

5. (a) Explain Claisen condensation and its application.
 (b) Why Benzoin condensation catalysed by cyanide not by hydroxide ion?
 (c) What is fluorescein test?
 (d) Write uses of Brady's reagent with example.
 (5,4,3,3)
6. (a) Explain Reimer Tiemann reaction with mechanism.
 (b) Which one of the following gives Schotten Baumann reaction fast and why?
 $\text{C}_6\text{H}_5\text{OH}$ or $\text{C}_6\text{H}_5\text{NH}_2$
 (c) Write chemical reaction to differentiate between carboxylic acid and phenol with suitable example.
 (d) Write 2,4-DNP test. (5,4,3,3)

(1000)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 6051

H

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) GE

Semester : II

Duration : 2 Hours

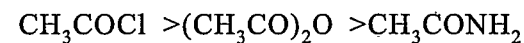
Maximum Marks : 60

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt any 4 questions.

1. Give reason for the followings :

(a) The rate of hydrolysis of the carboxylic acid derivatives is

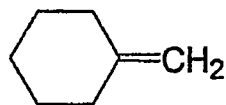


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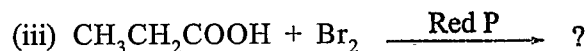
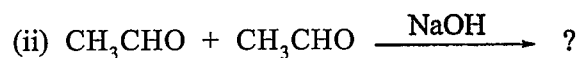
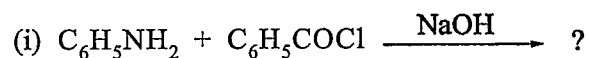
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- (b) Carboxylic acid does not form oxime though they have carbonyl group ($\text{C}=\text{O}$) in their structure.
- (c) 2,2-Dimethylpropanal gives Cannizzaro's reaction, while 2-methylpropanal does not.
- (d) Prepare the following organic compound using Wittig reaction. (4,4,4,3)



2. (a) Phenol is a weaker acid than p-nitrophenol. Explain.
- (b) Distinguish between ketone and an aldehyde by chemical method?
- (c) Complete the following reactions :



- (d) Write reaction mechanism for nitration of phenol. (5,4,3,3)

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3. Write short notes on any **three** of the following with emphasis to (i) the functional group that undergoes these reactions, (ii) product formed and (iii) reaction conditions and mechanism.

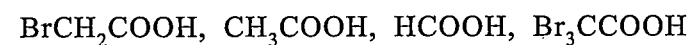
(a) Perkin reaction

(b) Benzoin condensation

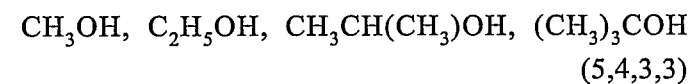
(c) Meerwein-Ponndorf Verley reduction

(d) Houben-Hoesch condensation (5,5,5)

4. (a) Write addition reactions with mechanism of an aldehyde and ketone.
- (b) Arrange the following in increasing order of acidity and justify your answer.



- (c) 2,4,6-Trinitrophenol gives effervescence with sodium bicarbonate while phenol does not explain.
- (d) Arrange the following in decreasing order of their acidity.



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