LOYOLA COLLEGE (AUTONOMOUS) CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – **CHEMISTRY**

FIFTH SEMESTER – **APRIL 2025**

UCH 5501 – ORGANIC FUNCTIONAL GROUPS - II

Date: 24-04-2025 Dept. No. Max. : 100 Marks

Time: 01:00 PM - 04:00 PM

SECTION A

Answer ANY FOUR of the following **(4 x 10 = 40)**

1. Explain Norrish type I and Norrish type II reactions.
2. Describe the mechanism of benzoin and Claisen condensation reactions.
3. Discuss the effect of electron withdrawing and electron releasing substituents on the acidity of carboxylic acids with examples.
4. Write any one preparation and four chemical properties of acid chlorides.
5. Describe the inter and intramolecular mechanism of Fries rearrangement reaction.
6. How will you prepare diazomethane? Write any four of its synthetic applications.
7. What are organo metallic compounds? How are they classified?
8. a) Describe any four synthetic applications of Gilman's reagent.
   b) Discuss any one method of preparation for cinnamic acid. (7+3)

SECTION B

Answer ANY THREE of the following **(3 x 20 = 60)**

9. a) Describe the preparation, properties and any six synthetic applications of cyanoacetic ester.
   b) Write one method of preparation for each adipic acid and glutaric acid. (10+10)
10. Discuss the mechanism of pinacol-pinacolone and Beckmann rearrangement reactions with examples.
11. Explain the preparation and any six synthetic applications of Grignard reagent.
12. How will you prepare the Frankland's reagent? Write any five synthetic applications of Frankland's reagent.
13. Write the mechanism of the Wolf-Kishner reduction and MPV reduction reaction of acetone. Mention the merits of both the reduction reactions.
14. a) Predict the mechanism for the conversion of primary amide to primary amine.
    b) Predict the product formed by action of heat on hydroxy and amino acids. (10+10)
