



Date: 28-04-2018  
Time: 01:00-04:00

Dept. No.

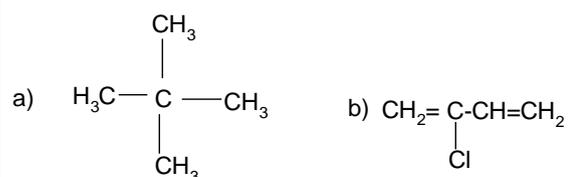
Max. : 100 Marks

PART-A

Answer ALL Questions

(10x2=20 marks)

1. Write the IUPAC names of the following compounds.



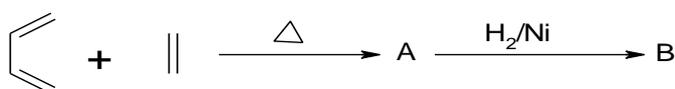
2. State Huckel's rule.

3. Why is cyclohexane more resistant to ring opening reaction than cyclopropane?

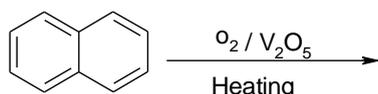
4. What happens when cyclopropane reacts with  $\text{H}_2/\text{Ni}$ ? Write the reaction.

5. State Hoffmann's rule.

6. Predict the products 'A' and 'B' in the following reaction.



7. Complete the following reaction.



8. What are conjugated dienes? Give an example.

9. Why chair form of cyclohexane is more stable than its boat form?

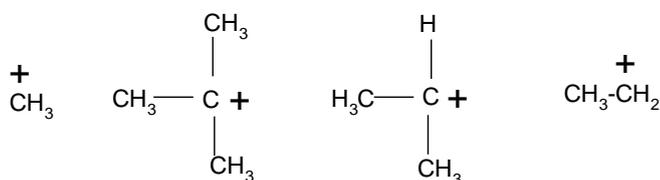
10. What do you mean by torsional strain?

## PART-B

Answer any **EIGHT** Questions

(8x5=40 marks)

11. Arrange the following carbocations in the increasing order of their stability. Explain the reason for your answer.



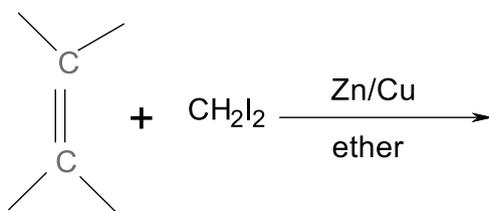
12. Discuss the hybridization involved in methane molecule.

13. Write the mechanism of chlorination of methane.

14. Write a note on the refining of petroleum.

15.a) State and explain Saytzeff rule.

b) Predict the product in the following reaction.



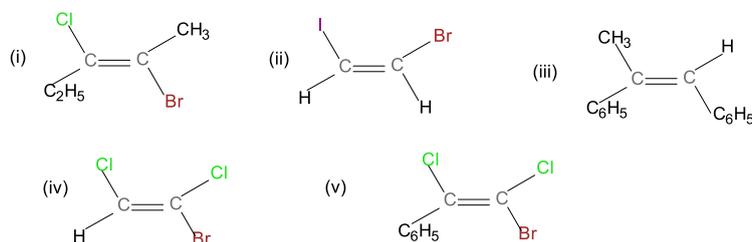
16. Write the mechanism of dehydrohalogenation reaction by taking an appropriate example.

17. Write a note on peroxide effect.

18. How naphthalene is synthesized using Haworth's method?

19. How will you prepare cumene from benzene? Explain its mechanism.

20. Give the E/Z notation for the following compounds.



21. Discuss the conformational analysis of ethane.

22. Discuss the conformational analysis involved in the interconversion of chair and boat form of cyclohexane.

**PART-C**

Answer any **FOUR** Questions (4x10=40 marks)

23.a) Explain the acid catalysed mechanism of keto-enol tautomerism. (5)

b) Comment on the aromaticity of the following compounds using Huckel's rule. (5)

(i) Naphthalene

(ii) Anthracene

24. Write short notes on the following (5+5)

a) Corey-House method

b) Baeyer's strain theory

25. Write the mechanism of the following reactions with an example for each

a) 1, 2 -addition reaction    b) Ziegler-Natta polymerization

26. a) What is NBS? Explain its usefulness in bromination reaction. (5)

b) Write any five important chemical reactions of Phenanthrene. (5)

27. Explain the reactions of anthracene with the following reagents. (10)

(i)  $\text{Br}_2/\text{FeBr}_3$  (ii)  $\text{HNO}_3 / (\text{CH}_3\text{CO})_2\text{O}$  (iii)  $\text{K}_2\text{Cr}_2\text{O}_7 / \text{H}_2\text{SO}_4$

(iv)  $\text{Na}/\text{C}_2\text{H}_5\text{OH}$

28. How are the following methods used to distinguish the geometrical isomers? (10)

(a) Melting point    (b) Dipole moment    (c) Dehydration    (d) Cyclization

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