

**M.Phil/Pre Ph.D Regular & Supplementary Examinations – OCTOBER, 2023**

**R180203**

**Paper –III: Research specialization in Chemistry.  
Chemistry**

Time : 3 hrs

Maximum Marks : 100

**Answer One Question from Each Unit  
All Questions Carry Equal Marks**

**UNIT – I**

1. (a) Write the principle of distillation technique and write the purification Benzene, hexane and their drying process.

**OR**

- (b) Write the purification process of Toluene, Xylene and Methanol and their drying method.

**UNIT – II**

2. a) Write the preparation of the following reagents  
i) Sodium granules, ii) Sodium alkoxide, iii) Grignard reagent (Organo platinum)

**OR**

- b) Write the preparation of the following reagents:  
i) organoboranes, ii) Sodium wire, iii) aryl lithium.

**UNIT – III**

3. a) Write and explain the mechanism of the following organic reactions with examples.  
i) Substitution reactions, ii) Elimination reactions.

**OR**

- b) What is Retro synthetic analysis? Explain Linear and convergent synthesis with examples.

**UNIT – IV**

4. a) Write and explain the formation and stability of Carbonium ions. Explain the mechanism of Fries rearrangement.

**OR**

- b) Write and explain the mechanism of Vielsmayer reaction. Explain the method of Sharpless asymmetric epoxidation giving examples.

**UNIT – V**

5. a) Discuss the Hetero cyclic chemistry of Quinoline, Carbazole and Indole.

**OR**

- b) Discuss the Hetero Cyclic chemistry of Isoquinoline, Imidazole and oxazole.

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