**S.NO: 22N1-PCH** **Course Code: PGQJ**

**A.D.M.COLLEGE FOR WOMEN, NAGAPATTINAM**

(AUTONOMOUS)

**M. Sc. (Chemistry) Degree Examination**

III Semester – November 2022

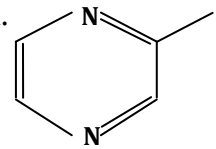
**CC VI – ORGANIC CHEMISTRY II**

**Time: 3 hours** **Maximum Marks: 75**

**Section –A** **10X2=20**

Answer **ALL** the Questions:

1. Give an example for Wagner-Meerwein rearrangement.
2. What is Sandmeyer reaction?
3. What are ortho-/para-directing groups in aromatic electrophilic substitution reactions? Give examples.
4. pKa value for phenol is 10.00, $\rho$ value for the ionization of phenol is 2.11 and $\sigma_{m\text{-}}NO_2 = 0.71$. Calculate $pK_{m\text{-}}NO_2$.
5. What is Gimann reagent? What is its synthetic use?
6. Give an example for benzoin condensation.
7. Name the compound.




8. Draw the structure of the compound, 1-(aziridin-2-yl)ethan-1-one.

9. What is the structure of camphor?

10. What is the structure of androsterone?

**Section –B** **5X5=25**

Answer **ALL** the Questions:

11. a) Explain benzyne mechanism in detail. Give an example.

**(or)**

b) Discuss the mechanism of Chichibabin reaction with an example.

12. a) Show that Hammett equation is a linear free energy relationship.

**(or)**

b) Discuss the reactivity and orientation of monosubstituted benzenes with suitable examples.

13. a) Discuss Zaitsev and Hofmann rules in elimination reactions with examples.

**(or)**

b) Discuss the mechanism of addition of halogens to a double bond with its stereochemistry.

14. a) How are pyrrolidines and tetrahydrofuran synthesized?

**(or)**

b) Discuss the reactivity of aziridines and oxiranes with examples.

15. a) How are terpenoids classified? Give examples for each type.

**(or)**

b) What are alkaloids? Briefly explain the classification of alkaloids.

**Section –C** **3 X 10 = 30**

Answer any **THREE** Questions:

16. Discuss the $S_N1$ and $S_N2$ mechanisms in detail with necessary evidences.

17. (a) Explain Taft equation.

(b) Discuss briefly the mechanism of SE1 and SE2 reactions.

18. (a) Explain ozonolysis ant its synthetic and analytical applications.

(b) What is Bredt's rule? Give an example.

19. (a) How are pyrimidines and purines synthesised?

(b) Explain any two reactions of imidazole.

20. Explain Corey's synthesis of longifolene with necessary reagents.