



Date: 28-11-2022

Dept. No.

Max. : 100 Marks

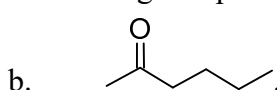
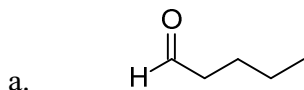
Time: 09:00 AM - 12:00 NOON

**PART – A**

Answer ALL questions.

(10 × 2= 20 Marks)

1. Provide the IUPAC name for the following compounds.



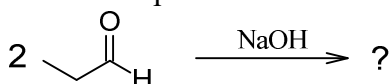
- Schematically represent Cannizaro reaction.
- Mention any two methods for the preparation of carboxylic acids.
- Comment on the transesterification reaction.
- Differentiate rearrangement reactions from other reactions.
- Give an example of ring contraction rearrangement.
- What is tautomerism? Illustrate the keto-enol tautomerism of ethyl acetoacetate.
- Show that diazomethane is a good methylating agent of carboxylic acids.
- What is the fundamental criterion for an organometallic compound?
- Illustrate the structure of 18-crown-6.

**PART-B**

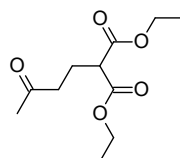
Answer any EIGHT questions.

(8 × 5= 40 Marks)

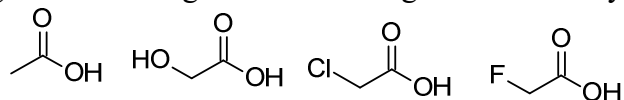
- Analyse the acidic nature of alpha hydrogens of aldehydes and ketones.
- Predict the product and Account for its formation with mechanism.



- Propose a scheme for the synthesis of the following compound using Michael addition reaction. Explain with mechanism.



- Arrange the following in the increasing order of acidity. Justify



pKa = 4.8

pKa = 3.9

pKa = 2.8

pKa = 2.6

- Discuss the methods used to prepare succinic and phthalic acid.
- Examine the mechanism of alkaline hydrolysis of esters.
- Explain the classification of molecular rearrangements.
- Demonstrate that the Hoffmann and Lossen rearrangement reactions proceed through the same isocyanate intermediate.
- Active methylene compounds are highly acidic in nature. Explain.
- Describe the characteristic reactions of active methylene compounds.
- How methyl lithium is prepared? Give a synthetic application of MeLi in organic synthesis.
- Exemplify the application of organocopper reagents in organic synthesis.

## PART – C

Answer any **FOUR** questions.

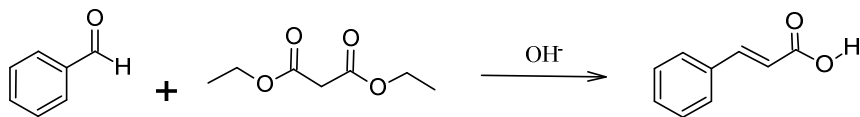
(4 × 10= 40 Marks)

23. a. Analyse the mechanism of Lithium Aluminium Hydride reduction. (5)

b. Investigate the photochemical reactions of carbonyl compounds. (5)

24. a. Write a note on the classification of carboxylic acids. (5)

b. Account for the following conversion with the suitable mechanism.



(5)

25. a. Discuss pinacol-pinacolone rearrangement. (5)

b. Compare cope and Claisen rearrangement reactions. (5)

26. a. How will you synthesize the following compounds from ethyl acetoacetate. (6)

i. Adipic acid    ii. Crotonic acid

b. Mention any one characteristic reaction for the keto and enol group of ethyl acetoacetate. (4)

27. a. How is Grignard reagent prepared? Outline its utility in organic synthesis. (7)

b. Describe the application of organozinc reagents in Carbon-Carbon bond formation. (3)

28. a. Compare Wolf-Kishner and Meerwin Pondorf Varley reductions of carbonyl compounds. (5)

b. Describe the mechanism of benzil-benzylic rearrangement. (5)

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