



**LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034**

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

**SECOND SEMESTER – APRIL 2013**

**CH 2506/CH 2504/CH 2502 - CHEMISTRY OF HYDROCARBONS**

Date: 30/04/2013  
Time: 9:00 - 12:00

Dept. No.

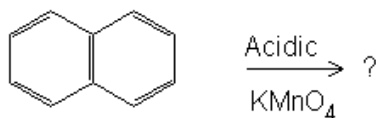
Max. : 100 Marks

**PART – A**

Answer all the questions:

(10 x 2 = 20)

1. What is Huckel's rule? Give one example.
2. Draw the structure of Hex-3-ene-5-yne.
3. How will you prepare n-butane using Wurtz reaction?
4. How does cyclopropane react with
  - i.  $H_2/Ni$
  - ii.  $HI$
5. What is Hoffmann's rule?
6. Write the products obtained when propyne reacts with  $NaNH_2$ .
7. Complete the reaction



8. Explain why phenol is nitrated more readily than benzene.
9. What is trans elimination? Give one example.
10. Write any two uses of acetylene.

**PART – B**

Answer any EIGHT questions:

(8 x 5 = 40)

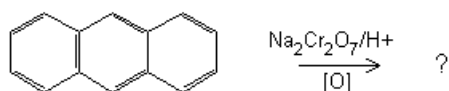
11. Explain why tertiary carbonium ion is more stable than primary carbonium ion.
12. Explain why four covalent bonds in methane are equivalent using hybridization.
13. Explain the free radical mechanism of halogenation of alkane.
14. Explain Baeyer's strain theory? Why is it not applicable to cyclohexane.
15. What is hydroboration? Explain with an example.
16. What is Anti Markonikov addition? Give its mechanism
17. Discuss the molecular orbital structure of benzene.
18. Although chlorine atom is an electron withdrawing group, it is ortho-para directing Explain.
19. Explain Haworth's synthesis of Naphthalene.
20. Explain the mechanism of Friedel Crafts acylation.
21. Explain Allylic bromination using N-Bromo Succinimide(NBS).
22. How will you synthesize 1,3 butadiene from 1-butene.

**PART – C**

Answer any **FOUR** questions:

**(4 x 10 =40)**

- 23. a. Explain resonance with suitable examples. (4)**
- b. How carbonium ions, carbanions and free radicals are obtained. (6)**
- 24. a. Using Corey-House synthesis method, how will you prepare propane from methane. (4)**
- b. What is refining of petroleum? What different fractions are obtained on refining. (6)**
- 25. a. Explain the mechanism of 1,2 and 1,4 addition of butadiene. (6)**
- b. Explain Zeigler-Natta catalysed polymerization. (4)**
- 26. a. Write a note on “stability of conjugated dienes”. (5)**
- b. Explain the mechanism of Sulphonation of benzene. (5)**
- 27. i. Explain Diel’s Alder reaction using suitable examples. (4)**
- ii. Predict the products of the following reactions: (6)**



- 28. Write short notes on:**
- a. Hyperconjugation (3)**
- b. Steric effect (3)**
- c. Keto-enol tautomerism. (4)**

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