



Date: 27-04-2018
Time: 09:00-12:00

Dept. No.

Max. : 100 Marks

PART – A

Answer ALL the questions. Each question carries two marks:

(10 × 2 = 20 marks)

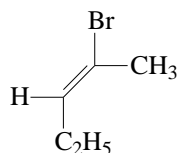
1. Nitromethane is acidic. Why?
2. What is diazotization?
3. Predict the product for the reaction of furan with maleic anhydride.
4. Draw the structures of citral and coniine.
5. What are the possible geometrical isomers of 2, 4-hexandiene?
6. Draw the conformers of ethane.
7. Mention the conditions for optical activity.
8. What is Walden's inversion?
9. Claisen's rearrangement is an example of intramolecular rearrangement. Justify.
10. Give the mechanism of Beckman rearrangement.

PART – B

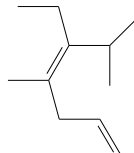
Answer any EIGHT questions. Each question carries five marks:(8 × 5 = 40 marks)

11. How are the following prepared from benzene diazonium chloride?
a) *p*-hydroxyazobenzene b) methyl orange
12. How would you prepare *o*, *m* and *p*-dinitrobenzene from benzene?
13. Explain Skraup synthesis.
14. Give the structure and mention any two functions of the following: a) nicotine b) menthol
15. Effect the following conversion using a suitable mechanism:
a) Benzamide to aniline b) Phthalimide to aminoethane
16. Give the mechanism of Pinacol – pinacolone rearrangement reaction.
17. Explain various methods used to distinguish geometrical isomers.
18. Explain the conformational analysis of *n*-butane using a potential energy diagram.
19. Assign E/Z notation and predict the IUPAC nomenclature for the following compounds:

a)



b)

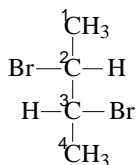


20. Explain optical activity in allenes.

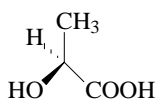
21. Account for the reactivity of pyrrole and pyridine toward nucleophilic substitution reactions.

22. Using Cahn-Ingold-Prelog rules assign R/S notation for the following:

a)



b)



PART – C

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

23. a. Discuss the basicities of 1°, 2°, and 3° amines in gas phase and in aqueous medium.

b. What is Gomberg reaction? Explain with mechanism.

24. a. Discuss the reduction reactions of nitrobenzene in basic medium.

b. Explain the general method of elucidation of alkaloids.

25. a. Write note on the stabilities of conformers of cyclohexane using potential energy diagram.

b. Distinguish maleic and fumaric acid using any two chemical methods.

26. a. Explain asymmetric synthesis using suitable example.

b. Discuss atropisomerism with suitable example.

27. a. Explain the general method of elucidation of terpenoids.

b. Explain reactivity of pyrrole, towards Friedel-Craft's reaction.

28. Predict the product and name of the following reactions.(with mechanism)

