[59/A-20] **Seat No :**_____ **No. of Printed Pages: 02**

Sardar Patel University

B.Sc (Third Semester)

US03CBCH01 (Biochemistry of biomolecules-1)

Date :25/11/19 , Monday **Total Marks: 70**

Time :2:00 to 5:00 PM

Note :

1) Figures to the rights indicate marks
2) Draw neat and labeled diagram wherever necessary

Q.1 Multiple Choice Questions **[10]**

1) Which of the following is a polymer of glucose ?
- **a.** Chitin
- **b.** Pectin
- **c.** Starch
- **d.** Heparin

2) Which carbohydrate remains undigested in human body ?
- **a.** Cellulose
- **b.** Sucrose
- **c.** Lactose
- **d.** Starch

3) Mutarotation involves change in_____
- **a.** Chemical properties
- **b.** Optical rotation
- **c.** Conductance
- **d.** p^H

4) The bond by which two amino acids join together is _____
- **a.** Glycosidic bond
- **b.** Phosphodiester bond
- **c.** Peptide bond
- **d.** Hydrogen bond

5) Which of these amino acids contain sulphur ?
- **a.** Tyrosine
- **b.** Cysteine
- **c.** Proline
- **d.** Lysine

6) Which of these base is not present in DNA ?
- **a.** Uracil
- **b.** Thymine
- **c.** Adenine
- **d.** Cytosine

7) The number of base pairs in one complete turn of A-DNA helix is
- **a.** 10
- **b.** 11
- **c.** 12
- **d.** 14

8) Which of these minerals is an essential component of DNA and RNA ?
- **a.** Sodium
- **b.** Calcium
- **c.** Iodine
- **d.** Phosphorus

9) Intake of phosphorus is associated with _____
- **a.** Iodine
- **b.** Iron
- **c.** Sodium
- **d.** Calcium

10) Which of these mineral is added to common salt ?
- **a.** Calcium
- **b.** Manganese
- **c.** Iron
- **d.** Iodine

(P.T.O)

Q.2 **Answer the following questions (Attempt any TEN)** **[20]**

1) Why is Sucrose known as Invert sugar ? Briefly explain.
2) Write biological functions of carbohydrates.
3) Define and give examples of: (i) Enantiomers (ii) Epimers
4) What is an isoelectric p^H ? Explain briefly.
5) Discuss about reaction of amino acids with Ninhydrin and write its significance.
6) What are essential amino acids ? Give examples.
7) Draw structures of : (i) UMP (ii) TMP
8) What is Tm value? Explain.
9) Write about phosphodiester bond.
10) Give an account of classification of minerals.
11) Write sources and RDA of Iron and Iodine.
12) Discuss the biochemical functions of Sodium.

Q.3 Give the classification of carbohydrates. **[10]**

OR

Q.3 a) Write a note on structure and biological significance of Maltose. **[05]**
b) What is asymmetric centre in monosaccharides ? Explain epimers and anomers. **[05]**

Q.4 Discuss classification of amino acids based on structure of R-group. **[10]**

OR

Q.4 a) Write a note on reaction of amino acid with Dansyl Chloride. **[05]**
b) Write a note on non standard amino acids. **[05]**

Q.5 a) Give an account on different forms of DNA. **[06]**
b) Write a note on DNA supercoiling. **[04]**

OR

Q.5 a) Write about CoT value. **[06]**
b) What do you know about purine nitrogenous base. **[04]**

Q.6 Discuss food sources, RDA and biochemical significance of : (i) Calcium and (ii) Iron. **[10]**

OR

Q.6 Discuss food sources, RDA and biochemical functions of : (i) Sodium and (ii) Phosphorus. **[10]**

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