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5 SEM TDC CHMH (CBCS) C 11

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(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

- (b) The sequence of bases in DNA is TGAACCCTT, then the sequence of bases in m-RNA is
- (i) ACUUGGGAA
 - (ii) TCUUGGGTT
 - (iii) ACUUCCCAA
 - (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

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

- (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

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

1+1=2

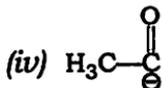
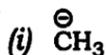
- (d) Give a brief account of detergent and their washing action.

2

UNIT—V

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

2

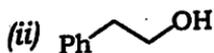
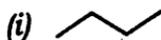


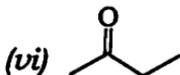
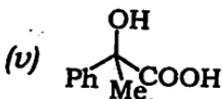
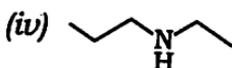
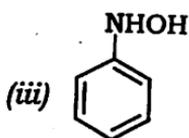
- (b) What do you mean by FGI? Give an example.

2

- (c) With the help of the retrosynthetic analysis, write down the synthesis of the following TMs (any three) :

2×3=6





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.

(7)

- (d) Discuss the mode of action of sulphanilamides.
- (e) What is antimalarial drug? Write the synthesis of an antimalarial drug.
