

## BACHELOR OF PHARMACEUTICAL TECHNOLOGY EXAMINATION, 2019

(1st Year, 2nd Semester)

## Pharm. Chem. - I (Organic Chemistry-I)

Time : Three hours

Full Marks : 100

Answer any five questions.

## Group A

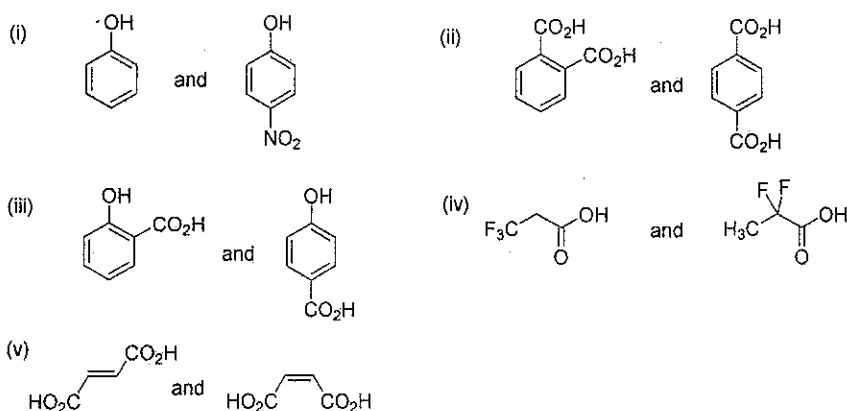
(ANSWER AT LEAST TWO QUESTIONS FROM THE FOLLOWING)

Q1. (a) Draw the energy profile diagram of Nitration of benzene using a mixed acid (Conc.  $\text{H}_2\text{SO}_4$  and Conc.  $\text{HNO}_3$ ) condition showing the plausible intermediates. 4

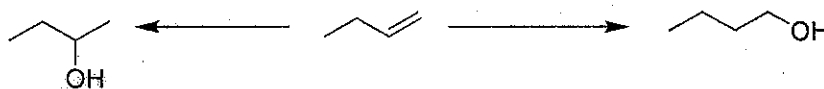
(b) Write down the mechanistic detail of hydrolysis of an ester following  $\text{B}_{\text{AC}}2$  pathway. 4

(c) Compare the acidic character of the following pairs of compounds with proper reasons. 3x2

(answer any three)

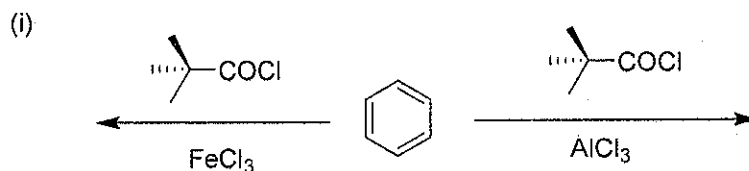


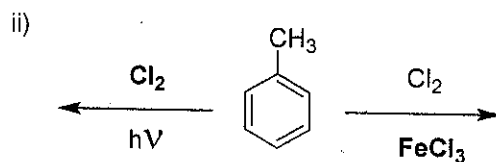
(d) How do you carry out the following transformation using proper reagents and show its mechanistic pathway, 3+3



Q2. (a) Carry out the following transformation with proper mechanism:

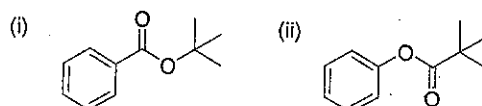
(3 + 3) x 2 = 12



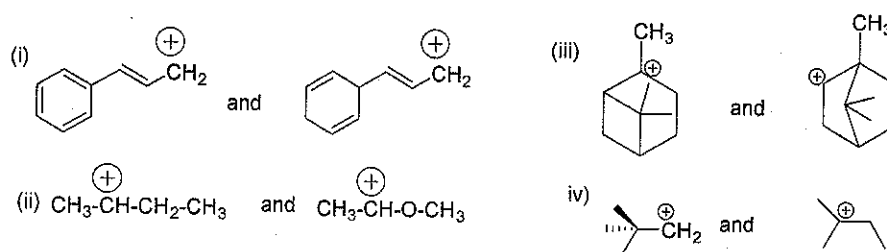


(b) Electrophilic alkylation might not be the best way of preparation of ethylbenzene from Benzene – justify the statement and give a plausible synthetic protocol for the preparation of ethylbenzene from benzene. 4

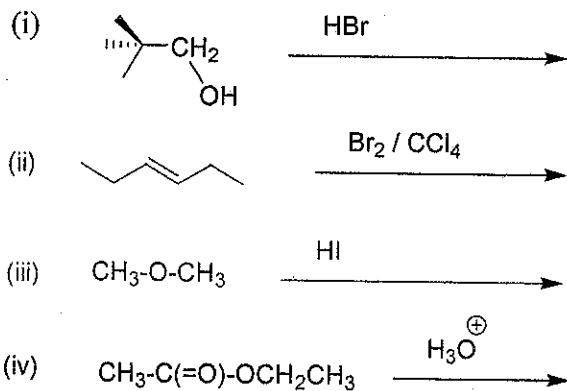
(c) Carry out a plausible route for the synthesis of the following esters: 4



Q3. (a) Compare the relative stabilities of the following reactive intermediates and give reasons for their stabilities: 4 X 2 = 8



(b) Predict the product with plausible mechanism: 3 X 4 = 12



**B. PHARM. FIRST YEAR SECOND SEMMESTER EXAMINATION - 2019**

**Pharm. Chem. I (Organic I)**

**Time: 3 Hour**

**Full Marks: 100**

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**Answer at least two questions**

**Group 'B'**

4. Discuss roles of metals in the preparations of monohydric alcohols. 20

5. a) Write different methods of preparations of ethylene glycol.

b) Discuss different chemical reactions of glycerol.

c) Write names and structures of different oxidative products of ethylene glycol.

$$6 + 8 + 6 = 20$$

6. a) Discuss general methods of preparations of aldehydes.

b) Write different chemical reactions of aldehydes and ketones.

$$8 + 12 = 20$$