Exam.Code:0440
Sub. Code: 25964

2056

M.Sc. (Bio-Informatics) Second Semester

MBIN-8011: Metabolic Pathway Analysis

Time allowed: 3 Hours

Max. Marks: 60

NOTE: *Attempt five questions in all, including Question No. I which is compulsory and selecting atleast one question from each Unit.*

x-x-x

I. Answer the following:-

a) Briefly explain metabolic control.

b) Define Km & Vmax.

c) Compare and contrast EcoCyc & MetaCyc.

d) Give an example of mixed inhibition.

e) Briefly discuss enzyme nomenclature.

f) State the transition state theory.

g) What is oxidative phosphorylation?

h) How are allosteric enzymes regulated? (8x1½)

UNIT - I

II. a) Discuss regulation of rate determining enzyme of glycolysis.

b) What are the characteristics of metabolic pathways? (8+4)

III. a) Discuss catabolic reactions of glycogen and its regulations.

b) Compare and contrast alcoholic and lactic acid fermentation. (8+4)

UNIT - II

IV. a) How is aspartate transcarbamylase regulated?

b) Discuss analysis of kinetic data. (2x6)

V. a) Give the derivation of Michaelis-Menten equation.

b) Write a note on overview of enzyme kinetics. (8,4)

P.T.O.

UNIT - III

VI. a) Explain metabolic flux analysis and discuss any one method for its experimental determination.

b) Write a note on enzyme databases. (8,4)

VII. a) Discuss the association of bioinformatics and metabolic engineering.

b) What are the applications of metabolic flux analysis? (2x6)

x-x-x