

**FACULTY OF SCIENCE**

M.Sc. II - Semester (CBCS / Non-CBCS) Examination, April / May 2014

**Subject: Biochemistry**  
**Paper - II: Molecular Biology**

**Time : 3 Hours**

**Max. Marks: 80**

**Note: Answer all questions from Part - A and Part - B. Each question carries 4 marks in Part - A and 12 marks in Part - B.**

**PART – A (4 x 8 = 32 Marks)**  
**(Short Answer Type)**

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**Give an account on the following:**

- 1) Theta model of DNA replication
- 2) Telomerase
- 3) Physical and chemical mutagens
- 4) Holliday junction
- 5) Promoters in prokaryotes and eukaryotes
- 6) Features of genetic code
- 7) Chaperones
- 8) Ubiquitin

**PART – B (4 x 12 = 48 Marks)**  
**(Essay Answer Type)**

- 9 (a) Explain the role of various enzymes involved in DNA replication.  
**OR**  
(b) Write notes on the following:  
(i) PCR  
(ii) DNA replication of  $\phi$  x 174
- 10 (a) Briefly outline the various modes of DNA repair involved in direct repair models.  
**OR**  
(b) Describe the role of ATM or BRCA in DNA repair and mention some diseases arising due to defect in their function.
- 11 (a) Outline the various processes involved in RNA processing.  
**OR**  
(b) What are the various steps occurring during prokaryotes transcription?
- 12 (a) Describe any two lysosomal pathways and their role in a cell.  
**OR**  
(b) What is the significance of post translational modification in a protein ? Give two examples.

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