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Roll No.

(Compulsory Question)

ID—6391

B.Sc. EXAMINATION, 2022

(Batch 2019-2020)

(Sixth Semester)

BIOTECHNOLOGY

Code : CS-603/BT-606

Organic Chemistry

Time : 3 Hours

Maximum Marks : 30

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

Note : Attempt Five questions in all, selecting one question from each Section. Q. No. 1 is compulsory. All questions carry equal marks.

1. (a) Draw molecular orbital structure of Furan. 1
- (b) Draw structures of any two condensed heterocycles and also name them. 1
- (c) Write IUPAC name of HS-CH₂-CH₂-OH. 1
- (d) Out of ethyl acetate and acetone, which one has higher Pk_a value ? 1
- (e) Write monomers of Buna-N and Neoprene. 1
- (f) Define peptides. 1

Section A

1. (a) Compare the aromatic character of furan, pyrrole and thiophene with benzene. 3

(b) Write two methods of preparation of each of the following : 3

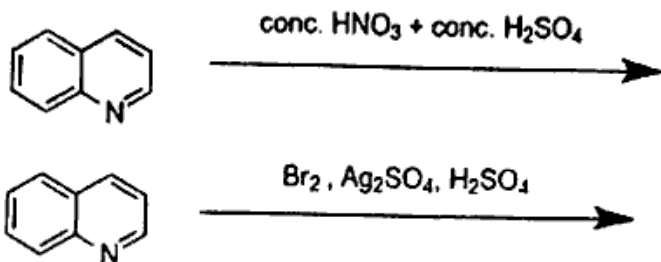
- (i) Pyridine
- (ii) Thiophene.

3. Discuss the general mechanism and orientation of electrophilic substitution reaction of Pyrrole. 6

Section B

4. (a) Write the two methods of synthesis of indole with special reference to Fischer Indole Synthesis. 3

(b) Complete the following reactions : 3



5. (a) Explain the structure of dimethyl thioether. 3

(b) Define synthetic detergents. Explain with reference to alkyl and aryl benzene sulphonates. 3

Section C

6. (a) Explain the acidity of α -hydrogens taking an example of Diethyl malonate. 3

(b) Synthesize ethyl acetoacetate via Claisen condensation. 3

7. (a) Discuss the mechanism of Ziegler-Natta polymerization. 3

(b) Write the monomers of the following : 3

- (i) Glyptal
- (ii) Terylene
- (iii) Bakelite.

Section D

8. (a) Classify proteins on different basis. 3
(b) Write three preparatory methods of α -amino acids. 3
9. (a) Discuss classical peptide synthesis. 3
(b) Explain the primary and secondary structure of proteins. 3