

M.Sc.(Chem.) Semester - 4 (CBCS) Examination
August/September -2020 [NEW COURSE]
Chemistry of Biomolecules (Elective-1)

Time: 2:00 Hours

Marks: 56

Instructions:

1. Figures to the right indicate marks.
 2. There are five questions in the question paper.
 3. Answer any four of the following questions.
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Unit-1 [14 marks]Answer **ALL** questions

- Q.1 (a)** Explain classification of Proteins based on its shape. **4 Marks**
- Q.1 (b)** Answer any two question out of three. **10 Marks**
- (1) Describe amino acid as a zwitterion with diagram. 5
 - (2) Describe four levels of protein structure. 5
 - (3) What do you mean by isoelectric point? Explain different bonds involved in protein structure. 5

Unit-2 [14 marks]Answer **ALL** questions

- Q.2 (a)** Define the following terms: active site, allosteric site and turn over number. **4 Marks**
- Q.2 (b)** Answer any two question out of three. **10 Marks**
- (1) Write a note on various classes of enzymes. 5
 - (2) Describe Michaelis- Menten equation with an appropriate graph. 5
 - (3) Diagrammatically describe types of enzyme inhibitors. 5

Unit-3 [14 marks]Answer **ALL** questions

- Q.3 (a)** Write the differences between DNA and RNA. **4 Marks**
- Q.3 (b)** Answer any two question out of three. **10 Marks**
- (1) Describe the Watson and Crick model of DNA. 5
 - (2) How Renaturation of DNA is dependent on supercoiling and linking no. of DNA? 5
 - (3) Explain composition of nucleotide. 5

Unit-4 [14 marks]

Answer ALL questions

Q.4 (a) Enlist the functions of lipids. **4 Marks**

Q.4 (b) Answer any two question out of three. **10 Marks**

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| (1) | Explain the difference between cis fat and trans fat and state why trans fats are bad for health in comparison to cis fats? | 5 |
| (2) | Write note on phospholipid and glycolipid | 5 |
| (3) | Describe the structure of phospholipids and their role in cell membranes. | 5 |

Unit-5 [14 marks]

Answer ALL questions

Q.5 (a) How linear structure of glucose converts to cyclic structure? **4 Marks**

Q.5 (b) Answer any two question out of three. **10 Marks**

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| (1) | Write structures of aldose sugars in chart form. | 5 |
| (2) | Explain any one non reducing sugar with structure; also explain why it is non reducing? | 5 |
| (3) | Describe any two homopolysaccharide with structure. | 5 |
