

2021
B.A./B.Sc.
Fifth Semester
CORE – 11
CHEMISTRY
Course Code: CHC 5.11
 (Organic Chemistry - IV)

Total Mark: 70

Pass Mark: 28

Time: 3 hours

Answer five questions, taking one from each unit.

UNIT-I

1. (a) Write the structure of purine and adenine base. 3
- (b) Distinguish between the following: 6
 - (i) DNA and RNA
 - (ii) Nucleotides and Nucleosides
- (c) Show specific hydrogen bonding between the following pairs of bases: 5
 - (i) Thymine and Adenine
 - (ii) Cytosine and Guanine
2. (a) Write the structure of pyrimidine, uracil, thymine and cytosine. 6
- (b) State the composition and functional differences between DNA and RNA. Describe the mechanism of replication of DNA. 4
- (c) What are the different types of RNA found in a cell? What are their functions? 4

UNIT-II

3. (a) Write any two methods for synthesis of α -amino acids. 6
- (b) Explain Merrifield solid phase peptide synthesis. 3
- (c) Explain the following terms: 5
 - (i) Zwitter ions
 - (ii) Isoelectric point
4. (a) Write Sanger's method and Dansyl chloride method of N-terminal

- end analysis for determination of primary structure of peptides. 6
- (b) Write the classification of amino acids. 5
- (c) What are proteins? What do you understand by the term “denaturation of proteins”? 3

UNIT-III

5. (a) Describe the mechanism of an enzyme catalysed reaction. Discuss various factors affecting the enzyme catalysed reaction. 6
- (b) Define the term enzyme and give its characteristics. 4
- (c) What are coenzymes? Discuss its role in biological reactions. 4
6. (a) Explain the following terms: 5
- (i) Specificity of enzyme action
- (ii) Stereospecificity of enzyme
- (b) Describe enzyme inhibitors and their importance. 5
- (c) Explain the following terms with suitable example: 4
- (i) Oxidative enzyme
- (ii) Hydrolytic enzyme

UNIT-IV

7. (a) What are lipids? Give classification of lipids with one example each. 5
- (b) A triglyceride has a molecular weight of 790 and contains three double bonds. Calculate its saponification number and iodine value. 6
- (c) Write the differences between animal and plant fats. 3
8. (a) Explain the terms drying and non-drying oils. 4
- (b) Triolein has three double bonds and its molecular weight is 884. Calculate its saponification number and iodine value. 6
- (c) Explain briefly omega fatty acid and trans fatty acid. 4

UNIT-V

9. (a) Write the biological classification of drugs. 5
- (b) Write the medicinal values of vitamin C and its structure. 4
- (c) Write the synthesis, uses and adverse effects of Ibuprofen. 5

10. (a) Write the medicinal value of antacid and its synthesis. 6
- (b) Write the synthesis of paracetamol and its uses and adverse effects. 5
- (c) Define the following terms: 3
- (i) Pharmacy
 - (ii) Therapeutic agents
 - (iii) Drug
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