

B.Sc. (CBCS Pattern) Semester-V
USCCHT12 - Chemistry Paper-IV - Green Chemistry

P. Pages : 2

Time : Three Hours



GUG/W/24/13092

Max. Marks : 50

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1. a) Explain Twelve Principles of Green Chemistry. 5
- b) i) Write a note atom economy. 5
- ii) Discuss minimization of hazardous products in Green Synthesis.

OR

- c) Discuss the need of Green Chemistry. 2½
- d) Write a note on Solvents used in Green Chemistry. 2½
- e) What are different basic approaches for designing safer chemicals? 2½
- f) Write note on Ionic liquids used in Green Synthesis. 2½
2. a) Explain microwave assisted reactions in Fries rearrangement reaction. 5
- b) Give Green Synthesis of 5
- i) Ibuprofen & ii) Adipic acid

OR

- c) Explain Hoffmann elimination reaction using microwave assisted reaction in water. 2½
- d) Explain alkylation of reactive methylene compound in solid state reaction. 2½
- e) Explain hydrolysis of methyl benzoate using microwave assisted reaction in water. 2½
- f) Give Green Synthesis of Paracetamol. 2½
3. a) Explain following reaction for 5
- i) Ultra sound assisted saponification
- ii) Cannizaro's Reaction
- b) Explain the role of Tellurium in Organic Synthesis. 5

OR

- c) Explain solid state polymerization of amorphous polymers using diphenyl carbonate. 2½
- d) Explain free radical Bromination with mechanism. 2½
- e) Write a note on Strecker Synthesis. 2½
- f) Explain ultrasound assisted reaction for Reformatsky Reaction. 2½
- 4. a) Explain in detail multi functional reagents. 5
- b) Write note on energy requirement for reaction with respect to use of microwave. 5

OR

- c) Explain role of Green Chemistry in sustainable development. 2½
- d) Discuss analytical techniques to prevent generation of hazardous substance in Chemical Process. 2½
- e) Write a note on selection of starting material in Green Chemistry. 2½
- f) Write a note on combinatorial Green Chemistry. 2½
- 5. Attempt **any ten**. 1x10
- i) Define Green Chemistry.
- ii) Who is the father of Green Chemistry.
- iii) Define immobilized Solvents.
- iv) Write synthesis of ibuprofen using Green Chemistry.
- v) Explain decarboxylation using Green Chemistry.
- vi) Write Diel's Alder reaction using Green Chemistry.
- vii) Give the coupling reaction using Green Chemistry.
- viii) Write the ultrasound assisted Strecker synthesis.
- ix) Explain the solid state polymerization of amorphous polymers using diphenyl Carbonate.
- x) Define Green Solvents?
- xi) Write about Oxidation reagents in Green Chemistry.
- xii) What are protecting groups in Green Chemistry.
