

M.Sc. CHEMISTRY
SCLS, JAMIA HAMDARD
SEMESTER-IV EXAMINATION, 2019
PAPER CODE – MCHCCO 402
ORGANIC CHEMISTRY – II

(Write your roll no. immediately at the top on receipt of the question paper)

Duration: 3 hr

Max. marks 75

Attempt All the questions.

Q1a. Briefly explain the following terms with one suitable example,

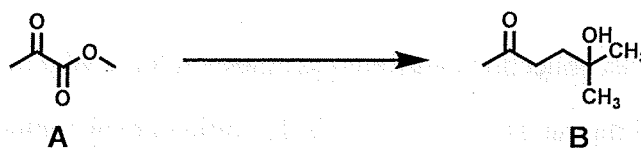
1 x 5 = 5

- | | | |
|---------------------|---------------------|--------|
| a. Retron | b. Synthon | c. FGI |
| d. Dissonant system | e. Consonant system | |

Q1b. Attempt ALL of the following questions

1 x 10 = 10

- Reserpine was extracted from which plant? Who gave the first total synthesis of Reserpine?
- Longifolene and Aphidicolin are which of terpene?
- Define seco-steroid. Give one example.
- What is Paper factor.
- What is Ritter Reaction?
- Give the structures of Vitamin D₃ and its natural precursor.
- Give the structures of Grundmann's ketone and Wieland–Miescher ketone.
- Device route to convert the give starting material (A) to product (B).

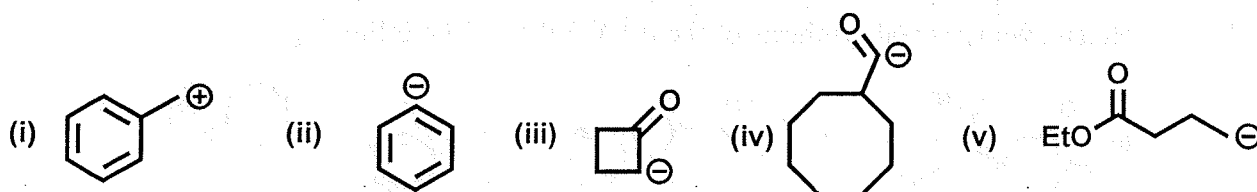


- What is Sakurai reaction?
- What is Leimgruber–Batcho indole synthesis?

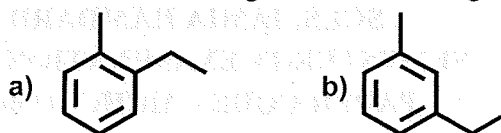
Q2. Attempt ANY THREE of the following:

3 x 5 = 15

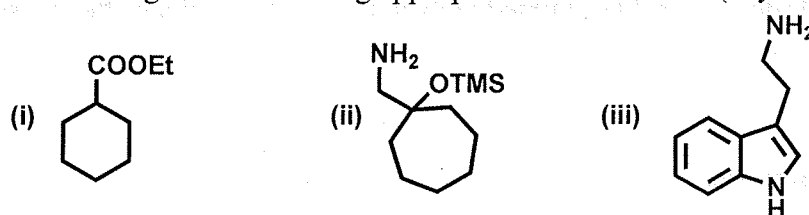
- Explain Umpolung and give possible routes for the generation of acyl anion.
- Give suitable synthetic equivalents for the following synthons



C. Devise the synthesis of the following compound using Friedel-Crafts alkylation, Friedel-Crafts acylation and reduction in correct order of events using C₆H₆ as starting material



D. Give the synthesis of the following molecules using appropriate FGA and FGI (any two).



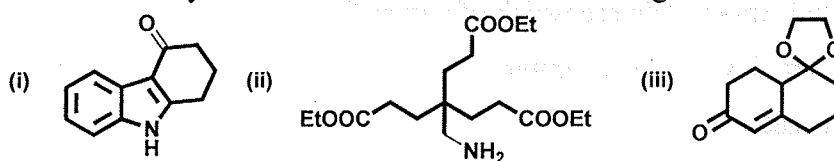
E. Devise synthetic strategy for the synthesis of following compounds using suitable cyclohexene as RETRON.



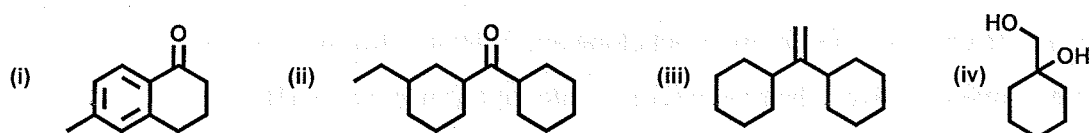
Q3. Attempt ANY THREE of the following:

3 x 5 = 15

A. Explain the best route for the synthesis **ANY TWO** of the following:



B. Explain the disconnection for **ANY TWO** the following compounds



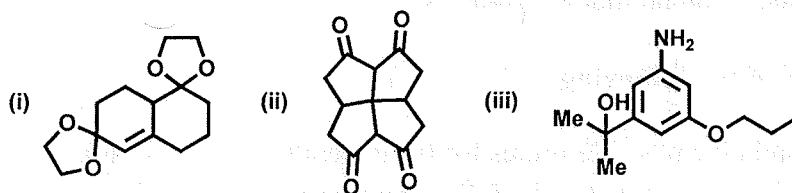
C. Briefly explain the Disconnection and Retrosynthesis **ANY TWO** of following

a. 1,4-difunctional compounds

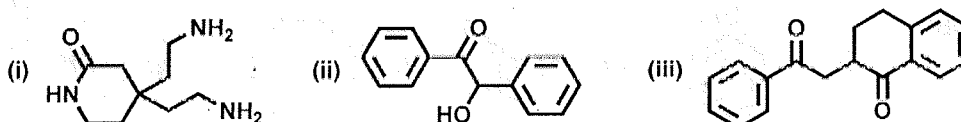
b. 1,2-difunctional compounds

c. 1, 6-difunctional compounds

D. Sketch Disconnection and Retrosynthesis of **ANY TWO** of the following with proper **Transforms**:



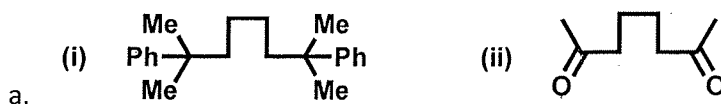
E. Explain the Retrosynthesis and synthesis of the **ANY TWO** of the following



Q4 Attempt ANY THREE of the following:

3 x 5 = 15

A. Starting from thiophene, how would you obtain the following



B. The thermal reaction of 1, 2, 3-selenodiazoles open a versatile route for the synthesis of acetylene.

Explain

C. Outline the mechanism of protection and deprotection of alcohols as silyl ether.

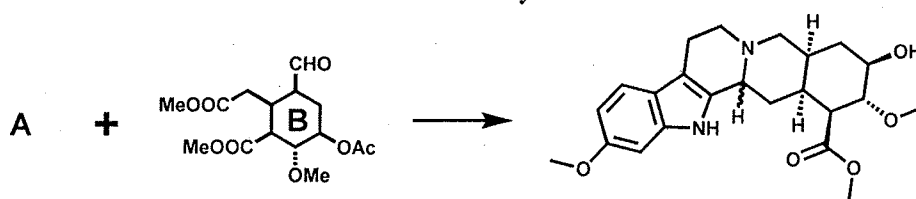
D. Explain the mechanism and application of Biginelli Reaction.

E. What are Baylis-Hillman reactions? Discuss your answer with suitable examples.

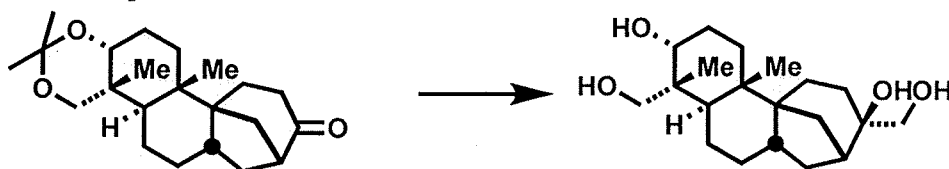
Q5. Attempt ANY THREE of the following:

3 x 5 = 15

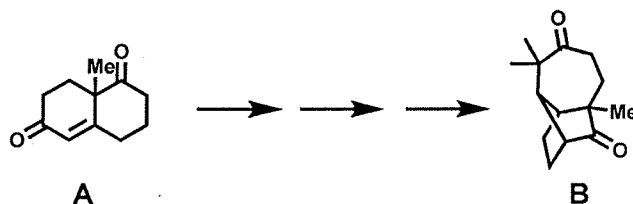
I. Draw the structure of A and devise route for the synthesis of A and B



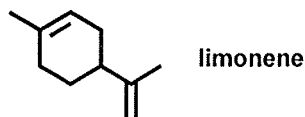
II. Provide the two possible methods for the conversion



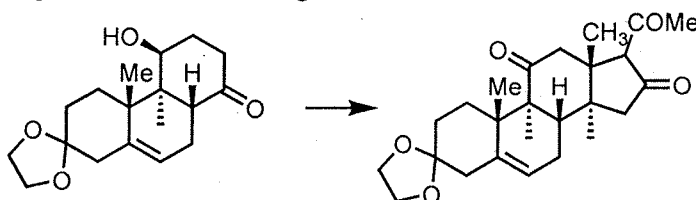
III. Complete the reaction given below for the synthesis of B from A



IV. Explain the conversion of Limonene to Juvabione



V. How will you bring about the following conversion?



-----xXx-----