

Unit IV

8. Describe the : 5,5
- (i) Host-guest chemistry
- (ii) Thermodynamic and kinetic selectivity.
9. (a) How are hydrogen bonds utilized to create
supramolecular structures ? 4
- (b) Explain the applications of supramolecules
in molecular electronics and photonic
devices. 6



35024

M.Sc. (NEP-2020)

EXAMINATION, 2025

(Second Semester)

CHEMISTRY

M24-CHE-204

Green and Sustainable Chemistry

Time : 3 Hours]

[Maximum Marks : 50

Before answering the question-paper, candidates must ensure that they have been supplied with correct and complete question-paper. No complaint, in this regard will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. **1** is compulsory. All questions carry equal marks.

Compulsory Question

1. (a) What are green solvents ? Give examples. 2
- (b) What are the limitations of solar cells ? 2
- (c) What are supercritical liquids ? Give example. 2
- (d) What are phase transfer catalysts ? Give examples. 2
- (e) What is Chelate effect ? 2

Unit I

2. Explain green chemistry and its basic principles. 10
3. (a) What are biocatalysts ? Discuss their importance in green synthesis. 5
- (b) Describe the synthesis of adipic acid as an example of green synthesis. 5

Unit II

4. Explain the various non-conventional energy resources and their relative merits and demerits. 10
5. Describe the following : 5,5
- (i) Sources of waste from chemical industry
- (ii) Polymer recycling.

Unit III

6. (a) What are ionic liquids ? Outline their industrial uses. 6
- (b) Describe the conditions for invention to be patentable. 4
7. Explain the use of catalyst in : 5,5
- (i) Metathesis
- (ii) Caprolactum synthesis.