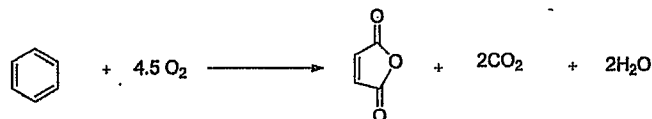


(iii) Calculate the atom economy of the following reactions:

(Mol mass: C=12, H=1, O=16, Br=80)

(a)



(b)



5. (i) What is ozone layer? Discuss its role. Name the chemicals responsible for depletion of ozone layer and explain the various reactions involved.
- (ii) What do you understand by the term Sonochemistry? Discuss how transfer of energy occurs in ultrasound assisted reaction.
- (iii) Compare heterogeneous and homogeneous catalysis in terms of green chemistry (3, 3, 3.5)

[This question paper contains 4 printed pages.]

Your Roll No.....

आपका अनुक्रमांक.....

Sr. No. of Question Paper : 6225

II

Unique Paper Code : 32173908

Name of the Paper : SEC.- Green Method in Chemistry

Name of the Course : B.Sc. (Hons) Chemistry/ B.Sc (Prog)

Semester : III/V

Duration : 2 Hours

Maximum Marks : 38

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
 2. Attempt any four questions from the Five Questions
1. (i) What is the U.S. Presidential Green Chemistry Challenge Award?
 - a) An award related to recycling
 - b) An award for industry only

- c) The only chemistry award given by the President
- d) Challenges companies to become fuel efficient
- (ii) The first listed of the 12 Principles of Green Chemistry is?
- a) Prevent waste
- b) Catalysis
- c) Atom economy
- d) Benign solvent
- (iii) Dr. Paul Anastas & Dr. John Warner created 10 Principles of Green Chemistry to reduce or eliminate the use and generation of hazardous substances?
- a) True
- b) False
- (iv) Green chemists reduce risk by?
- a) Reducing the hazard inherent in a chemical product or process
- b) Minimizing the use of all chemicals
- c) Inventing technologies that will clean up toxic sites

- d) Developing recycled products
- (v) is an excellent 'green' solvent as well as a greenhouse gas? (5×1)
- (vi) What are biocatalysts? What are the advantages of bio-catalytic conversions? Give one example of the reaction. (4.5)
2. Write short notes on
- (i) Green Chemistry in Sustainable development
- (ii) Green chemistry in pharmaceutical industry
- (iii) Solvent free reactions (3, 3, 3.5)
3. (i) Explain the efficient green synthesis of plastic made from corn.
- (ii) Explain the enzymatic interesterification reaction for the production of no- Trans fats and oils.
- (iii) How does the use of protection/de-protection group(s) reduce the atom economy of the reaction using appropriate example. (3, 3, 3.5)
4. (i) What do you mean by supercritical carbon dioxide? Discuss the chemistry of cleaning action of surfactant assisted supercritical CO₂. (3)
- (ii) How % yield is different from atom economy. Discuss any one reaction where % yield is 100% but not the atom economy. (3.5)