



HEF-1603120102010100 Seat No. _____

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

November / December – 2017

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 Hydrogen bonds.
- (2) Give structures for -acidic amino acids.
- (3) Short note on osmolarity.
- (4) Explain T_m.
- (5) What are glycosidic bonds? Give example.
- (6) Short note on cholesterol.
- (7) What is hypochromic shift?
- (8) Explain reduction potential.
- (9) Why sucrose is not a reducing sugar?
- (10) What is electromotive force?

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

- (1) Explain in detail : Biological oxidation-reduction reactions.
- (2) State the difference between A, B and Z forms of DNA.
- (3) Explain in detail about Chemical bonds pertaining to strong and weak molecular interactions.

3 (1) Write a note on - different levels of protein structure. **7**
Write various forces that stabilize protein structure

(2) Describe classification of storage lipids with example. **7**

OR

(3) Explain in detail: How standard free-energy change **7**
is directly related to the equilibrium constant?

(4) What are Fisher and Howarth projections? Describe **7**
cyclization of Hexose sugars with two examples.

4 Answer the following questions : **14**

- (1) Explain in detail about saturated and unsaturated fatty acids.
- (2) How amino acids can act as acids and bases? Explain the titration curve of Glycine.

5 Answer the following questions : (any **two**) **14**

- (1) Explain the first and second law of Thermodynamics.
 - (2) Discuss with diagram the Hershey-Chase experiment.
 - (3) What is pH? Derive the Henderson 'Hasselbalch equation for measurement of pH.
 - (4) What are stereoisomers? Explain the three ways to represent the two stereoisomers of glyceraldehyde
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