



Registration number:

Date:

ST. JOSEPH'S UNIVERSITY, BENGALURU-27
M.Sc. (ORGANIC CHEMISTRY) - III SEMESTER
SEMESTER EXAMINATION: OCTOBER 2023
(Examination conducted in November/December 2023)
OCH 9223 – RETROSYNTHESIS AND MODERN ASPECTS
OF ORGANIC CHEMISTRY
(For current batch students only)

Time- 2 Hours

Max Marks:50

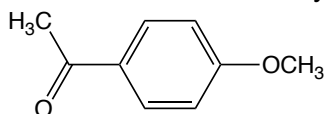
This question paper contains THREE printed pages and THREE parts

Part A

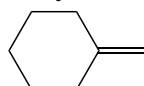
Answer any EIGHT of the following questions

(8 x 2 = 16)

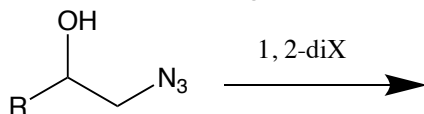
1. Carry out the RSA and write synthetic equivalents of the following molecule.



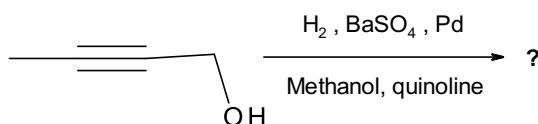
2. Mention any two desired properties of protecting groups. Suggest any one protecting group for alcohols.
3. How would you change the polarity of -R group in RX?
4. How would you synthesize the following molecule using Wittig reaction?



5. What are nonenzymatic reactions? What is the importance of biosynthetic studies?
6. What does reagent EDA stand for and what is its use in Wang's indole synthesis?
7. Why are amides less reactive towards nucleophilic addition? Name any two reagents to increase the reactivity of the amides towards nucleophilic addition.
8. Draw the structures of α - and β - sinensals responsible for the odour of orange oil.
9. Complete the following reaction.



10. Complete the following reaction which is one of the steps in convergent synthesis of the pheromone, multistriatin.



Part B

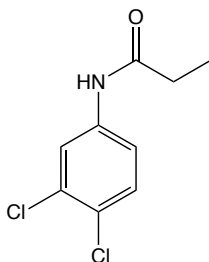
Answer any TWO of the following questions.

(2 x 12 = 24)

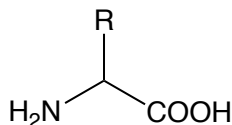
11. (a) What are tailoring reactions in natural product formation? How are they classified and what is the basis for the classification? Give any two examples of classes of compounds which undergo tailoring reactions. (6+6)
- (b) Give the steps involved in Corey synthesis of the following compound in prostaglandin intermediate synthesis via keteniminium [2+2] cycloaddition reaction.



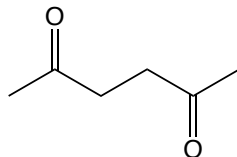
12. (a) Carry out the RSA and suggest a synthesis for the following molecule, Propanil, a weed killer. (6+3+3)



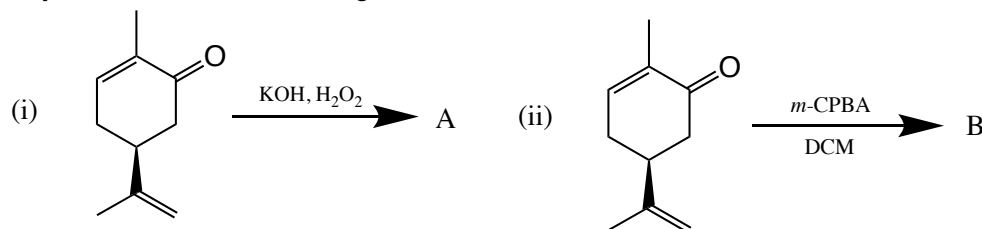
- (b) Name any three types of privileged amides and give their structure.
- (c) What do ACNQ and TEA stand for with respect to nonenzymatic transformations? Draw the structure of ACNQ.
13. (a) Make use of FGI, identify the disconnection approach and carry out the synthesis of following molecule. (4+4+4)



- (b) Show the use of epoxide in the synthesis of following molecule.



- (c) Identify A and B in the following reactions.

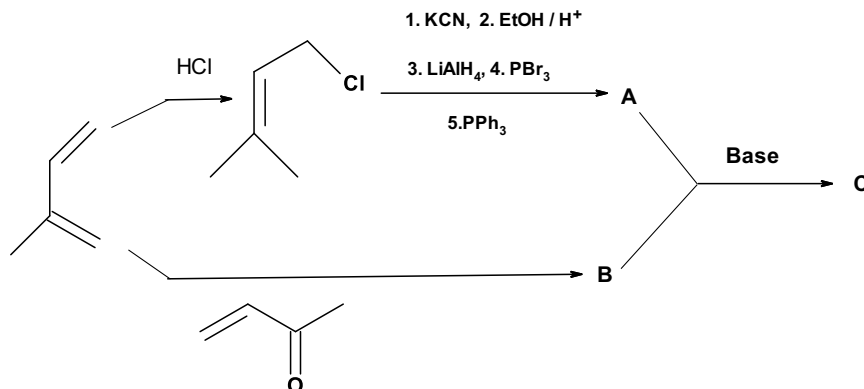


Part C

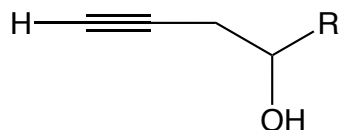
Answer any TWO of the following questions.

(2 x 5 = 10)

14. Identify the missing structures **A**, **B** and **C** in the synthesis of the sesquiterpene bisabolene **C**.

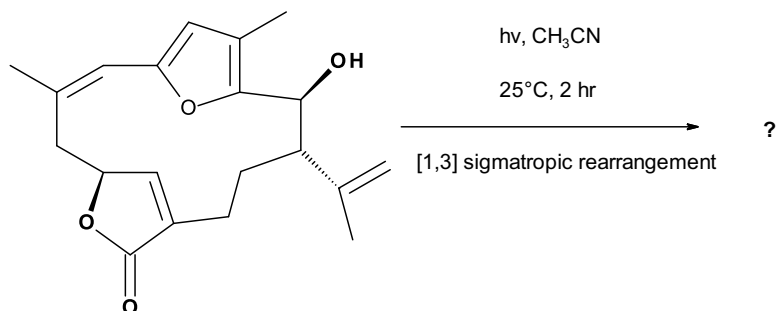


15. How do you synthesize the following molecule?

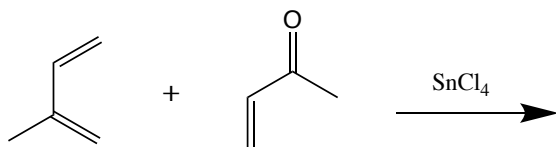


16. (a) Complete the following experimental nonenzymatic reaction. What is the significance of this reaction?

(3+2)



- (b) Identify the product formed in the following reaction.



x-----End of questions-----x