BMS COLLEGE FOR WOMEN AUTONOMOUS
BENGALURU-560004

END SEMESTER EXAMINATION – OCTOBER 2022
(CBCS)
M.Sc. in Chemistry- II Semester
Green Synthesis (Soft Core)

Course Code: MCH205S **QP Code:21011**
Duration: 3 Hours **Max marks: 70**

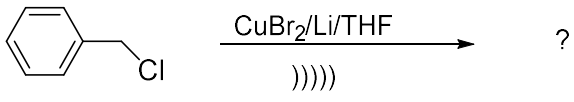
Instruction: Answer Question No. 1 and any FIVE of the remaining.

1. Answer any ***TEN*** questions **(2×10 =20)**

a. Illustrate with an example, how sonication is effective in coupling reactions.
b. What is atom efficiency? Explain with an example.
c. Write the limitations of microwave synthesis
d. Describe Diel's-Alder reaction
e. Draw the structure of [15]-crown-5 and mention the cation with which it forms a stable complex.
f. Give the application of PTC in oxidation & reduction reactions.
g. Explain the use of polymer supported aluminium trichloride in acetal formation with equation.
h. Give the synthesis of polymer bound per acid.
i. Define the Barbier reaction with an example.
j. Illustrate Baylis-Hilmann reaction with suitable example.
k. What are MCR reaction? Give its advantages
l. Formulate Jacobsen-epoxidation reaction with a suitable example.

2. a. Discuss the utility of ultrasound in the following reactions:
i. Alkylation reactions
ii. Oxidation & Reduction reactions
b. Explain the concept of microwave irradiated organic synthesis. Describe the use of microwave in *N*-alkylation and deprotection of esters & silyl ethers. **(5+5)**

3. a. Describe the phenomenon of cavitation.
b. Give the product and explain the effect of ultrasound in the following reaction



c. Describe the synthesis and application of an ionic liquid in organic synthesis.

(4+3+3)

4. a. Discuss the different steps involved in the solid support synthesis of oligosaccharides.

b. How is sulfonazide polymer prepared? Illustrate its application in diazo-transfer reaction.

c. What is cation deactivation reaction? Illustrate with equations. **(4+3+3)**

5. a. Discuss the mechanism of phase transfer catalysis taking the reaction of NaCN with 1-chlorooctane.

b. Explain the oxidation of cyclohexene with H2O2 under PTC conditions. **(5+5)**

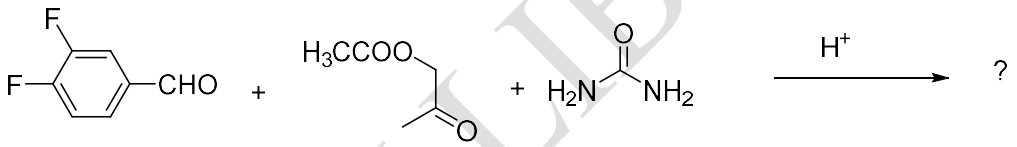
6. Give mechanisms of the following reactions.

a) Ritter reaction

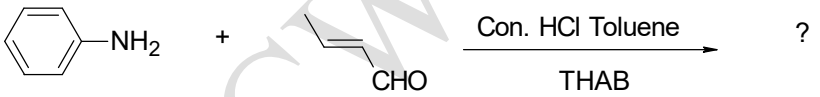
b) Passerini-Ugi reaction **(5+5)**

7. Predict the product & propose suitable mechanism for the following reactions

i)



ii)



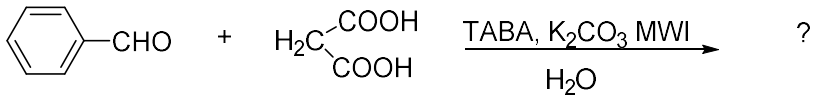
(5+5)

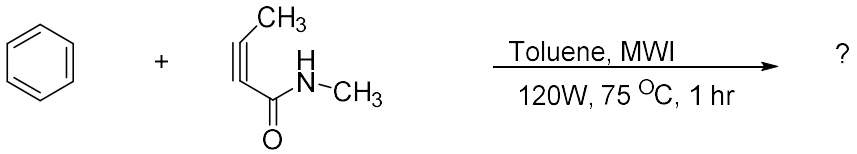
8. a Write a note on the following reactions:

i) Robinson-schopf reaction

ii) Suzuki coupling reaction

b. Predict the product/s & propose suitable mechanism for the following microwave assisted synthesis:





(5+5)

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