Exam Code: 0440
Sub. Code: 3016

1056

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. Attempt the following:-
a) What is Oxidative phosphorylation?
b) Name the regulatory enzyme for glycogen breakdown?
c) Explain the terms Km and Vmax.
d) What is mixed inhibition?
e) Explain the use of Metacyc.
f) Explain transition state theory.
g) What are holoenzymes?.
h) What are the applications of LIGAND. (8x1½)

UNIT – I

II. Describe the TCA cycle and indicate the sites for ATP synthesis. (12)

III. a) Discuss the why ATP is the high energy compound.
b) Describe in detail fermentation. (6,6)

UNIT – II

IV. a) Describe the properties of allosteric enzyme and their significance using aspartate transcarbomylase as an example.

b) Describe competitive inhibition with example. (6,6)

V. a) Discuss the role of coenzyme in enzyme catalysis.
b) Describe Michaelis-Menton equation. Discuss its significance. (6,6)

UNIT – III

VI. a) Discuss the methods for methods for metabolic control analysis.
b) Discuss the importance of KEGG database. (6,6)

VII. a) Describe the applications of metabolic flux analysis.
b) Discuss in detail about BRENDA and its applications. (6,6)

x-x-x