QP Code: U25C040

Reg. No : .....

Name : .....

ST MARY'S COLLEGE (AUTONOMOUS), THRISSUR-20

III SEMESTER (FYUGP) DEGREE EXAMINATIONS, OCTOBER 2025

CHE3MN200 : ORGANIC CHEMISTRY I

2024 Admission Onwards

(Credits: 4)

Time: 2 Hours **Maximum Marks: 70**

Section A

*Answer **all**. Each question carries **3** Marks.* ***(Ceiling: 24 Marks)***

1. Is benzene an aromatic compound? Justify.
2. Predict the chain isomers of pentane.
3. List out any two organic acids.
4. What are carbenes? Mention its types.
5. Pick out the nucleophiles from the following: NH_3, OH^-, H_2O, $AlCl_3$.
6. State and draw possible conformations of methyl cyclohexane .
7. Analyze the Sawhorse projection formulas of tartaric acid.
8. Explain the role of the stationary phase and mobile phase in chromatography.
9. Define simple distillation and state one of its applications.
10. How would you apply solvent extraction to separate an organic acid from a neutral organic compound?

Section B

*Answer **all**. Each question carries **6** Marks.* ***(Ceiling: 36 Marks)***

11. Outline the bonding and hybridization in ethylene.
12. Prepare a short note on the types of hydrogen bonding.
13. Illustrate [4+2] cyclo-addition reaction with an example.
14. Write a short note on hyper-conjugation.
15. Briefly explain Electromeric effect.
16. Illustrate pericyclic reaction with an example.

Turn Over

17. Evaluate the use of Sawhorse and Newman projections in stereochemistry.

18. Analyze the principle of thin layer chromatography, outline its procedure, and illustrate with suitable examples.

Section C

*Answer **any one**. Each question carries **10** Marks.* ***(1x10=10marks)***

19. Explain Inductive effect and compare the acid strengths of acetic acid and chloroacetic acid.

20. Explain the different conformations of butane. Identify the most stable conformation and justify your answer. Draw the corresponding potential energy diagram.

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