B.Sc. (CBCS Pattern) Sem-III

011B - Biotechnology Paper-II : Molecular Biology and Enzymology

P. Pages : 2 **GUG/W/22/11619**

Time : Three Hours * 2 2 6 4 * Max. Marks : 50

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1. Give the nomenclature and classification of enzyme in detail. **10**

OR

a) Define Active site, holoenzyme and cofactor. **2½**

b) Explain Lock and Key model of enzyme action. **2½**

c) Explain Allosteric enzyme. **2½**

d) What are isoenzyme? Explain with example. **2½**

2. Derive the Michaelis-Menten equation. **10**

OR

a) Write a note on Acid base catalysis of enzyme action. **2½**

b) Write a note on Line weaver Burke plot. **2½**

c) Give the brief account of enzyme immobilization. **2½**

d) Explain the reversible inhibition of an enzyme. **2½**

3. Explain Lac operon in detail. **10**

OR

a) Write a note on topoisomerase. **2½**

b) Explain the concept of promoter. **2½**

c) Explain the Rho dependent termination of transcription. **2½**

d) Give an account of Okazaki fragment. **2½**

4. Give the general characteristics of Genetic code. **10**

OR

a) Write a short note on Wobble hypothesis. **2½**

b) Give an account on shine Dalgarno sequence. **2½**

c) What is activation of amino acid. **2½**

d) Write a note on concept of couple transcription – translation. **2½**

5. Solve **any ten** of the following.

a) Define Enzyme. **1**

b) Define Katal. **1**

c) What is turnover number. **1**

d) Define enzyme inhibition. **1**

e) Give the example of irreversible enzyme inhibition. **1**

f) Define temperature quotient. **1**

g) What is the role of helicase. **1**

h) Enlist the subunit of RNA polymerase. **1**

i) What is SSB. **1**

j) What are non sense codon. **1**

k) Define Genetic code. **1**

l) Name the enzyme used in activation of amino acid during protein synthesis. **1**

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