2403080204050002
EXAMINATION JUNE- 2025
MASTER OF SCIENCE (CHEMISTRY) (FOURTH SEMESTER)
CHEMISTRY PAPER -5
SKILL ENHANCEMENT : GREEN CHEMISTRY

[Time: As Per Schedule] **[Max. Marks: 35]**

Instructions:

1. Fill up strictly the following details on your answer book

a. Name of the Examination: **MASTER OF SCIENCE (CHEMISTRY) (FOURTH SEMESTER)**

b. Name of the Subject: **CHEMISTRY PAPER -5 SKILL ENHANCEMENT: GREEN CHEMISTRY**

c. Subject Code No: **2403080204050002**

2. Sketch neat and labelled diagram wherever necessary.

3. Figures to the right indicate full marks of the question.

4. All questions are compulsory.

Seat No:

Student's Signature

Q.1 Answer any three of the following: **18**

(a) Explain in short about atom economy of condensation reaction. Discuss Aldol condensation and Knoevenagel condensation reaction by using water as a solvent along with their merits.

(b) Discuss role of solvent selection for greener approach. Justify with merits, how volatile organic solvents used in conventional Michael reaction is replaced by using water as a solvent?

(c) Write a note on polymer based brominating and dehydrating green reagents with their applications.

(d) Explain in short about atom economy of rearrangements. Discuss Claisen rearrangement reaction by using water as a solvent along with their merits.

Q.2 Answer any three of the following: **17**

(a) Explain with one application of following green catalysts,

(i) Polystyrene-aluminium chloride, and

(ii) Basic catalysts

(b) Write a note on polymer supported Phase Transfer Catalysts

(c) Discuss the use of molecular sieves based oxidation by using Titanium silicates & Vanadium silicates. Discuss merits of these green oxidation over conventional chromate oxidation.

(d) Discuss the role of PNBS and Bu4NBr3 for green bromination reaction.

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