

**M. Sc. (Biotechnology) Sem-I / M. Sc. (Medical Biotechnology) Sem- I
(CBCS 2018 Course) : SUMMER - 2019**

SUBJECT: BIOCHEMISTRY

Day: Thursday
Date: 04/04/2019

S-2019-1423

Time: 10.00 AM TO 01.00 PM
Max Marks. 60

N.B.

- 1) All questions are **COMPULSORY**.
 - 2) Figures to the right indicate **FULL** marks.
 - 3) Answers should be written in **SAME** answer book.
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SECTION - I

Q.1 Attempt any **FIVE** of the following: **(10)**

- a) What are allosteric enzymes? Give a suitable examples.
- b) Name the monomers of chitin and cellulose.
- c) What are essential and non-essential amino acids?
- d) Which enzymes are important in malto-dextrin production?
- e) What are co-enzymes? Name any two co-enzymes.
- f) Draw the structure of any two disaccharides.
- g) Give two examples each of mono and diglycerides.

Q.2 Attempt any **TWO** of the following: **(10)**

- a) How are lipids classified? Describe briefly.
- b) How is starch degraded enzymatically? What are the important hydrolytic products?
- c) Describe the secondary structure of proteins.

Q.3 Attempt any **TWO** of the following: **(10)**

- a) How is an unsaturated fatty acid metabolized? Explain using suitable example.
- b) How are nucleotides synthesized? Describe in brief.
- c) Describe the light reaction of photosynthesis.

SECTION - II

Q.4 Attempt any **FIVE** of the following: **(10)**

- a) Name the final acceptor of electrons in oxidative phosphorylation and photophosphorylation.
- b) What are lectins? What is their biological significance?
- c) What are the different methods of enzyme immobilization?
- d) What is the principle of polyacrylamide gel electrophoresis?
- e) How is HFCS prepared?
- f) Differentiate between phospholipid and glycolipid.
- g) What are monomeric and oligomeric proteins?

Q.5 Attempt any **TWO** of the following: **(10)**

- a) Discuss ion – exchange Chromatography and its applications.
- b) Describe the process of synthetic penicillin production.
- c) Describe enzyme kinetics with a suitable graph.

Q.6 Write shot notes on any **TWO** of the following: **(10)**

- a) Affinity chromatography
- b) Application of immobilized enzymes
- c) Western blotting

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