

2074

**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. I which is compulsory and selecting two questions from each Section.

X-X-X

Q.1. Answer the following:

(1x10=10)

- (i) Name one acidic and one basic amino acid each.
- (ii) What are saturated and unsaturated fatty acids ?
- (iii) How do enzymes function as catalysts?
- (iv) Enlist two differences between RNA and DNA.
- (v) Why is Krebs cycle referred to as amphibolic?
- (vi) Aerobic glycolysis generates _____ and anaerobic glycolysis generates _____.
- (vii) Transamination is different from Deamination because _____
- (viii) Why is salvage pathway used by a system?
- (ix) What are ketone bodies?
- (x) The light and dark reactions are associated with which part/ organelle in plants?

Section A

Q.2.(a) What are the different classes of carbohydrates? Give examples of each with structures.

(b) Discuss the Kreb's cycle and its regulation. (5,5)

Q.3. (a) Write notes on: (i) vitamins (ii) Isolation and purification of proteins

(b) The synthesis of glycogen and its breakdown are tightly regulated. Justify the comment. (5,5)

Q.4. (a) Describe the method of amino acid sequence determination.

(b) Write notes on: (i) levels of organization of Proteins (ii) Glycolysis (5,5)

Section B

Q.5. (a) Highlight the role of mitochondria and chloroplasts in energy transactions of a cell.

(b) Discuss (i) Nitrogen fixation (ii) oxidative phosphorylation (5,5)

Q.6.(a) Write notes on: (i) Structure of DNA (ii) *de novo* & salvage pathway

(b) Discuss the photosynthesis process in plants. (5,5)

Q.7. (a) Describe the Urea cycle. Why is this cycle important?

(b) How are triacyl glycerides synthesized? Discuss the structure and role of Fatty acid synthase. (5,5)

X-X-X