

M. Sc. (Biotechnology) Sem-IV (2012 Course)(Choice Based Credit System) : WINTER - 2018

SUBJECT: SPECIALIZATION: a) ENZYMOLOGY & ITS INDUSTRIAL APPLICATIONS

Day: Tuesday
Date: 23/10/2018

W-2018-1214

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 in the **SEPARATE** answer book.

SECTION-I

- Q.1** Answer **ANY TWO** of the following: **(10)**
- a) What is enzyme inhibition? What are their types? Explain any one type of enzyme inhibition in brief.
 - b) What is centrifugation? How is it useful in separation of bio-molecules?
 - c) State the principle of Florescence spectroscopy and its use in brief.
- Q.2** Answer of the following: **(06)**
- a) What is gel permeation chromatography? Describe in detail. **(06)**
- OR**
- a) Explain MALDI-TOF, its principle and working.
 - b) Write a note on "In-born errors of metabolism" related to deficiency of any one enzyme. **(04)**
- Q.3** Answer of the following: **(10)**
- a) Name two inorganic carriers used for immobilization of enzyme.
 - b) What is the difference between covalent coupling and cross linking for immobilization of enzyme?
 - c) What is mass transfer effect?
 - d) Define porous diffusion.
 - e) In what way does pH affect amino acids in active site?

SECTION-II

- Q.4** Answer of the following: **(06)**
- a) Discuss how pyruvate dehydrogenase complex is regulated. **(06)**
- OR**
- a) Discuss the kinetics of Non- competitive enzyme inhibition.
 - b) What is HFCS? How is it prepared? What are its advantages and disadvantages? **(04)**
- Q.5** Answer **ANY TWO** of the following: **(10)**
- a) Describe the principle and mechanism of separating proteins by SDS- PAGE.
 - b) Describe the principle of HPLC and state its advantages and disadvantages.
 - c) What are diagnostic and therapeutic enzymes? Describe briefly.
- Q.6** Answer the following: **(10)**
- a) What is steady state kinetics for enzyme catalyzed reaction?
 - b) Give any two uses of enzymes as pharmaceuticals.
 - c) Silica is a good inorganic carrier/support. Explain in brief.
 - d) How is unit of enzyme activity defined?
 - e) Define acid-base catalysis and Metal catalysis theory in short.

* * * * *