



JBD-1603120102010100 Seat No. _____

M. Sc. (Biochemistry) (Sem. I) (CBCS) Examination

December - 2019

CBC - 1 : Fundamentals of Biochemistry

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

1 Answer briefly any **seven** of the following questions : **14**

- (1) Explain molarity and molality.
- (2) What is a titration curve?
- (3) Explain system and surrounding in thermodynamics.
- (4) What is electromotive force?
- (5) What are essential amino acids? Give examples.
- (6) Describe the phenomenon of hyperchromic shift.
- (7) Why trehalose is not a reducing sugar?
- (8) Define - Disaccharides with examples.
- (9) What are prostaglandins? Explain briefly.
- (10) What are stereoisomers? Give one example.

2 Answer any **two** of the following questions : **14**

- (1) Write a note on properties of aqueous solutions.
- (2) Explain the different types of chemical bonds.
- (3) Derive the Henderson Hesselbalch equation for measurement of pH.

3 (1) Write a note on structure and role of different types of RNA. **7**

(2) Give the classification of amino acids based on the properties of their R groups. **7**

OR

3 (1) Give the experiment that proved that DNA stores the genetic information **7**

(2) What is protein secondary structure? Discuss the two most prominent conformations α helix and β sheets. **7**

- 4 Answer the following questions : 14
- (1) Explain the thermodynamic quantities-Gibbs free energy, Enthalpy and Entropy along with the relationship between them.
 - (2) What is the chemical basis for the large free-energy change associated with ATP hydrolysis?
- 5 Answer the following questions : (Any Two) 14
- (1) Write a note on hexose derivatives.
 - (2) Discuss about the structure and functions of storage homopolysaccharides.
 - (3) Explain a detailed classification of lipoproteins.
 - (4) What are triglycerides and wax? Explain from structural and functional point of view.
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