

Time Allowed : 3 Hours

Max. Marks: 26

SECTION A

1. i) What are heterocyclic compounds? Illustrate the aromaticity of furan through molecular orbital structure.

ii) Give **any two** methods of preparation of: a) Thiophene b) Pyrrole

2. Outline the mechanisms of the following:

i) Dobner-Miller synthesis

ii) Bischler-Napieralski synthesis

3. Write short notes on: (any two)

i) Condensation Polymerization

ii) Homopolymer and copolymer

iii) Styrene-Butadiene rubber.

4. What is keto-enol tautomerism? Give details on existence of keto-enol tautomerism in ethylacetoacetate. How can we isolate tautomeric forms?

2x4=8

SECTION B

5. i) Draw the Haworth's formulae for: a) β -D-Glucose; b) Sucrose

ii) Describe in detail: a) Mutarotations; b) Ruff's degradation.

6. How can you convert glucose into fructose and vice-versa?

7. i) Give Sanger's method of identification of N-terminal amino acid residue of polypeptides.

ii) What is Zwitter ion and Iso electric point? Explain in detail.

8. Give short notes on:

i) Renaturation of protein

ii) Nucleosides

iii) Amino acids and Peptides

iv) Secondary structure of DNA

2x4=8

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SECTION C

9. i) Give the reactions for the following:

a) Conversion of furan into pyrrole

b) Indole into quinoline

ii) Giving reaction discuss the formation of Nylon-66?

iii) Give the method of conversion of benzaldehyde into benzophenone.

iv) Is glucose a aldohexose? Justify.

v) Write the full form and chemical formulae for DCC. Also explain their role in peptide chemistry.

742/MH

5x2=10