

**S. Y. B. Sc. (Biotechnology) SEM – III (CBCS - 2015 COURSE) :  
SUMMER - 2019**

**Subject: Biochemistry-II**

Day: Thursday  
Date: 04/04/2019

**S-2019-1377**

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

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**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 '**SAME**' answer books.
  - 5) Draw a labeled diagram WHEREVER necessary.
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**SECTION - 01**

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

- a) State the first law of thermodynamics.
- b) How is maximum velocity of enzyme affected in competitive and non-competitive inhibition?
- c) What do you understand by anabolism?
- d) What are the co-factors of an enzyme?
- e) Which enzymes catalyze the 3 irreversible reactions in glycolysis?
- f) Name the components of electron transport chain.

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

- a) Explain how an enzyme catalyzed reaction proceeds with the help of its energy diagram.
- b) Enzymatic regulation of glycolysis.

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

- a) Allosteric regulation of enzyme.
- b) Describe briefly how enzymes are classified on the basis of the reaction they catalyze.

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

- a) Diagnostic enzyme
- b) TCA Cycle

**SECTION - 02**

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

- a) What is glycogenolysis?
- b) Name the process that enables some cells to produce ATP without the help of oxygen.
- c) How does Micelle formation help for lipid metabolism?
- d) What do you mean by 'ammonotelic' and 'ureotelic' organisms?
- e) What is the fate of glycerol formed by lipolysis?
- f) Name the molecule that marks proteins for degradation. Where are they degraded?

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

- a) How is Ribulose-Bisphosphate (RuBP) regenerated in Calvin Cycle?
- b) Describe how lipids are transported across the mitochondria for breakdown?

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

- a) The terms Autotrophs, Photo-autotrophs, Chemoautotrophs and Heterotrophs.
- b) How are dietary fats absorbed in the small intestine?

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

- a) Pyridoxal phosphate as an important co-enzyme in amino acid metabolism.
- b) Ammonia toxicity

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