

B.Sc. CBCS Pattern Semester-III  
**011B - Biotechnology Paper-II : Molecular Biology and Enzymology**

P. Pages : 2

Time : Three Hours



**GUG/W/23/11619**

Max. Marks : 50

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- Notes : 1. All questions are compulsory and carry equal marks.  
2. Draw diagrams wherever necessary.

1. Explain the nomenclature and classification of enzyme. 10

**OR**

- a) Give the difference between co-enzyme & co-factor. 2½
- b) What is active site in enzymes? Why it is significant? 2½
- c) Explain Induced site model with suitable diagram. 2½
- d) What are modulators? Give their role. 2½

2. Explain effect of pH and temperature on enzyme activity. 10

**OR**

- a) Add a note on acid-base catalysis. 2½
- b) Give Michaelis Menten equation. 2½
- c) What is reversible inhibition give examples. 2½
- d) What is immobilization of enzymes. Give significance. 2½

3. Explain four steps of transcription in detail. 10

**OR**

- a) Give the role DNA polymerase I in replication. 2½
- b) What are Okazaki fragments. Give their role in replication. 2½
- c) Describe basic idea of lac-operon. 2½
- d) Prove that the replication in semiconservative process. 2½

4. Explain in detail Translation. 10

**OR**

- a) Write a note on topoisomerase. 2½

- b) Give in brief concept of couple transcription translation. 2½
- c) Describe wobble hypothesis for unusual lease pairing. 2½
- d) What are the steps in termination of polypeptide chain from protein synthesis site? 2½

**5.** Solve **any ten** (1 marks each) **10**

- a) What is activation energy?
- b) What is lock and key model?
- c) Define ribozyme?
- d) Define covalent catalysis?
- e) What is temperature quotient?
- f) How pH affects enzyme activity?
- g) What are topoisomerases?
- h) What is promoter?
- i) Give the role of primase?
- j) What are non sense codons?
- k) What is initiation codon?
- l) Define codon-anticodon interaction.

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