

**M. SC. (BIOTECHNOLOGY) SEM-IV (2012
COURSE)(CHOICE BASED CREDIT SYSTEM) : SUMMER -
2018**

SUBJECT : ENZYMOLOGY & ITS INDUSTRIAL APPLICATIONS

Day : Tuesday
Date : 10/04/2018

S-2018-1090

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

N.B.

- 1) All questions are **COMPULSORY**.
 - 2) Figures to the right indicate **FULL** marks.
 - 3) Answers to both the sections should be written on **SEPARATE** answer book.
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SECTION – I

- Q.1** Answer any **TWO** of the following: (10)
- a) How are enzymes classified? Discuss in details.
 - b) How is structure and function related in enzyme action? Describe with a suitable example.
 - c) What are in-born errors associated with enzyme deficiencies? Explain with a suitable example.

- Q.2** Answer the following: (06)
- a) What is the role of pyruvate dehydrogenase in metabolism? Explain its mechanism of action briefly.

OR

- a) Explain the regulation of enzyme action with a suitable example.
- b) Differentiate between acid base catalysis and covalent catalysis. (04)

- Q.3** Answer in short: (10)
- a) Name any two hydrolases that are important commercially and any two clinically important enzymes.
 - b) What is the principle of salt precipitation in enzyme separation?
 - c) How is a unit of enzyme activity be defined?
 - d) What is an active site and binding site of an enzyme?
 - e) What factors stabilize an enzyme?

SECTION – II

- Q.4** Answer any **TWO** of the following: (10)
- a) Differentiate between batch process and continuous process in brief.
 - b) Describe the biomedical applications of enzyme in brief.
 - c) Discuss the various factors that affect enzyme based process in large scale operations.

- Q.5** Answer the following: (06)
- a) Describe the different methods of immobilization of enzyme in brief.

OR

- a) What are the differences between cross linking and entrapment method of immobilization?
- b) What is HPLC? Explain its principle and working. (04)

- Q.6** Answer in short: (10)
- a) What is adsorption chromatography?
 - b) How does concentration of substrate affect enzyme activity?
 - c) Name the reagents that are used for studying active site of an enzyme?
 - d) What is the principle of NMR?
 - e) Why are synthetic supports preferred for immobilization?

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