

(3 hours)

Total Marks: 70

N.B.: All questions are compulsory

- Q1a. Draw structure using Haworth projection formula for  $\alpha$ -D-fructose 1
- b. Draw structure using Fisher projection formula for D- Arabinose 1
- c. Define metabolism 1
- d. Give name and draw the structure of any one acidic amino acid with one three letter code 1
- e. Draw structure any one phospholipid 1
- f. Draw the structure of coenzyme form of pyridoxine 1
- g. Scurvy is caused due to the deficiency of..... 1
- h. Name a Thymidylate synthase inhibitor 1
- i. Note the changes in  $K_m$  and  $V_{max}$  values during the competitive inhibition of enzyme 1
- j. Define epimer and draw structure of C2 epimer of glucose 2
- k. Explain in brief compartmentation strategy for regulation of enzyme activity 2
- l. Explain the effect of temperature on enzyme activity 2
- Q 2a. Give detail account on  $\beta$ -plated structure of protein 3
- b. Explain effect of substrate concentration on enzyme activity 3
- c. 'ATP is considered as energy rich molecule' comment 3
- d. Write note on digestion of carbohydrate 2
- Q3a. Compare glycogen and cellulose in terms of structure and function 3
- b. Explain biochemical role of Nicotinamide or Riboflavin 3
- c. Describe multiple cascade system for regulation of enzyme activity 3
- d. Enumerate silent features for digestion and absorption of proteins 2
- Q4a. Classify amino acids based on chemical nature with example (structures not required) 3
- b. Write a note on triacylglycerides 3
- c. Explain biochemical Function of Pantothenic acid or folic acid 3
- d. Explain energetically unfavourable reaction 2
- Q5a. Explain Non- competitive inhibition using Michelis Menten and Lineweaver Burk plot 3
- b. Explain biochemical role of Biotin or Ascorbic acid 3
- c. Discuss the first and second law of thermodynamics 3
- d. Write a short note on denaturation of protein 2

Turn Over

- Q6a. Explain in detail Vitamin-D or Vitamin-K 3
- b. Write reaction catalysed and name of an inhibitor for the following enzymes (Any Two) 3
  - i. HMG CoA reductase ii. DNA polymerase iii. Monoamine oxidase.
- c. Write detail classification of carbohydrate with examples of each class (Structures not required) 3
- d. Write note on rancidity of fat or oil 2

-----