

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) Name one aromatic and one branched chain amino acid each.
- b) What are polysaturated fatty acids ?
- c) Define "Salting in and Salting out".
- d) Name water soluble vitamins.
- e) What are anaplerotic reactions?
- f) Difference between C3 and C4 plants is _____
- g) What is oxidative deamination?
- h) What is a respiratory chain? Where does it exist?
- i) What are ketone bodies?
- j) What are the different steps of Nitrogen fixation? (10x1)

UNIT - I

- II. a) What are the different classes of Lipids? Give examples of each with structures.
b) Discuss the TCA cycle and its regulation. (5,5)
- III. a) Write notes on:-
 - (i) Purification of proteins
 - (ii) Levels of organization of proteins.b) Discuss glycogenesis and glycygenolysis. (5,5)
- IV. a) Discuss the Sanger's method and its role in identifying protein sequence.
b) Write notes on: -
 - (i) Biological roles of water soluble vitamins
 - (ii) Ribonucleic acids (5,5)

P.T.O.

(2)

UNIT - II

- V. a) Energy transactions of a cell are assisted by specialized processes in mitochondria and chloroplasts. Discuss.
b) Write notes on:-
(i) isomers and microbes
(ii) *de novo* & salvage pathway (5,5)
- VI. a) Write notes on:-
(i) Nitrogen fixation
(ii) Oxidative phosphorylation
b) The enzyme, Fatty acid synthase is a special enzyme. Discuss its composition and its significance. (5,5)
- VII. a) Urea cycle occurs in which organelle(s) of the cell? Discuss the cycle and its importance.
b) What is photosynthesis? Describe this process in detail. (5,5)

x-x-x