

MISC Sem III
Organic Chemistry P-I

QP Code : 04680

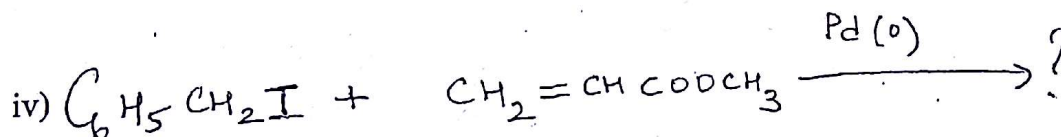
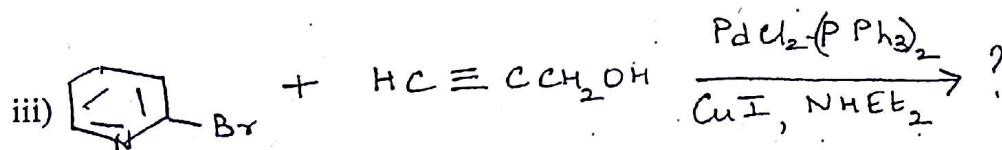
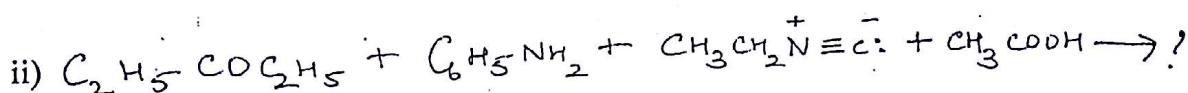
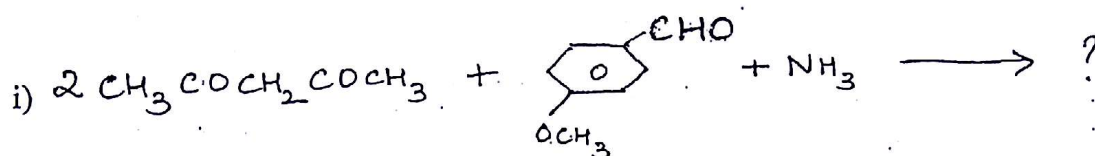
(2½ Hours)

Total Marks : 60

Note : (1) All questions are compulsory.
(2) Figures to the right indicate full marks.

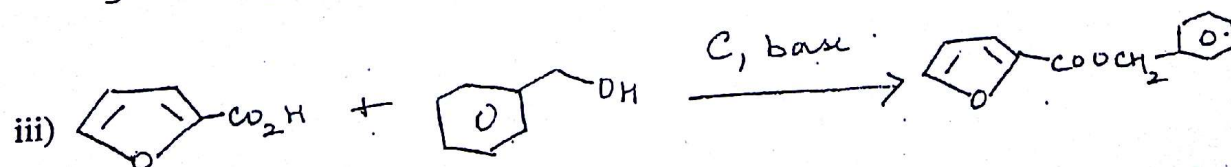
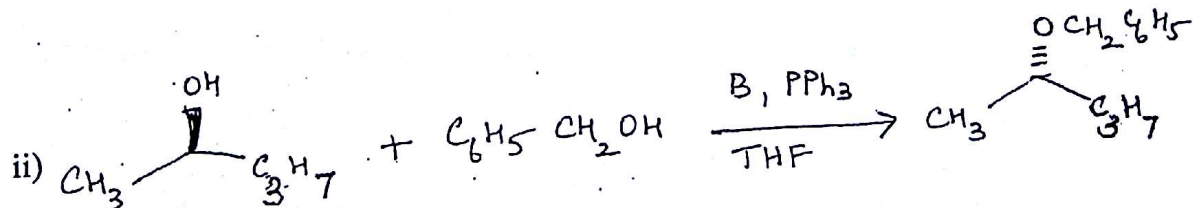
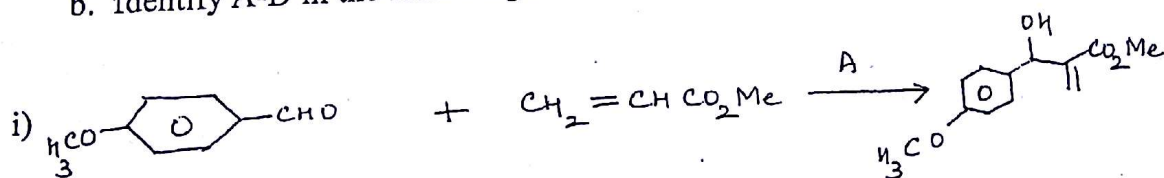
1. a. Give the product, name and mechanism of the following :- (any Two)

8

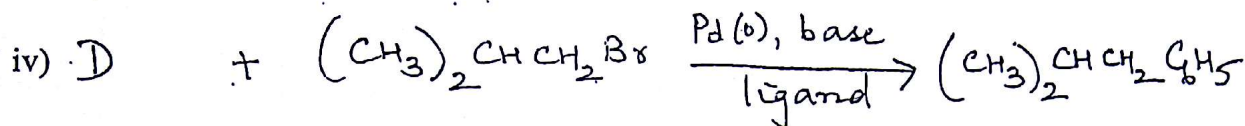


b. Identify A-D in the following reactions and name the reaction involved :-

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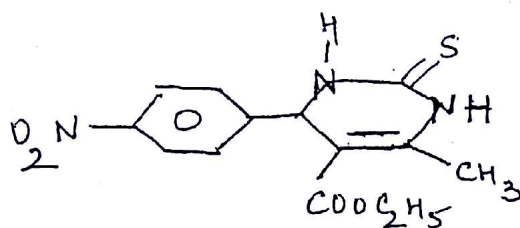
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OR

b) How can the following be prepared by a multi component reaction ?

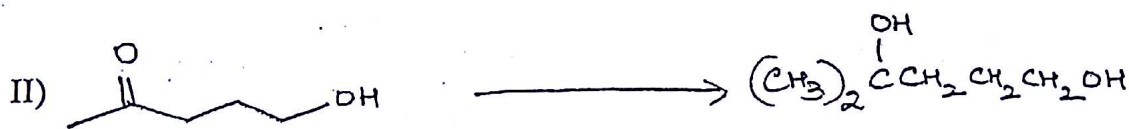
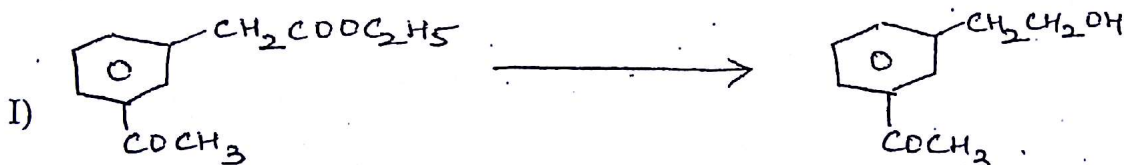
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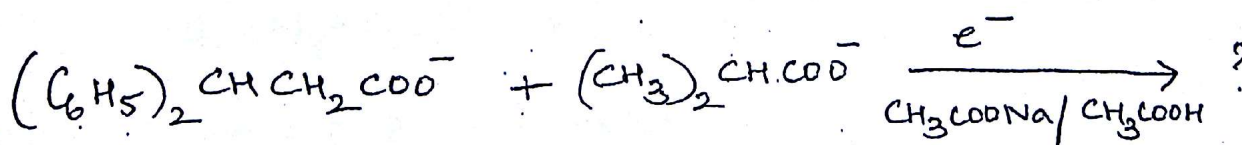
2. a. Attempt any two of the following :-

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i) Suggest synthesis of the following using the protection - deprotection protocol.

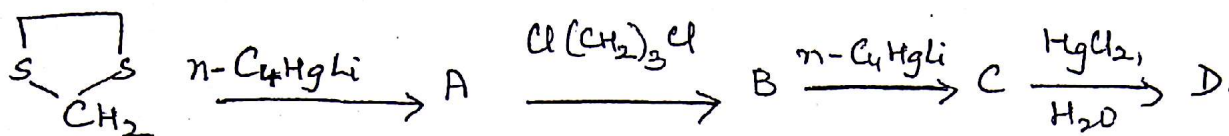


ii) Give the product, name and mechanism of the following reaction.



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iii) Complete the following reaction sequence by identifying A-D



iv) Give the equations involved in the protection and deprotection of

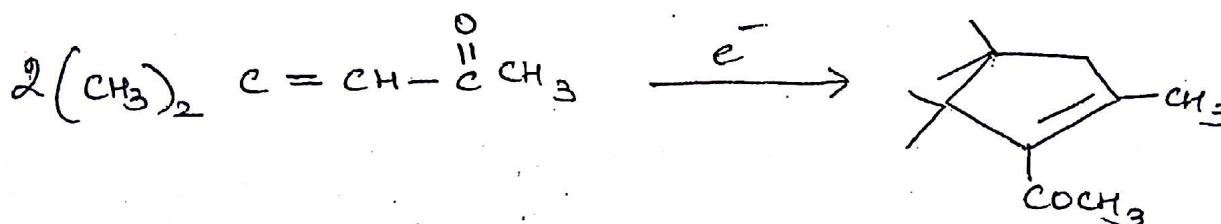
I) Carboxylic acid as amide

II) -CHO as acetal

2. b) Discuss the use of methylthiomethyl sulfoxide as acyl anion equivalent with suitable examples. 4

OR

b) Provide mechanism for the following reaction :- 4

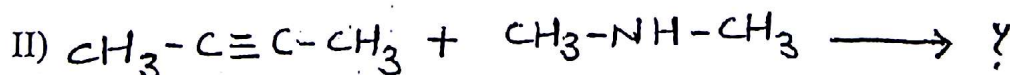
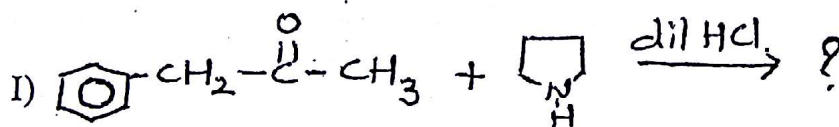


3. a) Attempt any two of the following - 8

i) Explain with suitable examples C-C bond formation by generation of carbanions in nitro compounds and phosphonates.

ii) Write a note on Bestmann Ohira reagent.

iii) Complete the following reactions and explain the mechanism involved.



iv) How can $\text{Ph}_3\text{P}^+\text{-CH}_2^-$ be converted into-

I) 3-methyl -1, 2 butadiene

II) 1-butene

Give the mechanism.

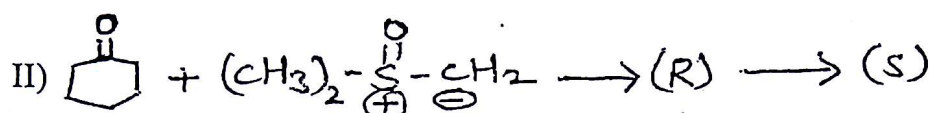
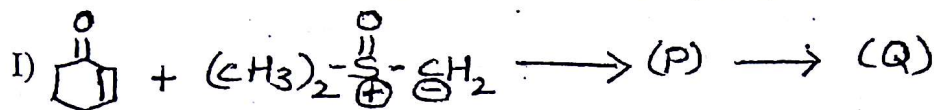
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b) Attempt any one of the following :-

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i) Discuss briefly Barton Kellogg olefination.

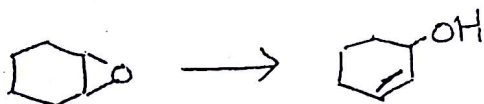
ii) Complete the following reactions identifying P, Q, R & S



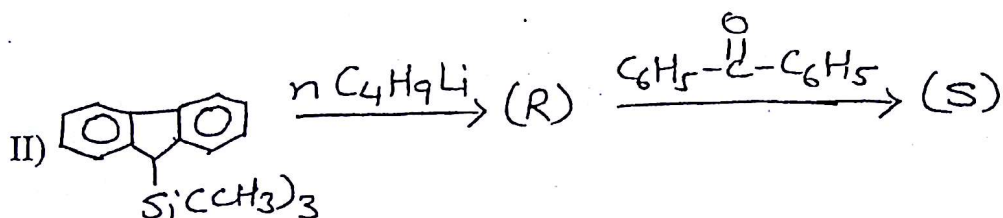
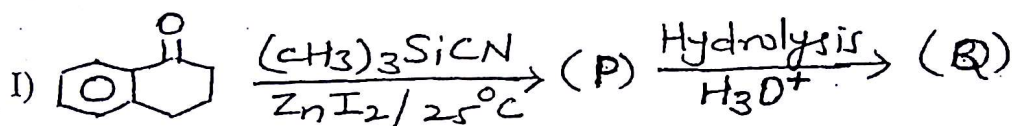
4. a) Attempt any two of the following -

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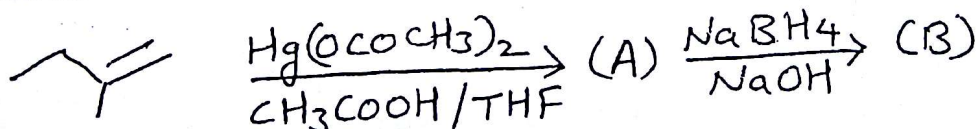
i) Give the following conversion via selenoxide



ii) Complete the following reactions identifying P, Q, R and S.

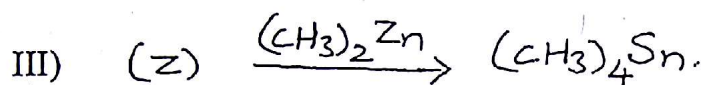
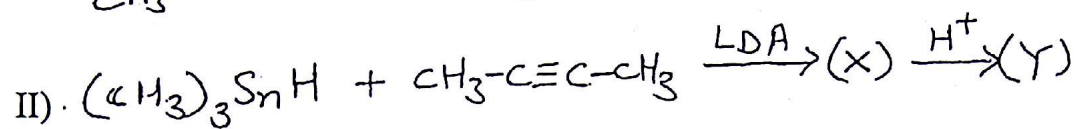
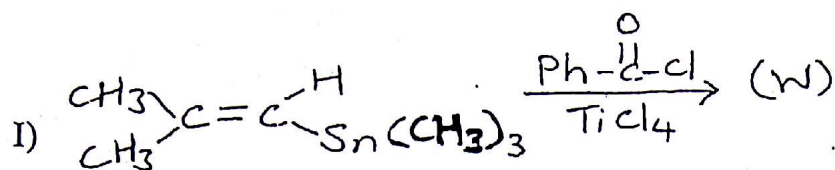


iii) Complete the following reaction giving structures of A and B. Explain the mechanism and selectivity.



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iv) Complete the following reactions identifying W, X, Y and Z.



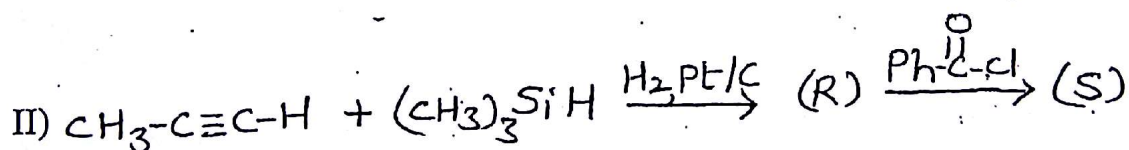
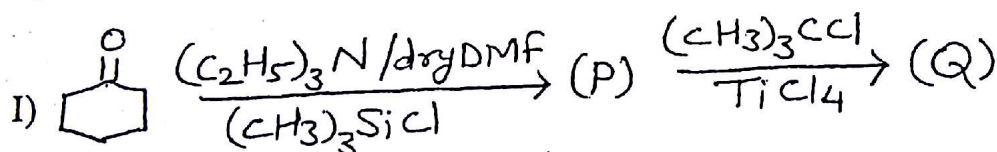
4 b) Attempt any one of the following :-

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i) Explain with stereochemistry and mechanism hydroboration of α -pinene



ii) Complete the following reaction identifying P, Q, R and S



5. Attempt any four of the following :-

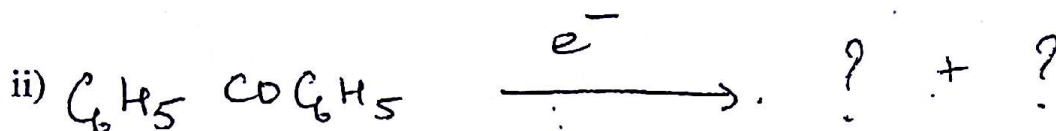
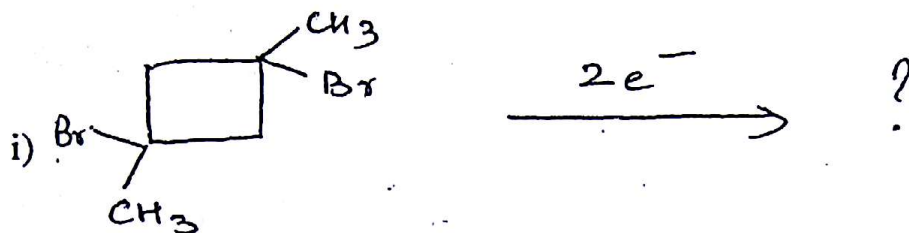
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a) Give the mechanism and one application of Passerini reaction.

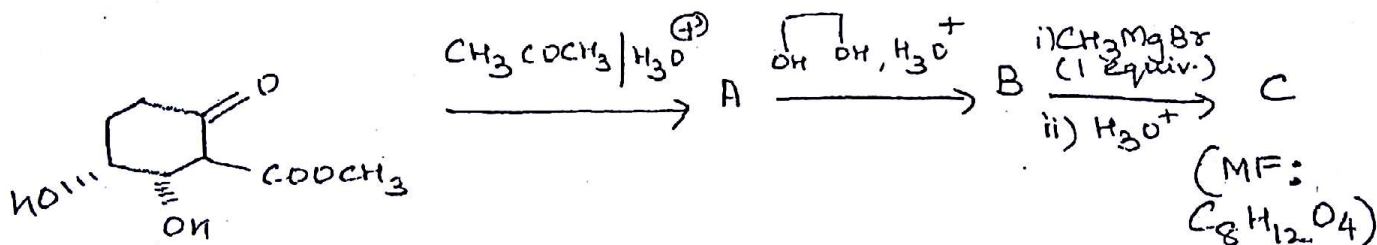
b) What are domino reactions? Explain with an example.

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c) Complete the following reactions :-



d) Complete the following synthesis by identifying A-C.

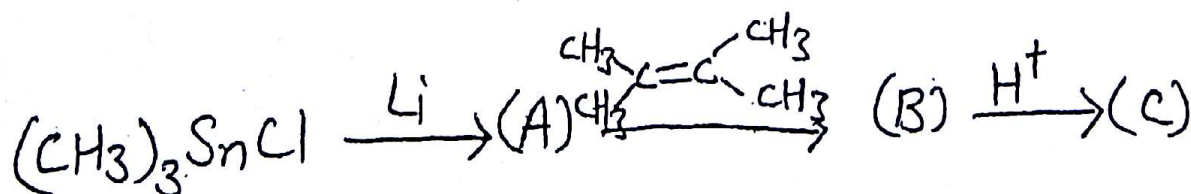


e) How is cyclohexanone converted to

- i) α -methyl cyclohexanone and
- ii) 2-formyl cyclohexanone via enamine?

f) Explain structures and relative stabilities of phosphorous ylides and nitrogen ylides.

g) Complete the following reaction sequence by identifying A, B, and C-



h) Complete the following reactions

