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GD-609

M.Sc. 3rd Semester
Examination, Dec.-Jan., 2022-23

CHEMISTRY

Paper - II

Chemistry of Biomolecules

Time : Three Hours] [Maximum Marks : 80
[Minimum Pass Marks : 16

Note : Answer all questions. All questions carry equal marks.

Unit-I

- (a) What are cytochrome structurally? How they are involved in electron transfer in ETC?
- (b) Explain the structure and functions of myoglobin.

OR

- (a) Write short notes on the following :
 - Free energy changes in biochemical reactions
 - Synthesis of ATP from ADP
 - Hydrolysis reaction for ATP
- (b) Explain the structure and functions of haemocyanins.

Unit-II

- (a) What do you mean by metalloenzymes? Write notes on superoxide and carboxypeptidase.
- (b) Explain cyclodextrins-hosts as enzyme mimics.

OR

- (a) Discuss briefly the role of catalase and peroxidase with different catalytic properties.
- (b) Write the structure of calixarenes and explain selectivity of calixares for sodium cations.

Unit-III

- (a) Explain the different techniques of immobilization of enzymes.

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- (b) Write short notes on the following :
- (i) TPP
 - (ii) Application of immobilization enzymes in medicine and industry

OR

- (a) Explain the major classes of enzymes with examples.
- (b) Give structure and explain the biological functions of CoA-SH.

Unit-IV

4. (a) Discuss Ion transport through cell membrane.
- (b) Write notes on any two of the following :
- (i) Dispersion forces interactions
 - (ii) Thermodynamics of biopolymer solution
 - (iii) Hydrophobic forces

OR

- (a) Explain multiple equilibrium and various types of binding in biological system.

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- (b) Explain irreversible thermodynamics treatment of membrane transport and nerve conduction.