



RAN-19030802020001

M. Sc. (Sem. - II) Examination September - 2025

Chemistry (Paper - II) Organic Chemistry

Time: 3 Hours]
[Total Marks: 70
સૂચના : / Instructions

(1) ઉપરોક્ત દર્શાવેલ વિગતો ઉત્તરવહી પર અવશ્ય લખવી.

Fill up strictly the above details on your answer book.

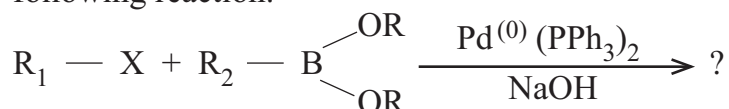
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Student's Signature

Q. 1. Answer any three of the following. (18)

- a. Give the end product and name of the reaction and discuss the mechanism of the following reaction.



- b. Give general nature, reaction mechanism and synthetic application of Hell-Volhard Zelinsky reaction.
 c. Give general nature, reaction mechanism and synthetic application of Dakin reaction.
 d. Give mechanism and synthetic application of Leucart reaction.

Q. 2. Answer any three of the following. (18)

- a. Discuss the Aromaticity of benzene and Cyclobutadiene using frost circle diagram.
 b. Discuss the concept of resonance and its effects on the chemical stabilisation.
 c. Cyclopentadienyl cation is not aromatic while Cyclopentadienyl anion is aromatic. Explain this example via REPE method.
 d. Discuss the preparation and aromatic character of dipositive and dinegative ions giving illustration.

Q. 3. Answer any three of the following. (18)

- a. What is crown ether ? Discuss its organic synthesis in detail.
 b. Explain sharpless epoxidation giving mechanism and two illustrations.
 c. Give name and structure of three hypervalent iodine reagents. Give synthesis of DMP (Des- Martin Periodinate). Discuss its application in organic synthesis.
 d. Give the preparation and discuss application of DDQ reagent.

Q. 4. Answer any three of the following. (16)

- a. Discuss the photochemistry of α, β unsaturated ketones.
 b. Discuss photochemistry of conjugated Olefins.
 c. Discuss mechanism involved in the photochemical intermolecular hydrogen ion abstraction reaction.
 d. Give the end product obtained by photoreduction of benzophenone in isopropyl alcohol and Toluene. Discuss its mechanism.