

D5BCH2202

Reg. No.....

Name:

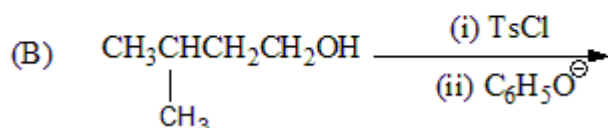
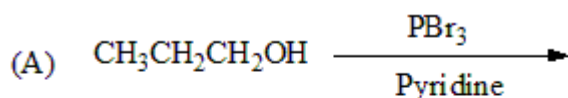
FIFTH SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2024
(Regular/Improvement/Supplementary)
CHEMISTRY
GCHE5B07T: ORGANIC CHEMISTRY II

Time: 2 Hours

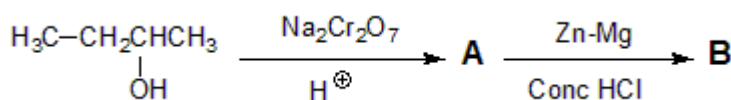
Maximum Marks: 60

SECTION A: Answer the following questions. Each carries *two* marks.
(Ceiling 20 marks)

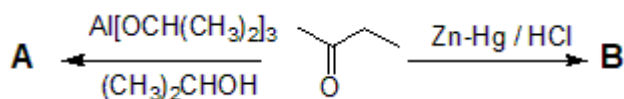
- Name the reagent which can be used to convert acetophenone into phenyl acetate.
- Mention the role of N-bromosuccinimide in the allylic bromination of alkenes.
- What is Nef reaction?
- What is the product obtained when ethyl bromoacetate is treated with acetone in the presence of zinc in ether solution and the system is then subjected to acidic hydrolysis?
- Give the product of each of the following reactions:



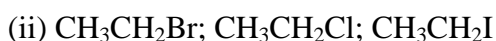
- Complete the following sequence of reactions:



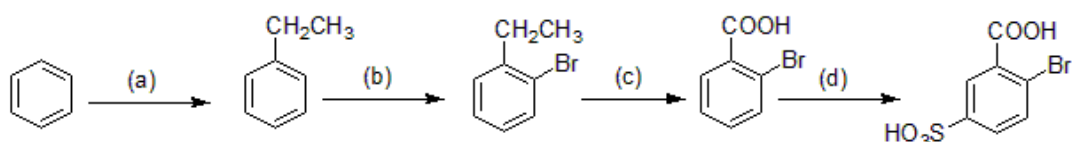
- What will be the products obtained by the following reactions:



- Arrange the halo-alkanes in the following series in an increasing order of reactivity in $\text{S}_{\text{N}}2$ reaction towards a given nucleophile.



- Identify the reagents represented by the letters (a) - (d) in the following scheme:



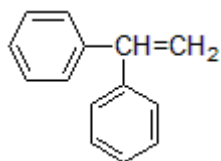
(PTO)

10. How will you synthesize acetic anhydride from acetic acid?
11. Explain why HO-CH₂CH₂Cl is not a good organohalide for the preparation of Grignard reagent.
12. From the given compounds, select the stronger base. Justify.
m-Methylaniline and benzylamine.

SECTION B: Answer the following questions. Each carries five marks.

(Ceiling 30 marks)

13. Discuss the effect of (i) nature of the nucleophilic reagent, (ii) Polarity of the solvent, and (iii) concentration of nucleophilic reagent on S_N2 reactions.
14. Discuss the following name reactions giving the mechanism in each case:
a. Aldol condensation. b. Favorskii rearrangement.
15. How is diethyl malonate prepared? Give important reactions of diethyl malonate.
16. (a) Giving a suitable example, explain the Wittig reaction. (b) Identify the starting aromatic carbonyl compound and phosphorous ylide which on Wittig reaction yield the following compound:



17. Explain with an example the basis of the Ziesel method for estimation of the methoxy group.
18. What is Hell-Volhard-Zelinsky reaction? Discuss its mechanism.
19. Discuss the methods available for reducing carbonyl compounds to alcohols.

SECTION C: Answer any one question. The question carries ten marks.

20. Giving mechanism, explain the following reactions with reference to phenol:
a. Reimer Tiemann reaction.
b. Gatterman aldehyde synthesis.
c. Dienone-phenol rearrangement.
d. Fries rearrangement.
21. How is benzene diazonium chloride prepared? How is it converted to:
(a) Phenol. (b) Benzene. (c) Chlorobenzene. (d) Azobenzene.

(1 X 10 = 10 Marks)