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B.M.S. COLLEGE FOR WOMEN, AUTONOMOUS
BENGALURU – 560004
SEMESTER END EXAMINATION – SEPT/OCT 2023

M.Sc. in Chemistry – 2nd Semester

GREEN SYNTHESIS (SOFT CORE)

Course Code: MCH205T
Duration: 3 Hours

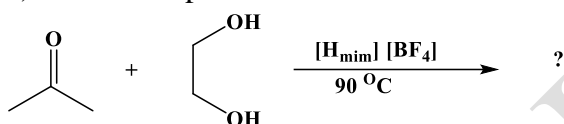
QP Code: 12011
Max. Marks: 70

Instruction: Answer Question No. 1 and any FIVE of the remaining.

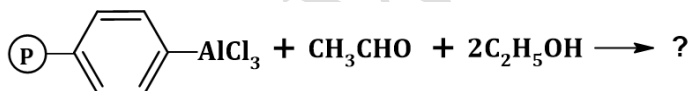
1. Answer any TEN questions.

(2X10=20)

- Suggest a suitable explanation for the reduced reaction times observed in microwave assisted reactions.
- Explain sonochemical substitution reaction with suitable example.
- Explain the term acoustic cavitation.
- Predict the product.



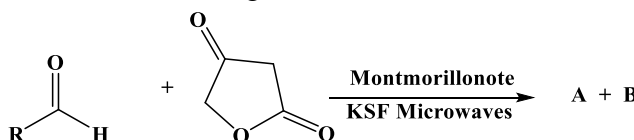
- Give the steps involved in conventional organic synthesis and the various methods employed for isolation of the product.
- Predict the product with suitable mechanism



- Mention the advantages of phase transfer catalysts in organic synthesis.
- How are crown ethers named? Illustrate with an example
- What is Ritter reaction? Give the equation
- Mention the advantages of multi component reactions.
- Comment on Ivanov reaction involving the construction of an amide.
- What are the components for the synthesis of pyrimidine derivatives from Biginelli reaction?

2. a) Give the instrumentation of: i) Ultrasonic Cleaning Bath ii) Ultrasonic Probe

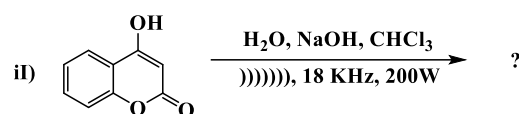
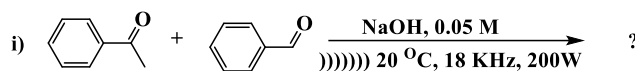
b) Predict the products in the following reaction and write the mechanism of the reaction



c) Outline the application of ionic liquid in organic synthesis.

(4+3+3=10)

3. a) Predicts the products in the following sonochemical reactions and explain their formation.



b) List the advantages, disadvantages and synthetic importance of microwave assisted organic synthesis (5+5=10)

4. a) Write a note on following

i) properties of a polymer support ii) advantages of polymer supported reagents in organic synthesis.

b) Discuss the use of polymer supported reagents in epoxide formation and Dieckmann cyclization reactions. (5+5=10)

5. a) Explain the mechanism of a phase transfer reaction with an example.

b) Give general methods for synthesis of crown ethers. Illustrate synthesis of [18]-Crown-6 and [2.2.2]cryptate. (5+5=10)

6. Give the detailed mechanism of the following reactions

a) Doebner – Miller reaction

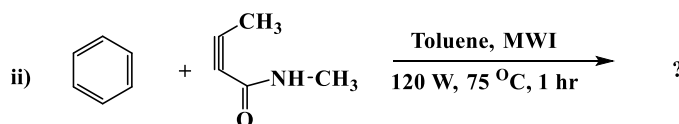
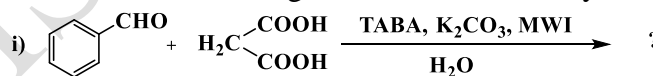
b) Hantzsch reaction

c) Barbier reaction (4+3+3=10)

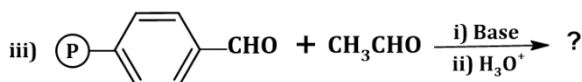
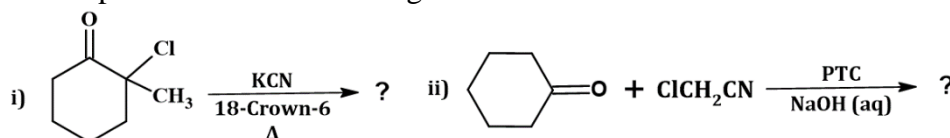
7. a) Discuss green synthetic route of Baylis-Hillmann reaction.

b) Illustrate the mechanism of Passerini-Ugi reaction giving an appropriate example. (4+6=10)

8. a) Predict the product/s for the following microwave assisted synthesis



b) Predict the products of the following reactions



c) Sketch the mechanism of Suzuki coupling reaction. (4+3+3=10)
