

(3 Hours)

Total Marks: 80

N.B.: All questions are compulsory

- Q. 1 a) Draw the structure of  $\alpha$ -D galactose by using Haworth projection formula 1
- b) Draw the structure of D-xylose by using Fischer projection formula 1
- c) Give name and three letter code of an amino acid containing aromatic ring 1
- d) Explain metabolism with example. 1
- e) Define Vitamins and enlist water soluble Vitamins 1
- f) Define mutarotation 1
- g) Name the pyrimidine nitrogenous bases 1
- h) Name and write the structure of coenzyme form of Vitamin B<sub>2</sub> 1
- i) Write the structure of sucrose 1
- j) Draw the structure of palmitic acid 1
- k) Draw structure of GTP 1
- l) Deficiency of Vitamin –A leads to..... 1
- m) Give the name and structure of amino acids containing amide linkage 2
- n) Differentiate maltose and sucrose 2
- o) Explain the  $\alpha$ -helix structure of proteins 2
- p) Explain epimers with suitable example 2
- Q. 2 a) Explain the secondary structure of proteins 3
- b) Write a note on biochemical role of Vitamin B<sub>6</sub> 3
- c) Explain ATP as energy carrier 3
- d) Write a note on nucleotides 2
- e) Enumerate silent features of digestion of proteins 1

- Q. 3 a) Write a note on Starch 3
- b) Differentiate DNA and RNA 3
- c) Write a note on biochemical role of Vitamin- E or Vitamin K 3
- d) Explain standard free energy and transformed free energy 2
- e) Comment on conversion of glucose to energy in RBCs 1
- Q. 4a) Classify amino acids based on their structures with examples (No structures required) 3
- b) Write a note on Phospholipids or Lipoproteins 3
- c) Discuss the biochemical role B-9 3
- d) Explain melting and annealing of DNA 2
- e) State second law of thermodynamics 1
- Q. 5 a) Write a note on polysaccharides 3
- b) Write detail classification of carbohydrates with examples of each class (Structure not required) 3
- c) Write a note on Ascorbic acid or Vitamin B7 3
- d) Draw the structure of Arachidonic acid 2
- e) Give the salient features of digestion of lipid 1
- Q. 6 a) Write note on Double Helix structure of DNA 3
- b) Write a note on biological role of Vitamin K 3
- c) Write note on Triglycerides 2
- d) Differentiate between fats and oils 2
- e) Define Acid value and Iodine value 2
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