

[This question paper contains 4 printed pages.]

4664

Your Roll No.

B.Sc. Prog./III

AS

EL 310 (i) – GREEN CHEMISTRY

(Admissions of 2005 & onwards)

Time : 2 Hours

Maximum Marks : 38

*(Write your Roll No. on the top immediately
on receipt of this question paper.)*

*Attempt **FOUR** questions in all.*

*Attempt **ONE** question from Section A
and **THREE** questions from Section B.*

SECTION A

1. (a) Give one example of each of the following :

(i) Green feedstock

(ii) Auxillary substance

(iii) A microorganism used in green chemical reactions

(iv) Green reagent

(v) Diels-Alder reaction

(1×5=5)

(b) Write short notes on :

(i) Goals of green chemistry

P.T.O.

(ii) Prevention of chemical accidents .

(iii) Waste minimization (2×3=6)

2. (a) State whether True or False :

(i) Benzene is a green solvent

(ii) Bromine addition to propene is 100% atom economical

(iii) "Clayan" is a green reagent

(iv) Pyridinium chloride is an ionic liquid

(v) Biocatalysis involves use of enzymes (1×5=5)

(b) Write short notes on :

(i) Microwave in organic synthesis

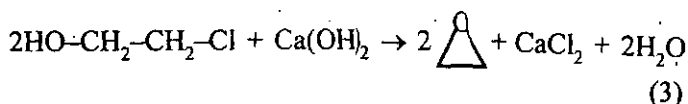
(ii) Green solvents

(iii) Microbial oxidations (2×3=6)

SECTION B

3. (a) Identify any two environmental incidents that mobilized public opinion towards awareness of environmental issues. (4)

(b) Analyze the atom economy of the following reaction :



- (c) Write the reactions involved in obtaining furfural from biomass. (2)
4. (a) Outline the conventional and green synthesis of Ibuprofen. Analyse the advantages of each step in the green method. (6)
- (b) What is "Clayan"? Illustrate its chief uses in organic synthesis. (3)
5. (a) Identify the various types of hazards that a chemical substance can pose. (2)
- (b) Yield is different from atom economy. Explain. (3)
- (c) What is the role of solvent in a chemical reaction? How is this role fulfilled in solventless reactions? Explain with the help of an example, the advantages of solventless syntheses. (4)
6. (a) State any two principles of green chemistry with suitable examples. (4)
- (b) Give the green advantages of the following reactions carried under sonication:
- (i) Saponification
- (ii) Reduction (5)

7. (a) How does microwave heating differ from conventional heating? (2)

(b) Predict the products of the following reactions:

