

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

SUBJECT: BIOLOGICAL CHEMISTRY

Day : Tuesday
Date : 07/11/2017

W-2017-0965

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 **SEPARATE** answer books.

SECTION – I

- Q.1** Answer the following: [06]
- a) Describe the structure of starch and cellulose in details. [06]
- OR**
- a) What are polyunsaturated fatty acids? What is their biological significance? [04]
 - b) Describe the anapleurotic reactions of TCA cycle. [04]
- Q.2** Answer **ANY TWO** of the following: [08]
- a) Distinguish between active site and binding site of an enzyme.
 - b) Write note on factors stabilizing and de-stabilizing structure of proteins.
 - c) What are regulatory enzymes? What are the different types of enzyme regulation?
- Q.3** Answer the following: [12]
- a) What is ethanol sensitivity? How does the K_m of enzyme alcohol dehydrogenase relate to this sensitivity?
 - b) Write a note on feeder pathway for other sugars (besides Glucose).
 - c) What is Gluconeogenesis? What are the important reactions?
 - d) Write a note on significance of Transketolase enzyme.

SECTION – II

- Q.4** Answer the following: [06]
- a) Describe the reactions of Glycolysis and give an account of the energy produced. [06]
- OR**
- a) Describe the breakdown of a polyunsaturated fatty acid in brief with a suitable example.
 - b) Describe the regulation of TCA cycle. [04]
- Q.5** Answer **ANY TWO** of the following: [08]
- a) What is enzyme inhibition? Describe feed-back inhibition.
 - b) Write a note on non-cyclic photophosphorylation.
 - c) Write a note on hormonal regulation of Glycolysis.
- Q.6** Answer the following: [12]
- a) What is Galactose toxicity?
 - b) What do you understand by reducing and non-reducing end of a polysaccharide?
 - c) What is de-naturation and re-naturation of a protein?
 - d) What are uncommon amino acids? What is their biological significance? (Give two suitable examples).
 - e) Draw the structures of:
i) Phenylalanine ii) Lysine iii) Aspartic acid iv) Methionine
 - f) Name the monomers of :
i) Chitin ii) Glycogen iii) Peptidoglycan iv) Cellulose
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