



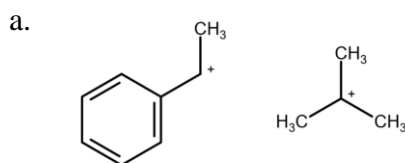
**Gandhi Institute of Engineering and Technology University, Odisha, Gunupur
(GIET UNIVERSITY)**

M.Sc. (First Semester – Regular/Supplementary) Examinations, January – 2026
24MCYPC11001 – Organic Chemistry-I
(Chemistry)

Time: 3 hrs

Maximum: 60 Marks

Answer ALL questions
(The figures in the right hand margin indicate marks)

PART – A**(2 x 5 = 10 Marks)**Q.1. Answer *ALL* questionsCO # Blooms
 Level

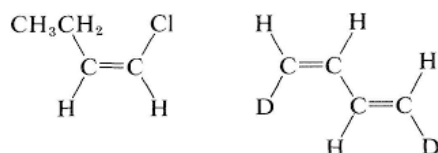
CO1 K3

Which carbocation is more stable and why?

b. How Taft equation overcomes the limitations of hammett equation?

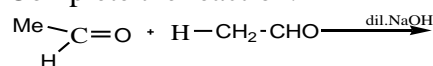
CO2 K2

c. Assign E/Z to the following



CO3 K4

d. Complete the reaction.



CO4 K4

e. Suggest the mechanism of pinacole pinacolone rearrangement.

CO5 K3

PART – B**(10 x 5 = 50 Marks)**Answer ALL the questionsMarks CO # Blooms
 Level

2. a. Discuss aromaticity of non-benzoid aromatic compound.

5 CO1 K2

b. What is Rotaxanes? How can they be synthesized?

5 CO1 K1

(OR)

c. Discuss about the classification, structure, stability and generation of carbenes.

10 CO1 K2

3.a. Discuss kinetic and thermodynamic requirements for a chemical reaction.

5 CO2 K2

b. Draw and explain potential energy diagrams for exothermic and endothermic reactions and correlate them with Hammond's postulate.

5 CO2 K4

(OR)

c. Explain the Curtin–Hammett principle with an appropriate energy diagram.

10 CO2 K2

4.a. Critically analyse the conformations of cyclohexane

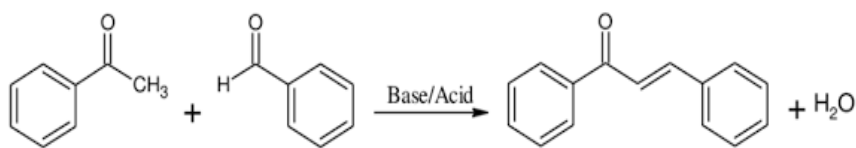
5 CO3 K4

b. Compare and contrast absolute configuration and relative configuration, using examples from stereochemistry.

5 CO3 K4

(OR)

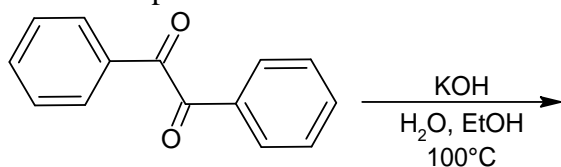
- c. Discuss racemic modification. Explain different methods of resolution of racemic mixtures 10 CO3 K3
- 5.a. Write down the mechanism of the reaction 5 CO4 K4



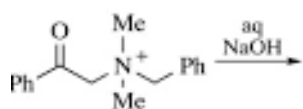
- b. 5 CO4 K4
-

Write down the mechanism of the reaction
(OR)

- c. Discuss about Knoevenagel condensation 5 CO4 K3
- d. Write the mechanism and one applications of Vilsmeier- Hack reaction. 5 CO4 K3
- 6.a. Predict the product and illustrate the mechanism of following reaction. 5 CO5 K4

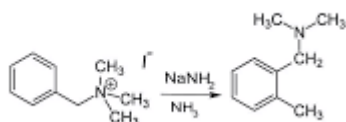


- b. Predict the product and illustrate the mechanism of following reaction 5 CO5 K4



(OR)

- c. Illustrate the mechanism of following reaction 5 CO5 K4



- d. Discuss the mechanism of Lossen Rearrangement with suitable example. 5 CO5 K4

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