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Sardar Patel University**M. Sc. Integrated Biotechnology Examination, Third Semester****Saturday, 1st December, 2012****2:30 p.m. to 5:30 p.m.****Subject: Biochemistry – I (PS03CIGB02)****Total Marks: 70**

Notes: - 1) Figures to the right indicate marks.

2) Draw neat and labeled diagram, wherever necessary.

Q.1 Choose the Correct Answers of the Following.

[08]

- Lactose and Maltose are _____.
a) Monosaccharide b) Disaccharide c) Both d) None
- The bond present between two monosaccharide unit is _____.
(a) Glycosidic (b) Electrostatic (c) Hydrogen (d) Peptide
- Which of them is a carbohydrate _____.
a) Glucose b) Galactose c) Fructose d) All
- Myristic acid is a _____.
a) Saturated fatty acid b) Unsaturated fatty acid c) Amino acid d) Nucleic acid
- Among the following which is an optically inactive amino acid _____.
(a) Glycine (b) Alanine (c) Valine (d) Proline
- What type of bond holds each amino acid together in a long chain?
(a) Disulfide (b) Electrostatic (c) Hydrogen (d) Peptide
- The number of base pairs present in each turn of B-form of DNA helix
(a) 9 (b) 10 (c) 11 (d) 12
- Adenine is _____.
(a) 6-Amino purine (b) 2-Amino-6-oxypurine
(c) 2-Oxy-4-aminopyrimidine (d) 2, 4-Dioxypyrimidine

Q.2 Answer the following in short. (Attempt Any Seven)

[14]

- Explain the distribution of C, H, O, N, P and S in different biomolecules.
- Draw the structure of glucose, lactose, cellulose and fructose.
- What are epimers?
- Define saturated and unsaturated fatty acids?
- Draw the structure of Lecithine, Lauric acid, TAG and oleic acid
- What is zwitterion? Depicted with suitable diagrams.
- Enlist the functional classification of proteins with examples.
- Write down about acidic amino acids and their amides.
- Draw the structure of ATP.

Q.3 (A) Write a note on different types of biomolecules. [06]

(B) Explain the types of bonds involved in the formation of different biomolecules. [06]

OR

(B) Explain the general properties of different biomolecules. [06]

Q.4 (A) Give a detail account on isomers of carbohydrates. [06]

(B) Write a detail note on "Classification of carbohydrate" [06]

OR

(B) Explain the reaction in detail:
i) Formation of osazone [06]

ii) Formation of furfural and hydroxyl furfural

Q.5 (A) Describe the secondary structure of protein with suitable diagrams. [06]

(B) What is titration curve of amino acids? Explain with suitable example. [06]

OR

(B) Write a note on Denaturation of protein. [06]

Q.6 (A) Explain "Double helix structure of DNA". [06]

(B) Enlist the various functions of phospholipids. [06]

OR

(B) Write a brief note on cholesterol. [06]
