

B. Sc. DEGREE END SEMESTER EXAMINATION - MARCH 2025**SEMESTER 4 : CHEMISTRY****COURSE : 19U4CRCHE4 : ORGANIC CHEMISTRY – II***(For Regular 2023 Admission and Improvement / Supplementary 2022/ 2021/2020/2019 Admissions)*

Time : Three Hours

Max. Marks: 60

PART A**Answer All (1 mark each)**

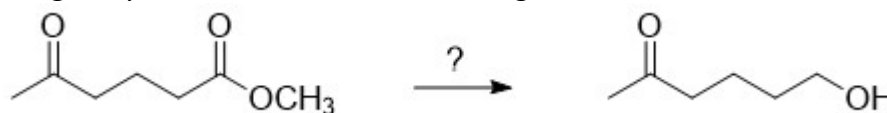
1. The reaction intermediate formed during Reimer-Tiemann reaction is
2. What are coumarins?
3. Name the reagent used to convert Ethyl bromide into Ethane.
4. Williamson ether synthesis is an example of ----- substitution.
5. Which acid anhydride is used in Diels-Alder reaction?
6. In general, electrophilic substitution reactions of anthracene occurs at which positions of carbon atom?
7. Give one laboratory method for the preparation of urea.
8. Draw the structure of the product formed during the reaction of benzaldehyde with Borsch's reagent.

(1 x 8 = 8)**PART B****Answer any 6 (2 marks each)**

9. Benzoic acid is more acidic than acetic acid. Why?
10. Write briefly on the basicity of the Guanidine.
11. Discuss the preparation of diethylether from ethanol.
12. Explain why organolithium compounds are more reactive than Grignard reagents?
13. What is Bucherer reaction?
14. Explain Malaprade reaction.
15. . How do you account for the following fact:
“*o*-Toluic acid is weaker acid than *m*-nitrobenzoic acid”?
16. Explain reductive amination reaction using an example.

(2 x 6 = 12)**PART C****Answer any 4 (5 marks each)**

17. Design a synthetic route for the following conversion



18. Explain with equations the reaction between a) Phenanthrene and Bromine, b) Phenanthrene and sodium in isoamyl alcohol and c) Phenanthrene and CrO_3 in acetic acid.
19. . Carry out the following conversations.
(i) Benzaldehyde into Cinnamic acid (ii) Glycerol into citric acid
(iii) Benzene into Maleic acid.
20. How will you convert adipic acid into cyclopentanone?

21. An acid chloride and a vinyl chloride both have a chlorine atom linked to an sp^2 hybridized carbon atom, yet the acid chloride is far more reactive in nucleophilic substitution reaction. Explain.
22. Explain with mechanism the two methods used for the conversion of carbonyl compounds into corresponding methylene compounds.

(5 x 4 = 20)

PART D

Answer any 2 (10 marks each)

23. What happens when benzoyl chloride reacts with:
(a) aniline in the presence of aqueous NaOH (b) methyl alcohol
(c) sodium benzoate (d) Lithium aluminium tri-tert-butoxy hydride
(e) CH_2N_2 followed by treatment with colloidal silver.
24. What are primary, secondary and tertiary alcohols? Give an example each. Discuss any one test to distinguish between primary, secondary and tertiary alcohols.
25. Discuss the mechanism of a) Knoevenagel condensation b) MVP reduction c) Claisen Schmidt and d) Mannich Condensation.
26. Explain the synthesis and any two applications of diethyl malonate.

(10 x 2 = 20)