

Roll No.

Total Pages : 04

GSQ/M-20

1755

CHEMISTRY

Paper XX CH-306 (Theory)



Organic Chemistry

Time : Three Hours]

[Maximum Marks : 27

Note : Attempt *Five* questions in all, selecting at least *two* questions from each Section.

Section A

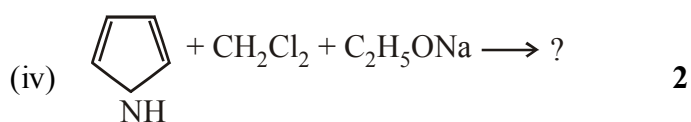
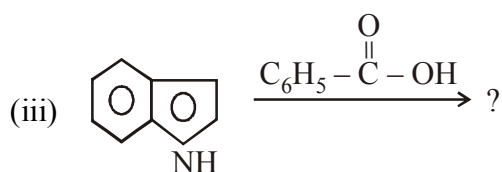
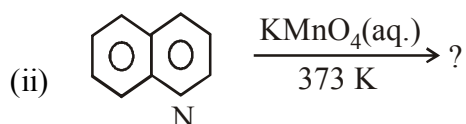
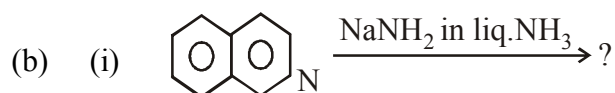
1. (a) How are sulphanamides synthesised ? Explain their acidic character. 2
- (b) Complete the following equations :
- (i) SO₃H + H₂ + H₂O (Steam) → ?
- (ii) SO₂NH₂ + H₂O $\xrightarrow[\text{Heat}]{\text{OH}^-}$?
- (iii) CH₃CHO + CH₃CH₂SH $\xrightarrow{\text{HCl}}$?
- (iv) C₂H₅-S-C₂H₅ + C₂H₅I → ? 2
- (c) Why do thioethers act as stronger nucleophile as compared with ethers ? 1

(3)L-1755

1

2. (a) Compare the aromatic character of pyrrole, furon and thiophene with suitable reason. **2**
- (b) Using sulphonation as one of the steps how will you convert benzene into benzoic acid ? **2**
- (c) Write a brief note on synthetic detergents. **1½**

3. (a) Explain, why electrophilic substitution in pyrrole takes place at 2-position whereas in pyridine it takes place at 3-position. **2**



- (c) Discuss Fischer indole synthesis with mechanism. **1½**

4. (a) Write one method of preparation of and uses of sulphaguanidine. **2**

- (b) Explain the following :

(3)L-1755

2

- (i) Pyridine is a weaker base than trimethylamine 1½
- (ii) Pyrrole and phenol both are acidic in character. Justify this statement in the light of their structure. 1½

Section B

5. (a) Starting with diethylmalonate give a reaction scheme for synthesising each of the following :
- (i) Succinic Acid. 1½
- (ii) Ketovaleric Acid. 1½
- Give the reagents used and the conditions employed in each case.
- (b) What is Claisen condensation ? Discuss the mechanism of the reaction. 2
6. (a) Explain the following terms with examples :
- (i) Denaturation of proteins. 1½
- (ii) Isoelectric point of amino acids. 1½
- (b) What are Peptides ? What are difficulties encountered in their synthesis ? Discuss solid phase peptide method for their synthesis. 2½

7. (a) Write a short note on natural and synthetic rubber. 2
- (b) Give the preparation and uses of :
- (i) Nylon-66 1½
- (ii) Neoprene. 1½
8. (a) What is meant by Ziegler-Natta polymerisation ?
What are its advantages over free radical vinyl polymerisation ? 2
- (b) Describe the factors affecting the relative amount of keto and enol form in the keto-enol tautomerism. 1½
- (c) Explain, why is cationic polymerisation preferred in case of vinyl monomers containing electron donating group. 2