

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034



B.Sc. DEGREE EXAMINATION – CHEMISTRY

THIRD SEMESTER – NOVEMBER 2019

CH 3506 – ORGANIC FUNCTIONAL GROUPS - I

Date: 29-10-2019

Dept. No.

Max. : 100 Marks

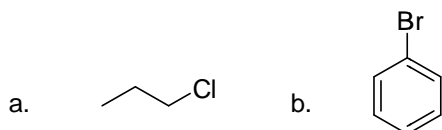
Time: 01:00-04:00

Part-A

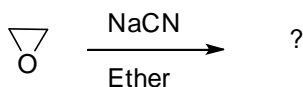
Answer ALL questions.

(10 × 2= 20)

1. Write the IUPAC name of the following compounds.



2. Define Saytzeff rule.
3. Mention any one method of preparation of alcohol.
4. Highlight the utility of Iodoform test.
5. Provide an example for symmetrical and unsymmetrical ether.
6. What is the principal organic compound formed in the following conversion.



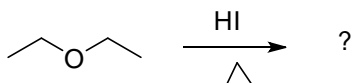
7. Why are the α -hydrogens in aldehydes and ketones acidic in nature?
8. How is the presence of methyl ketones in a molecule identified?
9. What happens when acetic acid is treated with thionyl chloride?
10. Illustrate the structure of phthalic acid.

Part-B

Answer any EIGHT questions.

(8 × 5= 40)

11. Explain IUPAC rules for naming alkyl halides with suitable example.
12. Discuss the effect of (i) Nature of nucleophilic agent (ii) polarity of the solvent on S_N2 reaction.
13. Write a note on reactions of alcohols involving C –OH bond cleavages.
14. Phenol is more acidic than ethyl alcohol. Explain.
15. Describe any two methods of preparation of ethers.
16. Identify the product in the following conversion and justify with appropriate mechanism.



17. Write the mechanism of Cannizzaro reaction.
18. Analyse the reactivity of carbonyl groups.

19. Discuss the effect of substituents on the acidity of monocarboxylic acids.
20. Provide a method for the preparation of succinic acid and cinnamic acid.
21. Delineate any two methods of preparation of aldehydes.
22. What is the advantage of Hoffmann's elimination? Explain with suitable example.

Part-C

Answer any FOUR questions.

(4× 10= 40)

23. a) Provide a comparative account on S_N1 and S_N2 reactions. (5)
b) Discuss E1 mechanism with a suitable example (5)
24. a) Enumerate the reactions of alcohols with reference to O-H bond cleavages. (5)
b) Write a note on the preparation of phenols. (5)
25. a) Discuss the mechanism of acid and base catalyzed cleavage of epoxides. (5)
b) Explain why epoxides are more reactive than ethers. (5)
26. Explain Norrish type-I and II reactions with suitable examples.
27. Arrange the following in the order of increased acidity and specify the reason. i. Benzoic acid
ii. 4-nitro benzoic acid iii. 4-amino benzoic acid
28. Explain the following reactions with mechanism.
 - a. Michael addition (5)
 - b. Reformatsky reaction (5)
