QPC: RF23MSC003 | Reg. No | | | | | | | | | | | AY 23

GIET UNIVERSITY, GUNUPUR – 765022

M. Sc. (First Semester) Regular Examinations, February – 2024

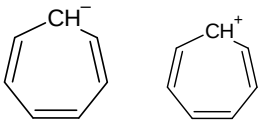
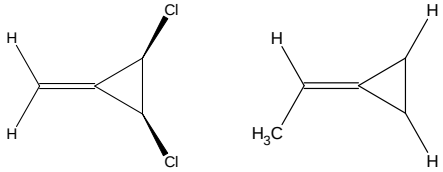
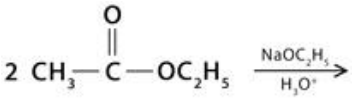
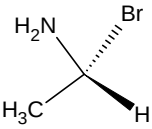
22CHPC101 – Organic Chemistry-I

(Chemistry)

Time: 3 hrs | Maximum: 70 Marks

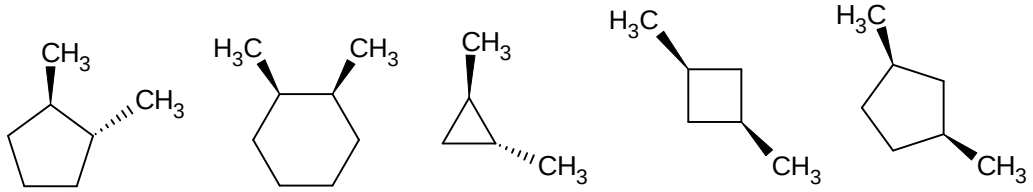
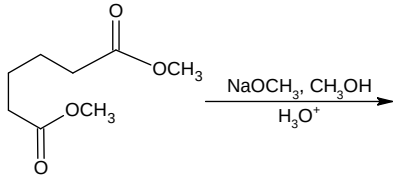
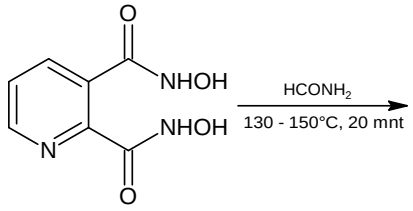
(The figures in the right hand margin indicate marks.)

PART – A **(2 x 10 = 20 Marks)**

Q1. Answer ***ALL*** questions	CO#	Blooms Level
a. Exaplain aromaticity through benzene and non benzenoid compound.	CO1	K1
b. Assign the aromatic, anti-aromatic behaviour of following compounds: 	CO1	K3
c. Mention the importance of isotopic labelling.	CO2	K1
d. Mention the differences between hard and soft acids.	CO2	K1
e. Define enantiomer and diastereomer with example.	CO3	K2
f. Predict the chairality of following compounds: 	CO3	K4
g. Write the product 	CO4	K3
h. Formaldehyde does not take part in Aldol condensation why? Explain it with example.	CO4	K2
i. Assign the R and S nomenclature for the following structure: 	CO3	K3
j. Write the structure of carbocation?	CO1	K1

PART – B **(10 x 5 = 50 Marks)**

Answer ***ANY FIVE*** questions	Marks	CO#	Blooms Level
2. a. Write in detail about inclusion compounds.	4	CO1	K1
b. Define aromatic, anti-aromatic, non-aromatic and give at least two example for each.	6	CO1	K2
3.a. Explain Huckel's theory of aromaticity with suitable examples.	6	CO1	K1
b. Write short notes on catenanes and rotaxane.	4	CO1	K1
4. a. Derive Hammett equation to correlate substituent and reaction constant.	5	CO2	K1
b. What is HSAB principle?	5	CO2	K2
5.a. The reaction of 1,3-butadiene with HBr at-80°C and 40°C give additional products with a variation in composition. Explain.	6	CO2	K4

b.	How do you depict the exothermic and endothermic reaction in a potential energy diagram?	4	CO2	K1
6. a.	Write notes on stereochemistry of spiranes.	5	CO3	K2
b.	Assign the chairality of following compounds: 	5	CO3	K3
7.a.	Discuss the Bayer strain theory.	5	CO3	K1
b.	Write short notes on Asymmetric synthesis	5	CO3	K2
8. a.	Predict the product and explain the mechanism of following reaction 	5	CO4	K4
b.	Predict the product and explain the mechanism of following reaction 	5	CO4	K4

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