

**FACULTY OF SCIENCE**

**M.Sc. II-Semester (CBCS / NONCBCS) (New) Examination, May / June 2015**

**Subject : Biochemistry**

**Paper - I : Enzymology**

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

- 1 Describe the factors affecting the activity of an enzyme.
- 2 Explain the different criteria used to check the purity of the given enzyme preparation.
- 3 Discuss the feedback inhibition with example.
- 4 Derive Michaelis-Menton equation for an enzyme catalysed reactions.
- 5 Explain acid-base catalysis with suitable example.
- 6 Describe the catalytic mechanism of lysozyme.
- 7 Explain reporter enzymes with suitable example.
- 8 Write a note on caspase cascade.

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

- 9 a) Discuss the different ways adopted in mapping the active site of an enzyme.  
**OR**  
b) Describe the role of biotin and foliate coenzymes in enzyme reaction.
- 10 a) Describe the MWC and KNF models of cooperative binding with suitable example.  
**OR**  
b) Discuss about competitive enzyme inhibition with examples.
- 11 a) Explain the structure and mechanism of action of ribonuclease.  
**OR**  
b) Describe the mechanism of action and regulation of fatty acid synthase multienzyme complex.
- 12 a) Give a detailed account on classical and alternative pathway of complement systems.  
**OR**  
b) What is rDNA technology? Describe in detail about restriction endonucleases and DNA ligases involved in rDNA technology.

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