2023
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 <u>two</u> *questions, taking* <u>one</u> *from each unit.*

UNIT–I

1. (a) Write the synthesis of cytosine and uracil.   6
   (b) Write the structure of purine and pyrimidine base.   4
   (c) What are purine bases present in RNA and pyrimidine bases in DNA
       and write the structure of ribose sugar?   4

2. (a) Write the structure of the cytosine and uracil.   4
   (b) Write the structure of guanosine triphosphate (GTP) and adenosine
       triphosphate (ATP) and show the formation and structure of
       polynucleotide.   6
   (c) Show the hydrogen bonding between $2\times2=4$
       (i) Thymine and Adenine   (ii) Cytosine and Guanine

UNIT–II

3. (a) Write Merrifield solid phase synthesis of protein.   3
   (b) Write any two process for synthesis of a-amino acid.   4
   (c) Write activation of carboxyl group by conversion in to p-nitro phenyl
       ester and dicyclohexyl carbodiimide (DCC) derivative.   7

4 (a) Write short notes on the following: $2\times3=6$
       (i) Denaturation of protein   (ii) Zwitter ions
       (iii) Isoelectric point
   (b) Write Sanger's and Dansyl chloride methods for N-terminal end
       analysis for determination of primary structure of peptides. $3+3 =6$

(c) Write the classification of amino acids on the basis of necessity with examples. 2

UNIT–III

5. (a) Write the mechanism of enzyme action by taking trypsin as example. 5
   (b) Explain the factors affecting enzyme action. 5
   (c) Explain specificity and stereospecificity of enzyme action. 4

6. (a) Explain the terms coenzyme and cofactors. Write their role in biological reactions. 5+5=10
   (b) Write note on uncompetitive enzyme inhibitor. 4

UNIT–IV

7. (a) A triglyceride has molecular weight 884 and contains three double bonds. Calculate its saponification number and iodine number. 4+4=8
   (b) Fats are solid whereas oils are liquid. Explain why. 3
   (c) Write the differences between animal and plant fat. 3

8. (a) Explain drying and non drying oils. 3
   (b) A triglyceride has molecular weight 928 and contains four double bonds. Calculate its saponification number and Iodine number. 4+4=8
   (c) Explain trans fat. 3

UNIT–V

9. (a) Write the classification of pharmaceutical compounds. 4
   (b) Write the synthesis of paracetamol and ibuprofen with its uses. 5+5=10

10. (a) Explain the following terms with suitable examples and their uses
    (i) Antipyretics   (ii) Analgesics   3×4=12
    (iii) Antibiotics   (iv) Antacids
    (b) What are the side effects of antimalarial drugs. 2

———————————