

**S. Y. B. Sc. (Biotechnology) SEM – III (CBCS - 2015 COURSE) :
WINTER - 2018**

Subject: Biochemistry-II

Day: Wednesday
Date: 24/10/2018

W-2018-1175

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

N.B.:

- 1) Q1 and Q5 are compulsory.
- 2) Answer ANY TWO questions from Q 2, 3, 4 in Section I.
- 3) Answer ANY TWO questions from Q 6, 7, 8 in Section II.
- 4) Answers to Both the sections to be written in SEPARATE answer books.
- 5) Draw a labeled diagram WHEREVER necessary.

SECTION - 01

Q.1) Answer the following: (ANY FIVE) (2 Marks X 5 = 10)

- a) What is the importance of acetate in metabolism?
- b) What do you mean by “therapeutic enzyme”?
- c) Which factors destroy the enzyme’s activity?
- d) Name the high energy molecules in a living organism.
- e) Name the components of electron transport chain.
- f) What happens to pyruvate under aerobic and anaerobic conditions?

Q.2) Answer the following: (5 Marks X 2 = 10)

- a) Emphasize the importance of acetate as a precursor molecule in metabolism.
- b) Explain the effect of substrate concentration on enzyme activity with the help of a graph. How is K_m and V_{max} affected by a competitive inhibitor?

Q.3) Explain the following: (5 Marks X 2 = 10)

- a) Theory of enzyme-substrate binding.
- b) Regeneration of NAD from NADH under anaerobic conditions.

Q.4) Write short notes on the following: (5 Marks X 2 = 10)

- a) Michaelis- Menten equation
- b) C3 and C4 plants

SECTION - 02

Q.5) Answer the following: (ANY FIVE) (2 Marks X 5 = 10)

- a) What is Ubiquinone? What is its function?
- b) Give the three types of electron transfer methods that occur in oxidative phosphorylation.
- c) What does the cell do with the excess fatty acids?
- d) Name the hormones that induce and inhibit lipolysis.
- e) What is the use of the carbon skeleton of protein after the removal of amino groups?
- f) What is pyridoxal phosphate? What is its significance in nitrogen metabolism?

Q.6) Answer the following: (5 Marks X 2 = 10)

- a) Describe what happens in ‘Dark Reaction’.
- b) Describe the reactions of the urea cycle that occur in the cytoplasm.

Q.7) Explain the following: (5 Marks X 2 = 10)

- a) Chemiosmosis
- b) β -oxidation of saturated fatty acids

Q.8) Write short notes on the following: (5 Marks X 2 = 10)

- a) Inducers and inhibitors of lipolysis.
- b) Trans-amination reaction.
