



Date: 16-06-2022

Dept. No.

Max. : 100 Marks

Time: 01:00 PM - 04:00 PM

PART-A

Answer ALL the Questions:

(10 x 2 = 20)

1. Differentiate between homolytic and heterolytic cleavages.
2. Draw the structure corresponding to the following IUPAC name 3,5 –Dimethyl-4-hexen-1-yne.
3. Write the preparation method of propane using Corey-House alkane synthesis.
4. What are free radicals? How are they obtained?
5. Write any two uses of acetylene.
6. State Saytzeff rule.
7. How will you prepare acetone from propyne?
8. Draw the structure of naphthalene and anthracene.
9. What happens when 2-butene undergoes ozonolysis?
10. How will you convert benzene to toluene?

PART-B

Answer ANY EIGHT Questions:

(8 x 5 = 40)

11. Explain the formation and stability of free radicals.
12. Discuss the keto-enol tautomerism of carbonyl compounds.
13. Prepare the following alkenes by dehydrogenation reaction.
 - (i) propane to propene
 - (ii) n-butane to 2-butene
 - (iii) 2-methylpentane to 4-methylpent-2-ene
 - (iv) cyclohexane to cyclohexene
 - (v) ethane to ethylene
14. Explain with mechanism: Diels-Alder reaction.
15. Discuss the acidic nature of alkynes.

16. Describe the method of synthesis of 1-propanol from propylene by using hydroboration method.
17. Explain Baeyer's strain theory.
18. Justify the following i) tertiary carbocation is more stable than primary carbocation ii) Primary carbanion are more stable than tertiary carbanion.
19. Discuss the mechanism of addition of water to alkyne.
20. Explain the mechanism of Friedel-Craft alkylation of benzene.
21. Outline the synthesis of cycloalkanes by Dieckmann ring closure reaction.
22. Distinguish between tautomerism and resonance with an example.

PART-C

Answer ANY FOUR Questions:

(4 x 10 = 40)

23. (a) Tertiary carbonium ion is more stable than phenylation. Explain. (5)
 (b) What is meant by hyperconjugation? Explain with suitable examples. (5)
24. (a) Write any two methods of preparation of cycloalkanes. (5)
 (b) Discuss the stability of cyclohexane. (3 + 2)
25. (a) Discuss the mechanism of hydroboration of propylene. (5)
 (b) Outline the synthesis of 1,2- and 1,4-addition reaction of butadiene with HBr. (5)
26. (a) What is meant by Anti-Markonikoff's addition? Give its mechanism. (5)
 (b) Explain Haworth's synthesis of Anthracene. (5)
27. (a) Explain the preparation of benzene from coal tar. (5)
 (b) How will you synthesize the following compounds from benzene?
 (i) Benzophenone (ii) Styrene (2.5 + 2.5)
28. Discuss the synthesis and chemical reactions of naphthalene. (10)

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