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Roll No.

94176

**B. Sc. Biotechnology 6th Semester
(New Scheme) Examination – May, 2023**

ORGANIC CHEMISTRY

Paper : BT-606/BIN-606

Time : Three hours]

[Maximum Marks : 40

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions in all, selecting *one* question from each Section. Question No. 1 is *compulsory*.

1. (a) What are detergents ?
- (b) What is isoelectric point ?
- (c) What are biopolymers ?
- (d) What is Vulcanisation rubber ?
- (e) Give biological importance of proteins
- (f) Define enolates

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(g) Give preparation of Benzene sulphonamide

(h) What are monomers of Nylon 66 ? $1 \times 8 = 8$

SECTION - A

2. (a) Why are electrophilic substitution reaction in five membered heterocyclic compounds preferred at position 2 and not at position 3 ? 4

(b) How do you account for the aromatic character of pyrrole ? Explain. 4

3. (a) Compare the basic character of pyridine, piperidine and pyrrole. Give reasons. 4

(b) Explain the reactivity trend of pyrrole, furan and thiophene towards electrophilic substitution reaction. 4

SECTION - B

4. (a) Write short notes on : 4

(i) Skraup synthesis

(ii) Bischer-Napieralski synthesis

(b) Explain the mechanism of Electrophilic substitution reaction of Isoquinoline. 4

5. (a) Write short notes on : 4

(i) Sulphaguanidine

(ii) Synthetic detergents

(b) Why carboxylic acid are weaker acid then sulphonic acids. 2

(c) How thiols react with (i) H_2O_2 (ii) $(CH_3)_2C = O$. 2

SECTION - C

6. (a) How will you convert diethylmalonate into the following : 4

(i) n-butyric acid Ca^{+1}

(ii) 2-methylpropanoic acid

~~(b)~~ Explain : 4

(i) Keto-enol tautomerism in acetoacetic ester

(ii) Mechanism of Claisen condensation

7. (a) Explain Ziegler-Natta polymerization with mechanism. 4

(b) Give synthesis and uses of : 4

(i) Teflon

(ii) Phenol formaldehyde resin

SECTION - D

~~8.~~ (a) Explain the following : 4

(i) Denaturation of proteins

(ii) Peptide and peptide linkage

(b) Describe the preparation of α -amino acid by : 4

(i) Strecker's synthesis

(ii) Gabriel Phthalimide synthesis

9. (a) Explain : 4

(i) Amphoteric Nature of Amino Acids

(ii) Primary structure of Proteins

(b) Explain Erlenmeyer azalactone synthesis of Phenylalanine. 4
