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SARDAR PATEL UNIVERSITY

B.Sc. – III Semester Examination-2013

Tuesday, 19th November

02.30 p.m. to 05.30 p.m.

Subject Code: US03CBCH01

(Biochemistry Of Biomolecules -1)

Total Marks: 70

Note: Answers to all the questions (including multiple choice questions) should be written in the provided answer book only

Q1. Choose the correct option and write it in the answer sheet: **[10]**

1) Which of the following is a polymer of glucose?

a) Chitin **b)** Pectin **c)** Starch **d)** Heparin

2) Mutarotation involves change in _____.

a) Chemical properties **b)** Optical rotation **c)** Conductance **d)** pH

3) Which of these amino acids does not have an asymmetric carbon?

a) Alanine **b)** Tryptophan **c)** Glycine **d)** Serine

4) Which of these amino acids contain sulphur?

a) Tyrosine **b)** Cysteine **c)** Proline **d)** Lysine

5) Which of these bonds join the nitrogenous bases in DNA?

a) Glycosidic bond **b)** Hydrogen bond

c) Phosphodiester bond **d)** Peptide bond

6) The number of base pairs in one complete turn of A- DNA helix is _____.

a) 10 **b)** 11 **c)** 12 **d)** 14

7) Intake of phosphorus is associated with _____.

a) Sodium **b)** Iron **c)** Iodine **d)** Calcium

8) Which of these mineral is added to common salt?

a) Calcium **b)** Manganese **c)** Iron **d)** Iodine

9) Which of these base is not present in DNA?

a) Uracil **b)** Thymine **c)** Adenine **d)** Cytosine

10) The stored carbohydrate in human body is _____.

a) Starch **b)** Glycogen **c)** Glucose **d)** Inulin

Contd...

Q2. Answer the following (any ten): **[20]**

1) Write about optical activity of carbohydrates.
2) Define: (i) Chiral carbon (ii) Epimers
3) Sucrose is known as invert sugar. Why?
4) What is isoelectric pH? Briefly explain.
5) What are essential amino acids? Give examples.
6) Write about Edman's reaction.
7) Draw structures of: (i) UMP (ii) dAMP
8) Write about phosphodiester bond.
9) What is Tm value of DMA?
10) What are microminerals?
11) Write sources and RDA of Iron and Iodine.
12) Write about the biochemical significance of Chlorine.

Q3. **(a)** Write a note on Osazone formation in carbohydrates. **[05]**
(b) Write a note on structure and biological significance of Maltose. **[05]**

OR

Q3. **(a)** Explain the phenomenon of Mutarotation in carbohydrates. **[05]**
(b) Write short notes on: (i) Enolization (ii) Enantiomers **[05]**

Q4. Discuss classification of amino acids based on structure of R-group. **[10]**

OR

Q4. Write a detailed note on titration curve of Glycine. **[10]**

Q5. **(a)** Draw double helical structure of DNA and write its characteristics. **[06]**
(b) Write a note on purine nitrogenous bases. **[04]**

OR

Q5. **(a)** Discuss different forms of DNA. **[06]**
(b) Write a note on DNA supercoilling. **[04]**

Q6. Discuss food sources, RDA and biochemical significance of:
(a) Calcium **[07]**
(b) Sodium **[03]**

OR

Q6. Discuss food sources, RDA and functions of:
(a) Phosphorus **[07]**
(b) Manganese **[03]**

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