



Date: 21-04-2016

Dept. No.

Max. : 100 Marks

Time: 01:00-04:00

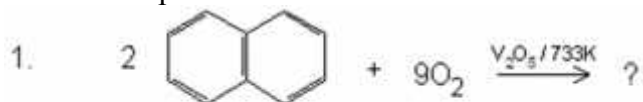
PART – A**Answer ALL the questions:****(10 x 2 = 20 marks)**

1. What are free radicals? How are they obtained?
2. Draw the structure corresponding to the following IUPAC name.
3,5 –Dimethyl-4-hexen-1-yne.
3. How will you prepare propane using Corey-House alkane synthesis?
4. What are the products formed when cyclopropane reacts with Cl₂ in the presence of UV light?
5. What is peroxide effect? Give an example.
6. Write any two uses of acetylene.
7. Name the electrophiles that take part in the sulphonation and nitration of benzene.
8. Write the structure and use of naphthalene.
9. What is catalytic cracking? Name the catalyst used.
10. What is trans elimination? Give an example.

PART – B**Answer any EIGHT questions****(8 x 5 = 40 marks)**

11. a) What is keto-enol tautomerism? Give an example. (3)
b) Explain why compounds like C₆H₅CHO and C₆H₅COC₆H₅ don't exhibit keto-enol tautomerism. (2)
12. Arrange the following free radicals in increasing order of stability and explain your answer.
C₂H₅, (C₂H₅)₂C(C₂H₅), (C₂H₅)₂CH, CH₃
13. Explain the free radical mechanism of halogenation of alkane.
14. What is the composition of petroleum? Write a note on cracking of petroleum.
15. Illustrate Saytzeff rule with an example.
16. Predict the products of the following reactions. (3+2)
1. $\text{CH}_3 - \text{CH} = \text{C} \begin{matrix} \text{CH}_3 \\ \text{CH}_3 \end{matrix} + \text{O}_3 \longrightarrow ? \xrightarrow{\text{Zn/H}_2\text{O}} ?$
2. $3\text{CH}_3 - \text{C} \equiv \text{CH} \xrightarrow[500^\circ\text{C}]{\text{Red hot iron tube}}$
17. Explain the acidic nature of acetylenic protons.
18. Discuss the mechanism of Friedel crafts alkylation of benzene.

19. Predict the products



(2+1.2+1.2)

20. Explain Diel's alder reaction by taking two examples.

21. Write a short note on the stability of conjugated dienes.

22. Define polymerization. Explain Zeigler-Natta catalyzed polymerization of alkenes.

PART – C

Answer any **FOUR** questions.

(4 x 10 =40 marks)

23. a. What is meant by hyperconjugation ? Why is it also termed no-bond resonance? (5)

b. Tertiary carbonium ion is more stable than secondary carbonium ion. Explain. (5)

24. a. Write any two methods of preparation of cycloalkanes. (5)

b. Explain Baeyer's strain theory. Why is it not applicable to cyclohexane? (5)

25. a. What is hydroboration of alkenes? Explain with mechanism. (5)

b. Discuss the mechanism of addition of HBr to 1,3 butadiene. (5)

26. a. What is meant by Markonikoff's addition? Give its mechanism. (4)

b. Explain Haworth's synthesis of Naphthalene. (6)

27. Discuss the effect of substituents on the orientation and reactivity of benzene.

28. a. State Huckel's rule. Prove that anthracene is aromatic using Huckel's rule. (4)

b. How will you synthesize the following compounds from benzene

i. Acetophenone ii. Styrene iii. Chlorobenzene. (6)

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