

Total No. of Printed Pages—7

**5 SEM TDC CHMH (CBCS) C 11**

**2 0 2 2**

( Nov/Dec )

**CHEMISTRY**

( Core )

Paper : C-11

( **Organic Chemistry** )

Full Marks : 53

Pass Marks : 21

Time : 3 hours

*The figures in the margin indicate full marks  
for the questions*

1. Choose the correct answer : 1×4=4

(a) Which of the following sets of bases is present both in DNA and RNA?

(i) Adenine, uracil, thymine

(ii) Adenine, guanine, cytosine

(iii) Adenine, guanine, uracil

(iv) Adenine, guanine, thymine

( 2 )

(b) The sequence of bases in DNA is TGAACCCTT, then the sequence of bases in m-RNA is

(i) ACUUGGGAA

(ii) TCUUGGGTT

(iii) ACUUCCTAA

(iv) None of the above

(c) The triglycerides of which of the following saturated fatty acids are not present in oils and fats?

(i) Palmitic acid

(ii) Stearic acid

(iii) Myristic acid

(iv) Acetic acid

(d) Which of the following statements best describes a synthon?

(i) A synthetic reagent used in a reaction

(ii) A key intermediate in a reaction sequence

(iii) A transition state involved in a reaction mechanism

(iv) A hypothetical structure that would result in a given reaction if it existed

( 3 )

UNIT—I

2. (a) Write the name and structure of the bases that are present only in DNA and RNA. 2

Or

Synthesize any one important purine base present in DNA.

(b) Show the complementary base pairing in DNA by a suitable diagram. 2

(c) Write a short note on transcription with proper diagram. 3

Or

Explain the secondary structure of DNA.

UNIT—II

3. (a) How can you determine the C-terminal and N-terminal residue of a peptide chain? 2

(b) Synthesize glycine with the help of Gabriel's phthalimide reaction. 2

(c) Write the name and structure of the compounds that are used to protect the amino group and to activate the —COOH group of amino acid during peptide synthesis. 2

( 4 )

- (d) Write a short note on denaturation of protein with examples. 2

UNIT—III

4. (a) Define enzyme. Name an enzyme that digests fat. 1+1=2

Or

Discuss the Lock and Key model of enzyme action. 2

- (b) What do you mean by inhibitors? Describe the competitive and non-competitive inhibitors. 1+2=3

- (c) What are coenzymes? Discuss the role of NAD and FAD coenzymes. 3

UNIT—IV

5. (a) What are fats and oils? What is the importance of hydrogenation and hydrolysis of fats and oils? Explain with examples. 1+1=2

- (b) Define acid value. What does it indicate? 1+1=2

Or

What is iodine value? What is its significance? 2

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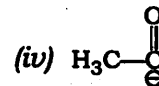
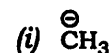
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- (c) Define soap. Give one example each of simple glycerides and mixed glycerides. 1+1=2

- (d) Give a brief account of detergent and their washing action. 2

UNIT—V

6. (a) Write the synthetic equivalents of the following synthons (any two) : 2



- (b) What do you mean by FGI? Give an example. 2

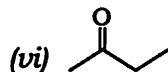
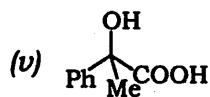
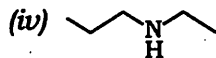
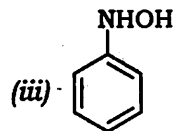
- (c) With the help of the retrosynthetic analysis, write down the synthesis of the following TMs (any three) : 2×3=6



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( Turn Over )

( 6 )



#### UNIT—VI

7. Answer any *four* of the following questions :

2×4=8

- (a) Describe the synthesis of chloramphenicol.
- (b) What are antibiotics and tranquilizers? Give one example in each case.
- (c) Write in brief about the medicinal importance of curcumin present in haldi.

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(d) Discuss the mode of action of sulphanilamides.

(e) What is antimalarial drug? Write the synthesis of an antimalarial drug.

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