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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)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
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^+ and $NADP^+$.
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.

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: -

(a) Regulation of glycolysis at PFK-1. **(05)**

(b) TCA cycle and its regulation. **(05)**

OR

Q.2 Describe: -

(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:-

(a). Biosynthesis of Histidine. **(05)**

(b). Significance of NADPH. **(05)**