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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

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| 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

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| 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

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| 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 :
i) anabolism
ii) catabolism. | 4 |
| 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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