



Date: 24-04-2018

Dept. No.

Max. : 100 Marks

Time: 01:00-04:00

PART-A

Answer ALL questions. Each question carries two marks:

(10 x 2 =20 marks)

1. What is homolytic cleavage?
2. Mention the hybridization and geometry of ethene.
3. How will you prepare ethane from chloromethane?
4. What are conformers?
5. State Hoffmann rule.
6. Write the cis-trans isomers of 2-chloro-3-fluoro-2-butene.
7. What happens when 2-butene undergoes ozonolysis?
8. How will you synthesize ethyne from 1,2-dibromoethane?
9. State antiaromaticity.
10. How is naphthalene converted into decalin?

PART-B

Answer EIGHT questions. Each question carries five marks:

(8 x 5 =40 marks)

11. Explain the formation and stability of carbocation.
12. Write a short note on steric effect.
13. Explain the keto-enol tautomerism with suitable example.
14. Explain Baeyer's strain theory.
15. Describe any two methods of preparation of cycloalkanes.
16. Explain the mechanism of hydroboration.
17. Discuss syn-anti notations with suitable examples.
18. Discuss the mechanism of addition of water to alkyne.

19. Explain the properties of conjugated alkynes.
20. Predict the major products formed when p-nitrophenol and m-bromochlorobenzene undergo nitration.
21. Explain the mechanism of Friedel-Craft alkylation of benzene.
22. How is phenanthrene synthesized from naphthalene?

PART-C

Answer any FOUR questions. Each question carries ten marks: (4 x 10 =40 marks)

- 23.a. Describe the hybridization and geometry of benzene. (5)
- b. Explain the formation of carbene and benzyne. (5)
- 24.a. Write the sulphonation and nitration reactions of alkanes. (5)
- b. Discuss the conformational analysis of n-butane. (5)
- 25.a. Explain the hydrogen bromide addition across 1-propene in different experimental conditions. (5)
- b. Discuss the mechanism of hydrohalogenation of dienes. (5)
- 26.a. Discuss the mechanism of allylic bromination by NBS. (5)
- b. Explain the acidity of alkynes with suitable reactions. (5)
- 27.a. Briefly discuss the nitro-acinitrotautomerism with suitable examples. (5)
- b. Discuss the mechanism of Halogenation of benzene. (5)
28. Discuss the chemical reactions of naphthalene. (10)
