Exam.Code:0435
Sub. Code: 3466

2031

M. Sc. (Biotechnology) First Semester

MBIO-102: Biomolecules

Time allowed: 3 Hours Max. Marks: 80

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

x-x-x

I. a) Explain briefly the following:

i) Heteropolysaccharides

ii) Molecular chaperons

iii) Terpenes

iv) Nucleotide (4x1½)

b) Draw the structures of:

i) Sucrose

ii) Alanine-Glycine-Serine tripeptide

iii) Arachidonic acid

iv) Adenine (4x1½)

c) What do you understand by:

i) Anomers

ii) Quaternary structure of proteins

iii) Waxes

iv) Tm of DNA (4x1)

UNIT – I

II. a) Explain the process of glycogenolysis along with its regulation.

b) Write in detail about the Cori cycle. (10,6)

III. a) Describe the HMP pathways and give its significance.

b) Give reactions of Kreb's cycle leading to production of reducing power. (10,6)

UNIT – II

IV. a) Explain the structure and function of Hemoglobin.

P.T.O.

b) Explain the classification of proteins according to their biological functions. (2x8)

V. a) Discuss the secondary structure of proteins in detail.

b). Elaborate in detail about Ramachandran plot. (2x8)

UNIT – III

VI. a) Delineate the process of β-oxidation for oxidation of oleic acid.

b) Write a short note on phospholipids. (10,6)

VII. a) Explain the structure and function of sphingolipids and prostaglandins.

b) Discuss the role of acyl carnitine in fatty acid transport. (10,6)

UNIT – IV

VIII. a) Explain salvage pathway for nucleotide biosynthesis.

b) Describe the Watson and Crick model of DNA with the help of diagram. (2x8)

IX. a) Give detail of the experimental work which gave evidence that nucleic acid is genetic material.

b) Briefly discuss the various forms of DNA. (10,6)

x-x-x