

**M. SC. (BIOTECHNOLOGY) SEM-IV (2012 COURSE)(CHOICE
BASED CREDIT SYSTEM) : WINTER - 2017**

**SUBJECT: SPECILIZATION: a) ENZYMOLOGY & ITS INDUSTRIAL
APPLICATIONS**

Day: **Wednesday**
Date: **01/11/2017**

Time: **02.00 PM TO 05.00 PM**
Max Marks. 60

W-2017-0975

N.B.

- 1) All Questions are **COMPULSORY**.
- 2) Figures to the right indicate full marks
- 3) Answers to both the sections should be written in **SEPARATE** answer books.

SECTION - I

- Q.1** Answer **ANY TWO** of the following (10)
- a) State the principle of PAGE. Describe the precautions to be taken for separation of proteins by PAGE.
 - b) Describe the principle and working of NMR technique.
 - c) Describe immobilization of enzyme by entrapment method.
- Q.2** Answer **all** the following: (12)
- a) Write a note on Galactose intolerance.
 - b) What is regulation of enzyme? Describe the allosteric regulation in brief.
 - c) Write a note on disadvantages of HPCL.
 - d) What is High Fructose Corn syrup? How is it prepared?
- Q.3** Answer in short (Any TWO) (08)
- a) Discuss the effect of substrate concentration on enzyme kinetics.
 - b) Write a short note on physiological problems related to enzyme deficiency with a suitable example.
 - c) Write a note on enzyme substrate binding for catalysis.

SECTION - II

- Q.4** Answer any TWO (10)
- a) Describe protein sequencing in brief.
 - b) Describe separation of proteins by molecular sieve chromatography.
 - c) Discuss the precautions to be taken in large scale bioprocessing.
- Q.5** Answer the following (08)
- a) Describe the mechanism of action of carbonic anhydrase.
 - b) Write a note on density gradient centrifugation.
 - c) Explain competitive inhibition in brief with a suitable example.
 - d) Write a note on the 3-D structure of a protein.
- Q.6** Answer the following (12)
- a) What is the function of SDS in PAGE?
 - b) State the principle of HPTLC.
 - c) What is the principle of density gradient centrifugation?
 - d) What is the role of Dabsyl Chloride in protein sequencing?
 - e) What are the reasons for poor resolution of proteins in PAGE?
 - f) Define "bed volume" and "void volume" of a column.

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