

B.Sc.- III (CBCS Pattern) Sem-V
USCCHT12 - Chemistry Paper-IV : Green Chemistry

P. Pages : 2

Time : Three Hours



GUG/W/22/13092

Max. Marks : 50

Note : All questions are compulsory and carry equal marks.

1. a) What is green chemistry? Discuss the Need and goals of green chemistry. **5**
b) What are the different basic approaches for designing safer chemicals. **5**

OR

- c) Write a note on immobilized solvent in green chemistry. **2½**
d) Explain the maximum incorporation of the material used in the process into the final products **2½**
e) How are waste and by products prevented in green chemistry? **2½**
f) Explain any four principles of green chemistry. **2½**
2. a) Explain the following microwave assisted reaction in water. **5**
i) Hofmann Elimination ii) Hydrolysis of benzamide.
b) Explain the green synthesis of followings. **5**
i) Benzyl bromide. ii) Acetaldehyde

OR

- c) Explain the microwave assisted fries rearrangement reaction in organic solvents. **2½**
d) Discuss the synthesis of nitriles from aldehyde using green synthesis approach. **2½**
e) Explain the green synthesis of ibuprofen. **2½**
f) Explain the hydrolysis of methyl benzoate to benzoic acid in green chemistry. **2½**
3. a) Explain the role of tellurium and biocatalyst in organic synthesis. **5**
b) Explain the following ultrasound assisted reactions. **5**
i) Esterification ii) Saponification

OR

- c) Explain the use of a 'Clayan' a nonmetallic oxidative reagent for various reactions. **2½**
d) Explain the ultrasound assisted reaction with reference to Cannizaro reaction. **2½**
e) Explain the selective methylation of active methylene group using dimethylcarbonate **2½**

- f) Explain free radical bromination in green chemistry. 2½
4. a) Discuss the use of catalytic reagents in preference to stoichiometric reagents. 5
- b) Write a note on following. 5
- i) Biomimetic
- ii) Multifunctional reagents in green chemistry.

OR

- c) Explain the ultrasonic energy as energy requirement for reactions in green chemistry. 2½
- d) Write a note on combinatorial green chemistry. 2½
- e) Explain the designing of biodegradable products. 2½
- f) Write a note on starting material in green synthesis. 2½
5. Attempt **any ten**. **1x10**
- a) Name any two green solvents
- b) What is solvent less processes?
- c) Write a short note on ionic liquids in green chemistry.
- d) Give the green synthesis of citral
- e) What is the full form of BHT
- f) Write the reaction for oxidation of toluene in green chemistry
- g) Give any one ultrasound assisted substitution reaction in green chemistry
- h) What is the ultrasound assisted reaction in green chemistry?
- i) Write the short note on ultrasound assisted streakers synthesis.
- j) Write the short note on use of microwave in green chemistry
- k) Write a note on future trends in green chemistry
- l) How will you prevent chemical accidents in green chemistry.
