

5/12/24 (mon)
CND-33

(i) Printed Pages : 3 Roll No.

(ii) Questions : 9 Sub. Code :

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B.A./B.Sc. (General) 3rd Semester
(2124)

CHEMISTRY

Paper—X : (Organic Chemistry-A)

(Same for B.Sc. Microbial & Food Technology)

Time Allowed : Three Hours] [Maximum Marks : 22

Note :— There are total **NINE** questions. Attempt **FIVE** questions in all selecting at least **ONE** question from each unit. Question No. 9 is compulsory.

UNIT—I

1. (a) Arrange the alcohols in order of reactivity towards HBr, and justify your answer :
2-butanol, 2-methyl-1-propanol, 2-methyl-2-propanol.

2

- (b) Write the Chemical equation for reduction of butanoic acid with LiAlH_4 .

2

2. (a) Write the mechanism of Claisen rearrangement.

2

- (b) Compare the acidic character of Phenol and Ethanol and explain your answer.

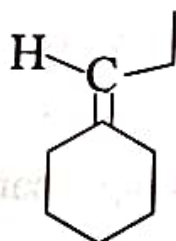
2

UNIT—II

3. (a) Butane nitrile is treated with CH_3MgBr , and then hydrolysed. Write the chemical equations and predict the product formed. 2
- (b) Ethanal and Propane, both have same molecular mass i.e. 44, yet ethanal has higher B.Pt, why? 2
4. (a) Write the possible structures of two different carbonyl compounds having molecular formula $\text{C}_8\text{H}_8\text{O}$ that contain a benzene ring. 2
- (b) How will you synthesize butanal from butanoyl chloride? Write the chemical equation mentioning necessary inorganic reagents required. 2

UNIT—III

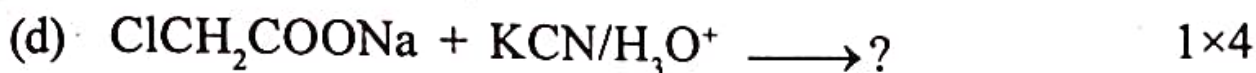
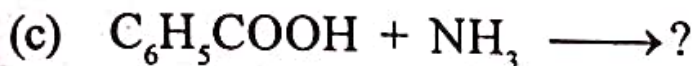
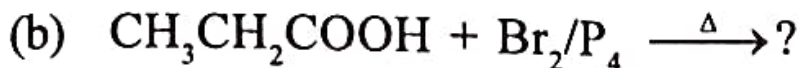
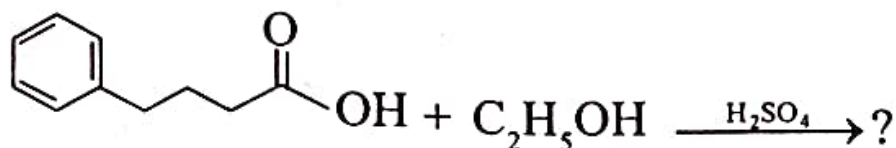
5. (a) What starting materials are required to synthesize the following alkene using Witting reaction? 2



- (b) A Mannich reaction is carried out using cyclohexanone, formaldehyde and Diethyl amine. Write the chemical equation and the product formed. 2
6. (a) Which of the following will undergo Cannizarro reaction and why : Acetaldehyde, formaldehyde, benzaldehyde and benzophenone? 2
- (b) Write the mechanism of Knoevenagel reaction. 2

UNIT—IV

7. (a) Complete the reaction :



8. (a) Arrange the following in increasing order of their acidity :

Methanoic acid, Acetic Acid, Chloroacetic acid, Fluoroacetic acid. Explain your answer. 2

- (b) Benzyl Chloride is treated with KCN and product A is formed, A is then hydrolysed under acidic conditions. Identify A and B. 2

(Compulsory Question)

9. (a) Which is more acidic out of water and ethanol and why ?
(b) What happens when propane 1, 3-dioic acid is strongly heated ?
(c) Write chemical equation for reaction between Formadldehyde and hydroxyl amine under appropriate conditions.
(d) What reagents are needed in Baeyer Villiger oxidation of ketones ?
(e) Write the equation for Clemmensen reduction of Butan-2-one.
(f) Draw the structure and write name of citric acid.

1×6=6