



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – CHEMISTRY

THIRD SEMESTER – NOVEMBER 2018

CH 3506 / CH 3502– ORGANIC FUNCTIONAL GROUPS - I

Date: 29-10-2018
Time: 01:00-04:00

Dept. No.

Max. : 100 Marks

PART –A

Answer All the Questions:

(10 x 2 = 20 Marks)

1. Write the Nomenclature of the following compounds.

CH₃

|

a) H₂C-CH=C-CH-CH₃ b) OH-C₆H₄-CH₃

||

H₃CCH₃

2. What is the product obtained, when benzyl chloride is treated with aqueous NaOH?

3. How is phenol synthesized from diazonium salt?

4. What happens when tertiary butyl alcohol is passed over heated copper at 300°C?

5. How will you prepare diethylether from ethyl alcohol?

6. Name the product obtained when conc. H₂SO₄ is heated with diethyl ether.

7. Why do aldehydes undergo nucleophilic addition reaction more readily than ketone?

8. What is Hemiacetal? How is it obtained?

9. Chloro acetic acid is stronger than acetic acid. Give reason.

10. How will you convert ethylene diamide into succinic acid?

PART –B

Answer any EIGHT questions:

(8 x 5 = 40 Marks)

11. Write the mechanism of E₁ & E₂ reactions of alkyl halide.

12. What are the factors favouring the Hofmann elimination reaction over saytzeff's mechanism?

13. Write the mechanism of the following name reactions.

i) RiemerTiemann reaction ii) Kolbe reaction.

14.a. Explain the Williamson's synthesis of Ethers.

b. Complete the following reaction

UV light



15. Explain Norrish type I and Norrish type II reactions with suitable examples.
16. Discuss the mechanism of Aldol Condensation reaction.
17. Write the following reactions and explain their mechanisms
i) Perkin reaction, ii) MPV reduction reaction
18. (a) Write any two methods of preparation of succinic acid.
(b) How does phthalic acid react with NH_3 ?
19. Discuss the mechanism of acid-catalysed dehydration of ethyl alcohol.
20. What is Wittig reaction? Explain its mechanism.
21. Describe the action of the following in the reduction of acids, (i) LiAlH_4 , (ii) H_2 -Pd
22. How can acetyl chloride be converted into the following compounds
(i) Acetamide, (ii) Acetic acid, (iii) Ethyl acetate.

PART -C

Answer any FOUR questions:

(4 x 10 = 40 Marks)

23. What are the factors influencing SN_1 & SN_2 reactions and explain its mechanisms.
24. (a) Explain Friedel-Craft's acylation and alkylation reactions with suitable examples.
(b) Taking suitable example, explain the acidity of α -hydrogen in carbonyl compounds.
25. Write the mechanism of the following reactions
(i) Halogenation of phenol (ii) Sulphonation of phenol
26. Illustrate the following reactions with suitable mechanisms
(a) Benzoin condensation (b) Claisen-Schmidt reaction.
(b) What is Perkin reaction? Explain its mechanism.
27. (a) Explain the action of the following reagents on diethylether
(i) Hot HI (ii) Cl_2 (iii) PCl_5 .
(b) How is Phenol converted into Ethoxy benzene?
28. (a) What is the action of heat on the following compounds,
(i) Malonic acid (ii) Oxalic acid (iii) Malic acid
(b) How is oxalic acid converted into formic acid?
