SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)
(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai — 600 044.
M.Sc.(Chemistry) END SEMESTER EXAMINATIONS NOVEMBER - 2023
SEMESTER - III

22PCHET3003 - Green Chemistry and Sustainable Development

Total Duration : 2 Hrs. 30 Mins. Total Marks : 60

Section B

Answer any **SIX** questions $(6 \times 5 = 30$ Marks)

1. Analyse how the selection of starting material and solvent drive conventional synthesis towards green synthesis.
2. Illustrate the green synthesis of styrene. Mention its advantages over conventional synthesis.
3. Appraise the role of catalyst in driving conventional synthesis towards green synthesis.
4. Illustrate microwave induced reactions with examples.
5. Illustrate the use of crown ethers in the following
   i) anhydride formation ii) Saponification
6. Analyze the applications of aqueous phase electrochemical synthesis of Adiponitrile and in isomerisation of alkenes
7. Examine the role of solid phase organic synthesis of Quinoline and Thiadiazepines.
8. Briefly appraise on the role of Multifunctional Reagents with suitable examples.

Section C

I - Answer any **TWO** questions $(2 \times 10 = 20$ Marks)

9. Appraise the following in the aspect of green chemistry
   i) designing of safer chemicals
   ii) energy requirement for synthesis
   iii) selection of appropriate solvents
   iv) strengthening of analytical techniques
10. Analyze the applications of polystyrene carbodiimide, NBS, dimethyl carbonate & sulfonazide polymer reagents in green synthesis.

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11. Summarize the application of ionic liquids in synthesis of pharmaceutical compounds.
12. Elaborate on the role of green chemistry in sustainable development and the industrial interests in the sustainable development

II - Compulsory question $(1 \times 10 = 10$ Marks)

13. Assess the pathway in the green synthesis of the following.
    i. Benzimidazoles
    ii. Ibuprofen
    iii. Paracetamol
    iv. chromenes

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