

M.Sc.(Chem.) Semester - 4 (CBCS) Examination
April/May-2022 (NEW COURSE)
Chemistry of Biomolecules(Elective-1)

Time: 2:30 Hours**Marks: 70****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate marks.

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| Q.1 (a) | Draw the structures; write names and provide three letter codes of Aromatic amino acids. | 4 Marks |
| Q.1 (b) | Answer any two question out of three. | 10 Marks |
| (1) | What do you mean by Isoelectric point? Explain different bonds involved in protein structure. | 5 |
| (2) | Explain the classification of Proteins. | 5 |
| (3) | Discuss properties of Amino acid. | 5 |
| Q.2 (a) | Diagrammatically describe types of Enzyme inhibitors. | 4 Marks |
| Q.2 (b) | Answer any two question out of three. | 10 Marks |
| (1) | Explain mechanism of Enzyme action (two types of enzyme model). | 5 |
| (2) | Discuss about structure and biological functions of Thiamine pyrophosphate. | 5 |
| (3) | Depict the structure and discuss biological functions of NADP+. | 5 |
| Q.3 (a) | Write a note on Denaturation and Renaturation of DNA. | 4 Marks |
| Q.3 (b) | Answer any two question out of three. | 10 Marks |
| (1) | Explain Chargaff's rule of base pairing of DNA and its calculation. | 5 |
| (2) | Draw the structure of RNA Nucleotides and Explain composition of nucleotides. | 5 |
| (3) | Draw and describe the structure and function of major types of RNA. | 5 |
| Q.4 (a) | Discuss rules of Nomenclature for Fatty acids. | 4 Marks |
| Q.4 (b) | Answer any two question out of three. | 10 Marks |
| (1) | Describe at least three functions that Lipids serve in plants and/or animals. | 5 |
| (2) | Provide structure and functions of cholesterol. | 5 |
| (3) | Describe the structure of Phospholipids and their role in cell membranes. | 5 |
| Q.5 (a) | Illustrate Fischer projection & D and L Notation for Sugars. | 4 Marks |
| Q.5 (b) | Answer any two question out of three. | 10 Marks |
| (1) | Draw the structures of Ketose sugars in chart form. | 5 |
| (2) | Write a note on any three Disaccharide with structure. | 5 |
| (3) | Describe any two Heteropolysaccharide with structure. | 5 |
