



RM-3807

**M. Sc. (Sem. IV) (Biotechnology)  
(Regular) Examination**

May / June - 2010

**IBT 401 : Biochemistry - III**  
(New Course)

Time : 3 Hours]

[Total Marks : 70

**Instructions :**

(1)

नीचे दृश्यावलि निशानीवाणी विगतो उत्तरवडी पर अवश्य लभवी.  
Fillup strictly the details of signs on your answer book.

Name of the Examination :  
**M. Sc. (Sem. 4) (Biotechnology) (Regular)**

Name of the Subject :  
**IBT 401 : Biochemistry - 3**

Subject Code No. : **3 8 0 7** Section No. (1, 2,.....) : **1&2**

Seat No. :

Student's Signature

- (2) Figures to the **right** indicate full marks of the question.  
(3) Draw neat and labeled diagrams whenever **necessary**.  
(4) Both sections must be written in **separate** answer books.

**SECTION I**

- Q.1 Answer the following: - (05)  
1. Define cofactors.  
2. Which enzyme has highest turnover number?  
3. Mention some activated carriers in metabolism.  
4. Write significance of NAD<sup>+</sup> and NADP<sup>+</sup>.  
5. Define constitutive enzymes.
- Q.2 Give structures of ten metabolite precursors. (10)

**OR**

- Q.2 Describe the following: -  
(a). Explain role of ATP in metabolism. (06)  
(b). IUB classification of enzymes. (04)
- Q.3 Describe lock & key model of enzyme action. Compare it with induced fit mechanism. (10)

**OR**

- Q.3 Describe the following: -  
(a) Effect of temperature and pH on enzyme activity. (04)  
(b) Isotopic labeling to study biochemical pathways. (06)
- Q.4 Write brief Notes on Following: - (Any TWO) (05 x 02 = 10) (10)  
(a) Allosteric enzymes.  
(b) Graphical representation of M.M equation.  
(c) Integration of metabolic pathways at cellular level.  
(d) Salient features of enzymes.

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[Contd...

**SECTION II**

- Q.1 Answer the following Questions: - (05)
- 1 Define formimino group.
  - 2 What is GABA?
  - 3 What is the payoff phase?
  - 4 What is carnitine shuttle?
  - 5 Define fermentation.
- Q.2 Describe: - (05)
- (a) Regulation of glycolysis at PFK-1. (05)
  - (b) TCA cycle and its regulation. (05)
- OR**
- Q.2 Describe: - (04)
- (a) Significance of pentose phosphate pathway. (04)
  - (b) Synthesis of Palmitic acid. (06)
- Q.3 Describe in detail gluconeogenesis. (10)
- OR**
- Q.3 Explain at length beta oxidation of fatty acid. (10)
- Q.4 Explain in detail synthesis of glutamate family. (10)
- OR**
- Q.4 Describe:- (05)
- (a). Biosynthesis of Histidine. (05)
  - (b). Significance of NADPH. (05)
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