17A

D5BCH1802 (S2) (PAGES 2) Reg. No.....

Name.....

FIFTH SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2022

(Supplementary – 2018 Admission)

CHEMISTRY

ACHE5B07T: ORGANIC CHEMISTRY - II

Time: 3 Hours **Maximum marks: 80**

PART A: Answer *all* the questions. Each carries 1 mark.

1. Chlorobenzene on reaction with aq. NH_3 in the presence of Cu_2O at 200°C and 60 atm gives .....
2. Methyl magnesium bromide on reaction with chloramine yields .....
3. Acetaldehyde reacts with ethyl magnesium bromide followed by hydrolysis gives .....
4. The IUPAC name of ethylene oxide is .....
5. 18-Crown-6 prefers ..... alkali metal ion in reaction.
6. The catalyst used in Rosenmund reduction is .....
7. Carboxylic acids react with NH_3 to form .....
8. Hydrolysis of an ester with alkali is generally called .....
9. The hybridization of N in NH_3 is .....
10. Identify the product on Schotten-Baumann reaction of aniline.

(10× 1= 10 Marks)

PART B: Answer any *ten* questions. Each carries 2marks.

11. Identify the major product on reaction of *t*-butyl bromide with NaOEt in ethanol.
12. Discuss two synthetic applications of organozinc compounds.
13. Explain the reactions of methyl lithium with ethylene oxide.
14. Explain a method for the conversion of phenol to salicylic acid.
15. Write one test to distinguish between alcohols and phenols.
16. Identify the products on reaction of ethyl methyl ether with HI.
17. Explain the formation of product on reaction of ethylene oxide with NaOEt in ethanol.
18. Discuss a method for the conversion of nitriles to aldehydes.
19. Compare the acid strength of acetic acid and benzenesulphonic acid.
20. Write two simple methods for the identification of carboxylic acids.
21. Chloroacetic acid is more acidic than acetic acid. Give reason.
22. Identify the Hofmann elimination product of *n*-butyl amine.

(10 × 2 = 20Marks)

(PTO)

PART C: Answer any *five* questions. Each carries 6 marks.

23. 2,4,6-trinitrochlorobenzene undergoes nucleophilic substitution far easier than chlorobenzene. Give reasonable explanation.
24. Briefly explain the factors which will affect the course of SN1 substitution reaction.
25. Explain the advantages of PCC over $KMnO_4$ in the oxidation of prop-2-en-1-ol.
26. Briefly discuss two synthetic applications of aldehyde cyanohydrins.
27. Discuss two methods for distinguishing between aldehydes and ketones.
28. Write two methods for the conversion of acids to acid chlorides.
29. Write a route for the conversion of propionic acid to α-cyanopropionic acid.
30. Explain a method for the formation of *p*-bromo aniline from aniline.

(5 × 6 = 30 Marks)

PART D: Answer any *two* questions. Each question carries 10 marks.

31. a) Give reasonable explanation for the acidity of phenol;
    b) Illustrate the effect of electron donating and withdrawing substituents on acidity of phenol.
32. Write note on, a) aldol condensation; b) Cannizzaro reaction; c) MPV reduction.
33. a) Discuss the effect of heat on i) oxalic acid ii) malonic acid iii) succinic acid
    b) Discuss the reactions of citric acid.
34. a) Discuss synthetic applications of aryl diazonium salts;
    b) Write notes on azo coupling.

(2×10 = 20 Marks)