjugation and Transduction.  
Or  
(b) Explain the evolution of Gene concept.
12. (a) Give an account of DNA repair mechanisms.  
Or  
(b) Explain how genes are regulated in eukaryotes.