

- (b) What happens when benzamide is heated in aqueous NaOH? Give the reaction and mechanism.
- (c) Compound A, C_3H_8O on reaction with PCC gives compound B. B gives –ve iodoform test, and can be oxidized into a carboxylic acid C, which have the same number of carbon atoms. Compound D is the isomer of B, which gives +ve iodoform test, but can't be oxidized in mild conditions. Identify the compounds A, B, C & D. Give the reactions involved. (5,5,5)
5. Differentiate between the following : (with suitable examples) (**any three**)
- (a) Aldehydes and ketones
- (b) Alcohols and phenols
- (c) primary, secondary and tertiary alcohols
- (d) Nucleophilic addition and nucleophilic addition-elimination reactions (5,5,5)
6. Write Short Notes on the following (Give mechanism also): (**any three**)
- (a) Reimer-Tiemann reaction
- (b) Benzoin condensation
- (c) Cannizzaro reaction
- (d) Perkin reaction (5,5,5)

(200)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 6480

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Unique Paper Code : 2174001204

Name of the Paper : GE: Chemistry of Oxygen
Containing Functional Groups
and their Applications to
Biology

Name of the Course : B.Sc. (H)

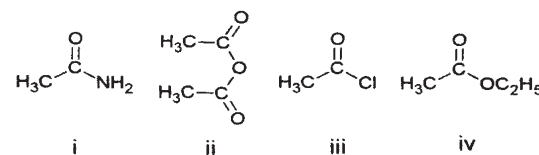
Semester : II/IV/VI

Duration : 2 Hours

Maximum Marks : 60

Instructions for Candidates

- Write your Roll No. on the top immediately on receipt of this question paper.
 - Attempt any **four** questions out of **six**.
 - All** questions carry equal marks i.e. **15** marks.
- (a) Arrange the following in decreasing order of their nucleophilic acyl substitution & justify your answer :

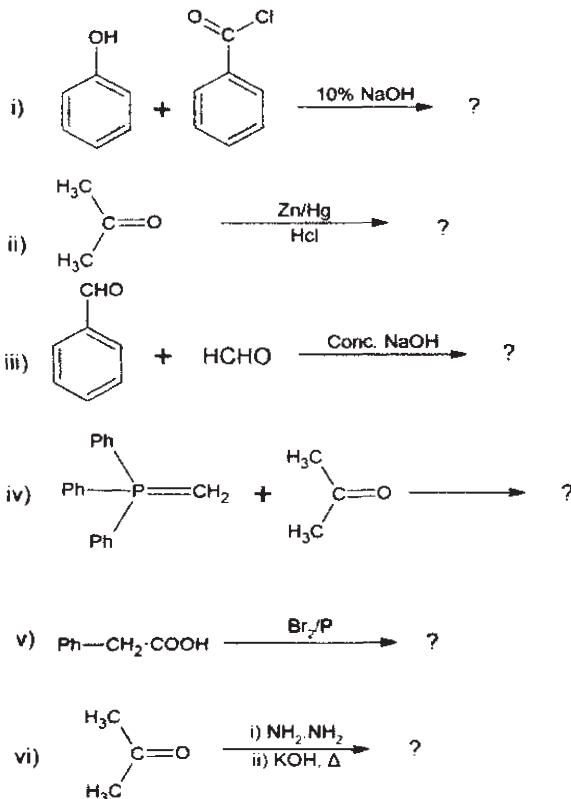


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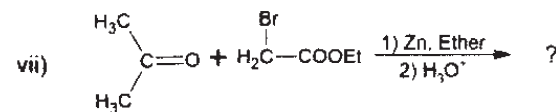
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- (b) What happens when benzoic acid is refluxed with ethyl alcohol in presence of catalytic amount of conc. H_2SO_4 ? Discuss it with the help of mechanism.
- (c) What is Iodoform test? Give the reaction and mechanism. (5,5,5)
2. Predict the products and give the name of the reaction involved : (15)



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3. (a) How will you convert: (No mechanism)
- Benzyl alcohol to Benzaldehyde
 - Ethyl acetate to Ethyl acetoacetate
 - Acetone to Isopropyl alcohol
- (b) What is Aldol condensation? Give its mechanism and biological applications.
- (c) How will you obtain :
- Benzoic acid from Benzamide
 - Salicylaldehyde from Phenol
 - p-Bromophenol from Phenol (5,5,5)
4. (a) Match the following :
- | A (Reaction) | B (Reactants) |
|------------------------------------|---------------|
| i) Reimer-Tiemann reaction | (a) Esters |
| ii) Wittig reaction | (b) Aldehydes |
| iii) Claisen condensation reaction | (c) Amides |
| iv) Lucas test | (d) Phenols |
| v) Cannizzaro reaction | (e) Ketones |
| | (f) Alcohols |

P.T.O.