



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – CHEMISTRY

FIFTH SEMESTER – APRIL 2019

16UCH5MC03– ORGANIC FUNCTIONAL GROUPS-II

Date: 22-04-2019
Time: 09:00-12:00

Dept. No.

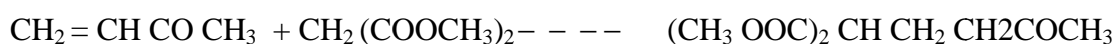
Max. : 100 Marks

PART- A

Answer ALL questions

(10X2 = 20 marks)

1. Why is α -H in acetaldehyde acidic in nature?
2. Predict the reagent and name the following reaction.



3. What is the action of heat on malonic acid?
4. What is Hofmann degradation? Give an example.
5. Differentiate inter and intramolecular rearrangement reactions.
6. What is Curtius rearrangement? Give an example
7. How will you prepare diazomethane from methyl amine?
8. Convert malonic ester in to succinic acid.
9. Mention the importance of organometallic compounds.
10. How will you prepare methyl magnesium bromide?

PART- B

Answer any EIGHT questions

(8 x 5 = 40 marks)

11. What is Urotropine? How will you prepare it? Mention its use.
12. How will you make the following conversions:-
 - a. Methyl cyanide in to Acetone
 - b. Acetaldehyde in to crotonaldehyde
13. Predict the product and explain its mechanism.

Base



14. Distinguish α , β and γ – amino acids.

15. Starting from lactic acid how will you prepare
- a. Pyruvic acid b. Acetaldehyde c. Lactide
16. Convert the following
- a. Allyl alcohol in to Acrylic acid (3)
- b. phthalaldehyde into phthalic acid(2)
17. Discuss the stereochemical aspects of ring contraction and ring enlargement rearrangements.
18. Write the mechanism of Benzilic acid rearrangement.
19. Write notes on Pinacol- Pinacolone rearrangement.
20. What happens when diazoacetic ester is treated with the following:-
- a. Acetic acid b. Ethylene
21. Describe the preparation and properties of organo zinc compounds.
22. Discuss the catalytic properties of crown ethers.

PART- C

Answer any **FOUR** questions

(4x10 = 40 marks)

23. Give a brief account on Norrish type I and II reactions.
24. How does acetic acid react with the following?
- a. Cl₂ b. C₂H₅OH c. Zn d. NH₃
25. Name the following reactions and explain its mechanism.
- a. $\text{Ph}_2\text{C} = \text{NOH} \xrightarrow{\text{H}^+} \text{PhCONHPh}$
- b. $\text{RCONH}_2 \xrightarrow{\text{Br}_2/\text{KOH}} \text{RNH}_2$
26. a. Explain Fries and photo Fries rearrangement.
- b. An organic compound C₄H₆O₄ (A) when heated with acetic anhydride gives another compound C₄H₄O₃ (B) which in turn reacts with ammonia to give a third compound C₄H₅O₂N (C). Both B and C may be hydrolysed to A. With chlorine A gives a monochloro compound (D) which reacts with caustic potash to give either C₄H₄O₅K₂ (E) or C₄H₂O₄K₂ (F) depending upon the condition of the reaction. Identify the compounds A to E. (5+5)
27. Give a brief account on the synthetic applications of acetoacetic ester.
28. Starting from Methyl magnesium iodide how will you prepare
- a. Acetaldehyde b. Acetone c. Diethyl ether d. Methyl cyanide f. Methyl iodide
