

B.A/B.Sc - 4th Semester (old sylb 2019-20)

(2721)

Paper: Chemistry (Organic Chemistry-B)

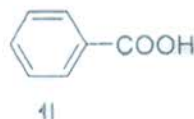
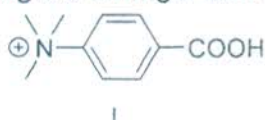
Time Allowed: 2 hrs.

Max. Marks: 35

Note: There are EIGHT questions of equal marks. Candidates are required to attempt any FOUR questions.

Section-A

1. (a) Which of the following is a stronger acid and why? (2)



- (b) Discuss Hell-Volhard-Zelinski reaction with suitable mechanism. (6.75)

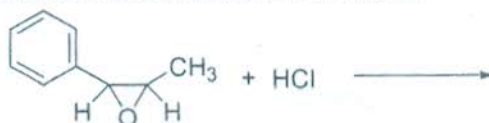
2. (a) Discuss with mechanism, the acid catalyzed hydrolysis of esters. (3.75)

- (b) How will you convert benzoic acid to benzyl alcohol? (2.5)

- (c) Acetic Anhydride is preferred over acetyl chloride for acetylation reaction, explain. (2.5)

Section-B

3. (a) Complete the following reaction with suitable mechanism: (3.75)



- (b) Discuss Paal-knorr synthesis for the preparation of pyrrole derivatives. (5)

4. (a) Electrophilic substitution of pyrrole takes place at C-2 position while in pyridine, it takes place at C-3 position, Explain. (5)

- (b) Compare basicity of pyrrole, pyridine and piperidine. (3.75)

Section-C

5. (a) With mechanism, discuss the reduction of nitrobenzene to aniline using Zn/HCl. (5)

- (b) Treatment of alkyl halide with AgNO_2 gives nitroalkane as the major product but treatment with KNO_2 gives alkyl nitrite as the major product. Explain. (3.75)

6. (a) Discuss the chemistry involved in Carbylamine reaction. (4.25)

- (b) Discuss Gabriel-phthalimide reaction with mechanism. (4.5)

Section-D

7. (a) Using suitable Grignard reagent, sketch the following transformations: (2.5, 2.5)

- (i) Acetonitrile to Butan-2-one

- (ii) Ethylene oxide to 1-propanol

- (b) Discuss Simmons-smith reaction with suitable mechanism. (3.75)

8. (a) With suitable examples, discuss the 1,2 and 1,4-addition of Grignard reagent to α,β -unsaturated ketone. (6.75)

- (b) Why organolithium compounds are more reactive than Grignard reagent. 2