LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION –**CHEMISTRY**

THIRD SEMESTER – **APRIL 2019**

CH 3506– ORGANIC FUNCTIONAL GROUPS - I

Date: 25-04-2019 Dept. No. Max. : 100 Marks

Time: 01:00-04:00

PART- A

Answer ALL questions **10X2 = 20 marks**

1. Give the IUPAC name of
   (i). $CH_3CH_2CHBrCH_2CHClCH_3$(ii). $C_6H_5CH_2Cl$

2. How does methane react with chlorine under sunlight?

3. What is epoxidation reaction? Give an example.

4. How will you convert acetone into propane.

5. Write the IUPAC name of (i). Ethyl methyl ether (ii), Methyl isopropyl ether

6. How will you prepare diethyl ether by Williamson's synthesis?

7. Differentiate ketone fromaldeydes.

8. What is aldol condensation? Give an example.

9. State and explain esterification reaction with an example.

10. Formic acid is a stronger acid than acetic acid. Why?

PART- B

Answer any EIGHT questions **8x5 = 40 marks**

11. Explain the mechanism of S_N2 reaction with an example.

12. Mention the applications of Hoffmann and Saytzeff rules.

13. Why is phenol acidic? Explain.

14. Convert the following :

   (i). Acetaldehyde into Isopropylalcohol **3 marks**

   (ii). 1- Butene into 2-Butanol **2 marks**

15. How does ethanol react with the following

   (i). Sulphuric acid **3 marks**

   (ii). Acetic acid **2 marks**

16. (i). Mention any three uses of diethyl ether **3 marks**

   (ii). How does diethyl ether react with inner mineral acids. **2 marks**

17. Differentiate alcohols and ethers.

18, Give a brief account on Norrish type- I photo chemical reaction of carbonyl Compounds.

19. What is MPV reduction? Discuss its mechanism.

20. What is urotropine? How will you prepare it? Mention its use.

21. Complete the following

(i). $C_2H_5MgBr \xrightarrow[]{CO_2,\ H^+}$?

(ii). $C_2H_5COONa + NaOH + heat \longrightarrow$?

(iii). $C_2H_5COOH \xrightarrow{LiAlH_4}$?

22. Explain alkaline hydrolysis of esters and trans esterification.

PART- C

Answer any FOUR questions **4x10 = 40 marks**

23. (i). Explain the mechanism of E1 and E2 reactions with examples **6 marks**

(ii). Discuss the role of nucleophile and solvent in nucleophilic substitution reaction. **4 marks**

24. Explain the following reactions with mechanism **5 + 5 = 10 marks**

(i). FriedelCraft's alkylation reaction (ii). Reimer – Tiemen reaction

25. How does diethyl ether react with the following : **5x2 = 10 marks**

(i). PCl_5 (ii). CH_3COCl (iii). HI (iv). H_2SO_4 (v). Cl_2 / hν

26. Write notes on the following reactions with mechanism

(i). Perkin's reaction **3 marks**

(ii). Benzoin condensation **3 marks**

(iii). Cannizaro reaction **4 marks**

27. Starting from acetic acid how will you prepare **5x2 = 10 marks**

(i). Trichloro acetic acid (ii). Acetyl chloride (iii). Acetamide

(iv). Acetic anhydride (v). Methane

28. (i). What is Wittig reaction? Explain its mechanism. **5 marks**

(ii). Discuss the action of heat on various hydroxy acids. **5 marks**

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