

BACHELOR OF SCIENCE (BIOTECHNOLOGY) (CBCS - 2015 COURSE)
S.Y.B.Sc. (Biotech) Sem-III : WINTER :- 2021
SUBJECT: BIOCHEMISTRY-II

Day : Thursday
Date 27-01-2022

W-13231-2021

Time : 02:00 PM-05:00 PM
Max. Marks: 60

N.B.:

- 1) **Q. No. 1 and Q. No. 5 are COMPULSORY.**
- 2) Attempt **ANY TWO** remaining questions from **Q. No.2, 3, 4** in Section- I.
- 3) Attempt **ANY TWO** remaining questions from **Q. No. 6, 7, 8** in Section- II.
- 4) Answer section I and II in **SEPARATE** answer books
- 5) Draw neat structures and diagrams wherever necessary.

SECTION-I

- Q.1** Answer Any **FIVE** of the following questions in brief: **[10]**
- a) Name two inhibitors of Electron Transport Chain.
 - b) Give two features of enzyme active site.
 - c) Write Machalis- Menten rate equation for enzyme kinetics.
 - d) Name any two inborn errors of amino acid metabolism.
 - e) Enlist different types of enzyme inhibitors.
 - f) What are spontaneous and non-spontaneous reactions?
- Q.2** Answer the following questions **[10]**
- a) What are enzymes? Elaborate on the factors affecting enzyme activity.
 - b) Explain the glycolysis pathway. Add a note on the energetics of the pathway.
- Q.3** Explain the following: **[10]**
- a) Describe the various reactions of TCA cycle.
 - b) Define high- energy compounds. Explain the structure of ATP and the amount of energy release from one molecule of ATP.
- Q.4** Answer the following: **[10]**
- a) State the second Law of Thermodynamics. Explain how it is obeyed in biological system.
 - b) Differentiate between competitive and non-competitive inhibitors.

SECTION-II

- Q.5** Answer the following: **[10]**
- a) Describe nitrogen cycle briefly.
 - b) Explain the Electron Transport Chain giving the enzymes present in it.
- Q.6** Answer in brief: **[10]**
- a) Explain β - oxidation of any saturated fatty acid.
 - b) What is the difference between gluconeogenesis and glycolysis?
- Q.7** Write short notes on the following: **[10]**
- a) Feed- back inhibition.
 - b) Enzyme as a biocatalyst.
- Q.8** Answer the following: **[10]**
- a) Describe the Calvin cycle in plants.
 - b) What are Ketone bodies? Explain their diagnostic significance.

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