

2021
B.E. (Bio-Technology) Third Semester
BIO-313: Biochemistry

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.

x-x-x

I. Attempt the following:-

- a) Write the structures and coenzyme forms of Folic acid (2)
- b) Write the structures and names of acidic amino acids. (2)
- c) Write the structures and names of two hydrophobic amino acids. (2)
- d) Write the three alphabet notation of cysteine and asparagine (1)
- e) Write the molecular structure of a polymer consisting of hexose sugar and amino acids. (2)
- f) Write the general reaction of deamination? (1)

UNIT – I

- II. a) Describe in detail various secondary structures existing in nature. Also describe their functional aspects.
b) Which amino acids are responsible for absorption of UV light? How these are utilised in analytical techniques (6,4)
- III. a) Describe TCA cycle in detail with structures and enzymes involved. What are the Intermediates formed and how these are replenished?
b) Write the structure and functions of chitin? (8,2)
- IV. a) Describe Watson and Crick model of DNA with illustrations.
b) Discuss the three variants of double helical DNA?
c) Write the structures and functions of
 - i) Glycosphingolipids
 - ii) Phospholipids (4,3,3)

P.T.O.

(2)

UNIT – II

- V. a) Describe the metabolic pathway of fatty acid biosynthesis with structures.
b) Also describe fatty acid synthase complex. (7,3)
- VI. a) Describe the pathway of purine biosynthesis.
b) Write the reaction of transamination of amino acids (7,3)
- VII. a) Describe Electron transport chain in detail.
b) Write the reactions of Nitrogen fixation and its enzyme. (7,3)

x-x-x