Reg. No ..... Name **23U425**

B. Sc. DEGREE END SEMESTER EXAMINATION : MARCH 2023

SEMESTER 4 : CHEMISTRY

COURSE : **19U4CRCHE4 : ORGANIC CHEMISTRY – II**

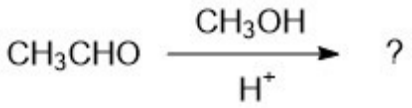
(For Regular - 2021 Admission and Improvement / Supplementary - 2020 / 2019 Admissions)

Time : Three Hours Max. Marks: 60

PART A

Answer All (1 mark each)

1. The product obtained by the oxidation of salicylaldehyde with alkaline Hydrogen peroxide at 50°C is.
2. Name the compound used in the separation of a mixture of amines by Hinsberg method.
3. Name the reagent used to convert Ethyl bromide into Ethane.
4. Anthracene is readily reduced by sodium and amyl alcohol into.
5. Give one laboratory method for the preparation of urea.
6. Name the reaction employed for α-halogenation of acids.
7. The major product obtained when ethanol is heated with con. Sulphuric acid at 140°C.
8. Write the structure of the product of the reaction



(1 x 8 = 8)

PART B

Answer any 6 (2 marks each)

9. Discuss the sulphonation reactions of Phenanthrene.
10. What do you understand by term "Ortho effect"?
11. Write one method each for the preparation of thiourea and semicarbazide.
12. What is Williamson synthesis?
13. Which answers iodoform test, Methanol or ethanol? Why?
14. Arrange the following acids in the increasing order of acid strength:
    Acetic acid, Formic acid, Propionic acid, Benzoic acid.
15. How would you bring about the conversion of Bromobenzene to 1-phenylethanol.
16. What are the products formed when p-chlorobenzaldehyde is heated with conc. NaOH solution ?

(2 x 6 = 12)

PART C

Answer any 4 (5 marks each)

17. Discuss the mechanism involved in the conversion of benzaldehyde into cinnamic acid.
18. Write equation for the preparation of
    (i) Acyloin from ethyl alkanoate (ii) Acetophenone from acetyl chloride
    (iii) Acetoacetic ester from ethyl acetate (iv) Methylamine from acetamide.
19. "Acetamide is very slowly hydrolysed with water but rapidly in the presence of an acid or alkali" Why?
20. Explain with mechanism i) Perkin reaction and ii) Knoevanagel Condensation.

21. How will you synthesis Nylon 6, 6 from adipic acid ?

22. 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.

(5 x 4 = 20)

PART D
Answer any 2 (10 marks each)

23. (A) Write briefly on Wittig reaction. Give the mechanism and applications.(5 Marks)
B) Give the mechanism of reduction of carbonyl compounds with $LiAlH_4$. Give two applications.(5 Marks).

24. What happen 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.

25. Convert
    a) Diethyl malonate to hexanoic acid
    b) Ethyl aceto acetate to acetonyl acetone
    c) Ethyl cyano acetate to crotonic acid.

26. What are primary, secondary and tertiary alcohols? Give an example each. Discuss any one test to distinguish between primary, secondary and tertiary alcohols.

(10 x 2 = 20)