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Total No. of Questions : 11

M.Sc. (Chemistry) (Sem.-3) BIOPHYSICAL CHEMISTRY Subject Code : CHL505A-18 M.Code : 76682 Date of Examination : 16-12-22

Time : 3 Hrs.

Max. Marks : 70

INSTRUCTIONS TO CANDIDATES :

- 1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
- 2. SECTION-B contains EIGHT questions carrying FIVE marks each and students have to attempt any SIX questions.
- 3. SECTION-C will comprise of two compulsory questions with internal choice in both these questions. Each question carries TEN marks.

SECTION-A

- 1. Write briefly :
 - a. Gibbs Free Energy
 - b. Configuration
 - c. Nucleotide
 - d. Circular Dichroism
 - e. Entropy
 - f. Ultra-centrifuge
 - g. pH
 - h. Fluorescence
 - i. Buffers
 - j. H-Bond.

SECTION-B

- 2. Discuss the effects of solutes on Colligative properties of solutions.
- 3. Discuss in brief the biological applications of an Ultracentrifuge.
- 4. Discuss in brief the reversible protein folding.
- 5. What are the factors that affect Sedimentation Velocity?
- 6. Draw a well labelled diagram of secondary structure of proteins.
- 7. Explain Standard Free Energy is additive in nature with an example.
- 8. What do you understand by Fluorescence? Discuss in brief.
- 9. Draw a chemical structure of ATP and discuss in brief.

SECTION-C

10. Discuss the relation between Standard Free Energy and Equilibrium Constant.

OR

Discuss structure of DNA along with a diagram.

11. Discuss the applications of Circular Dichroism in studying the proteins, nucleic acid and carbohydrates.

OR

Describe properties of water to make it an ideal solvent in biological systems.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.