

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034



B.Sc. DEGREE EXAMINATION – CHEMISTRY

FIFTH SEMESTER – NOVEMBER 2019

16/17UCH5MC03 – ORGANIC FUNCTIONAL GROUPS-II

Date: 02-11-2019

Dept. No.

Max. : 100 Marks

Time: 09:00-12:00

PART A (10x2=20)

Answer all the questions

1. Predict the product in the reaction $\text{CH}_3\text{COCH}_3 + \text{LiAlH}_4 \text{ -----} \rightarrow ?$
2. What is the product in the following reaction?
 $\text{C}_6\text{H}_5\text{CHO} + (\text{CH}_3)_2\text{C}^-\text{P}^+\text{Ph}_3 \text{ -----} \rightarrow ?$
3. Write any two physical properties of Phthalic acid.
4. What is the IUPAC nomenclature of a) $\text{CH}_3\text{CH}_2\text{CH}_2\text{COOH}$
b) $\text{CH}_3\text{CH}(\text{COOH})\text{CH}_2\text{CH}_3$?
5. What is sigmatropic rearrangement?
6. Differentiate inter and intra molecular rearrangements.
7. What is an active methylene group?
8. Write the tautomeric forms of acetoacetic ester.
9. What are crown ethers?
10. Cite an example for coupling reaction.

PART B (8x5=40)

Answer any eight questions

11. Compare and contrast Aldol and Cannizaro reactions.
12. What is the condition for haloform reaction? Write its mechanism
13. Explain Norrish type I and Norrish type II reactions.
14. Write a note on Trans - esterification.
15. Which is more acidic CH_2ClCOOH or CH_3COOH ? Explain.
16. How is cinnamic acid prepared? What are its properties?
17. Write in detail about Cope and Oxycope rearrangements.
18. Substantiate with your answer that Fries rearrangement can be both inter and intramolecular.
19. How are molecular rearrangements classified? Explain.
20. How is diazomethane prepared? What are its synthetic applications?
21. Explain any two substitution reactions using organometallics.
22. What are the catalytic properties of Crown Ethers?

PART C (4x10=40)
Answer any four questions

23. Write a note on a) Wolf –kishner reduction b) MPV reduction c) Michael reaction (3+3+4)
24. Explain the preparation and reactions of a) acid chloride b) acid anhydride. (5+5)
25. a) How is succinic acid prepared ? What are its properties?
- b) Explain Claisen rearrangement reaction. (5+5)
26. a) Write the mechanism of Pinacol – Pinacolone rearrangement?
- b) What is the significance of Beckmann rearrangement? (5+5)
27. What are the synthetic applications of a) malonic ester b) cyanoacetic ester? (5+5)
28. How is Grignard reagent prepared from halo derivatives, thioethers and by substitution?
