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BSCCHEN 201

**II Semester Open Elective (NEP-2020) Degree Examination, September 2022
(2021 – 2022 Batch Onwards)
CHEMISTRY
Molecules of Life**

Time : 2 Hours

Max. Marks : 60

- Instructions :** 1) Write the question number and sub-division **clearly**.
2) Write the chemical equations and diagrams **wherever necessary**.
3) Answer Part – **A** in the first **two** pages of the answer book.

PART – A

Answer **any nine** questions. **Each** carries **two** marks.

(9×2=18)

1. a) What are monosaccharides ?
- b) What is an anomer ?
- c) Define isoelectric point of amino acid.
- d) What is a peptide bond ?
- e) Mention any two biological importance of triglycerides.
- f) What is glycolipids ?
- g) What is an enzyme ?
- h) Mention any two biological importance of cholesterol.
- i) Define nucleic acid.
- j) Define m-RNA.
- k) What is the standard caloric content of carbohydrates and proteins ?
- l) What is fermentation ?

P.T.O.



PART – B

Answer **any three** questions, selecting **one** question from **each** Unit. **Each** question carries **14** marks. **(14×3=42)**

Unit – I

2. a) What is reducing sugar and non-reducing sugar ? Give one example for each. **3**
b) Explain the classification of amino acid. **3**
c) What are carbohydrates ? How are they classified ? **4**
d) Describe any four biological importance of proteins. **4**
3. a) Write the Haworth's structure of sucrose. **3**
b) Give an account of polypeptides. **3**
c) Write a short note on mutarotation. **4**
d) Discuss the denaturation of protein with an example. **4**

Unit – II

4. a) Write a note on importance of enzyme inhibitors. **3**
b) Explain the classification of lipids. **3**
c) Describe the types of enzyme specificity. **4**
d) Explain lock and key model. **4**
5. a) Describe uncompetitive inhibition. **3**
b) Write a note on biological importance of phospholipids. **3**
c) Explain the factors affecting enzyme action. **4**
d) Write any four importance of enzyme inhibitors. **4**

Unit – III

6. a) Write any three differences between purine and pyrimidine. **3**
b) Explain catabolic pathways of fats. **3**
c) Define RNA. Explain the types of RNA. **4**
d) Write a note on : **4**
 i) anabolism
 ii) catabolism.
7. a) Briefly explain polynucleotides. **3**
b) Describe the ATP hydrolysis and free energy change during metabolism process. **3**
c) Explain biological importance of DNA and RNA. **4**
d) Write the interrelationships in the metabolic pathways of proteins, fats and carbohydrates. **4**
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