

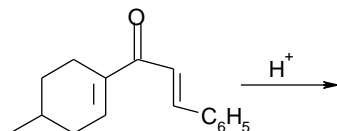
Duration : 21/2 hrs

Max. Marks:60

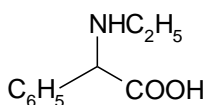
- N.B. i) All questions are compulsory.
ii) Figures to the right indicate full marks.

Q1a) Attempt any **TWO** of the following :

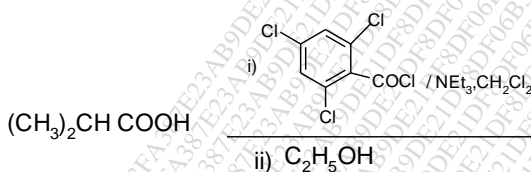
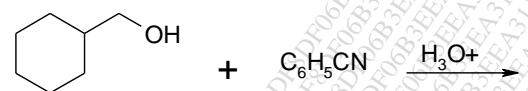
- i) Give the product, name and mechanism of the following reaction. 4



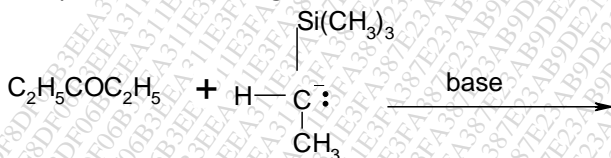
- ii) What are multicomponent reactions? How will you prepare the following by the Strecker reaction? 4



- iii) Give the product and name of the following reactions. 4



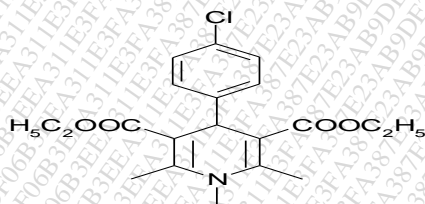
- iv) Complete the following reaction. Give the name and mechanism of the same. 4



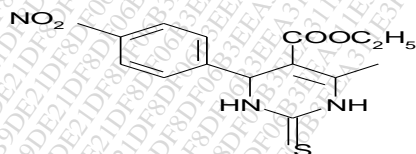
- b) Attempt any **ONE** of the following.

- i) What are the characteristics of a click reaction? . Give an example of the Huisgen 1,3 dipolar reaction. 4

- ii) How will you prepare the following 4



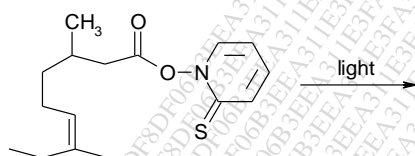
by the Hantzsch synthesis



by the Biginelli reaction

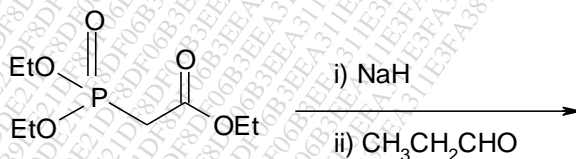
Q2a) Attempt any **TWO** of the following.

- i) Explain persistent radical and radical initiator with an example. 4
- ii) Give all the possible products formed when 3 – methyl cyclohexene is treated with chlorine in the presence of light. Identify the major product. Justify your answer. 4
- iii) Discuss with suitable examples radical generation by C-Sn cleavage. 4
- iv) Give an example of
Hunsdiecker reaction 4
Acyloin condensation
Sandmeyer reaction
Oxidative coupling
- b) Attempt any **ONE** of the following.
- i) Discuss with suitable examples radical mediated C-C bond formation in aromatic compounds. 4
- ii) Give the product and mechanism of the following reaction. 4

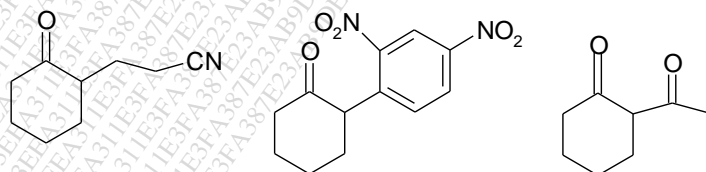


Q3a) Attempt any **TWO** of the following .

- i) Give the mechanism for the synthesis of propyne using the Seyforth Gilbert homologation reaction . 4
- ii) Give the synthesis of 2-hexene using a Wittig reaction. Explain the mechanism involved. 4
- iii) Explain enamines and enolates .Methylation of cyclohexanone using enamine is better than using an enolate intermediate. Justify this statement. 4
- iv) Give four reactions of sulfones in C-C bond formation via carbanion generation. 4
- b) Attempt any **ONE** of the following .
- i) Give the product, name and mechanism of the following reaction.

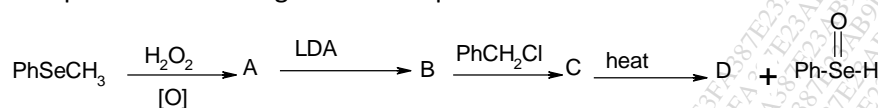


- ii) How is cyclohexanone converted to the following compounds via an enamine intermediate? 4



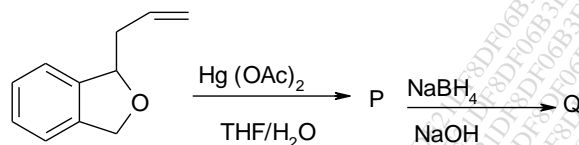
Q4a) Attempt any **TWO** of the following .

i) Complete the following reaction sequence.

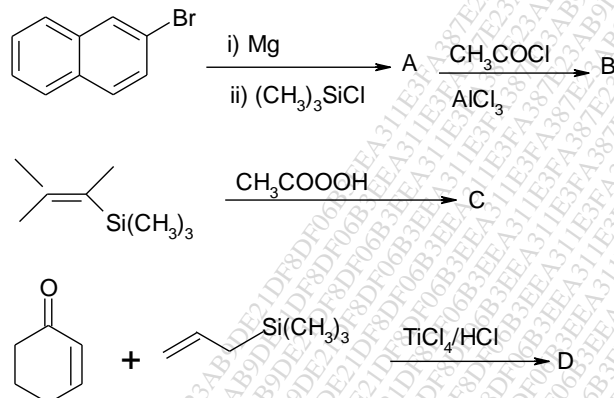


ii) Give any four applications of silyl enol ethers as enolate precursors in organic synthesis.

iii) Identify P & Q and provide a mechanism for the following reaction.



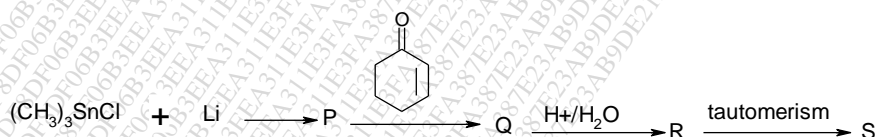
iv) Identify A,B,C & D



b) Attempt any **ONE** of the following.

i) Explain with mechanism the hydroboration reaction on 3-phenyl propyne

ii) Identify P,Q,R & S.

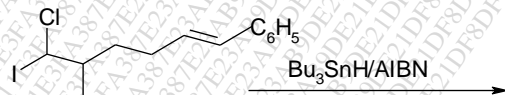


Q5) Attempt any **FOUR** of the following

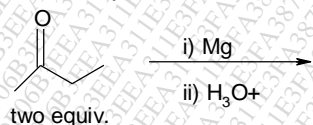
a) Discuss the mechanism of the Ugi 4-component reaction.

b) Give an example of Mitsunobu reaction and Mukaiyama esterification.

c) Give the product and mechanism of the following reaction.



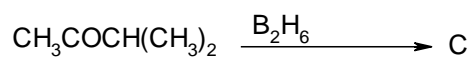
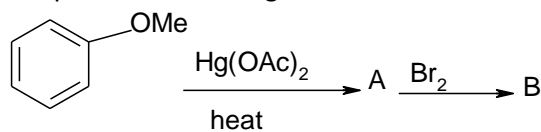
d) Give the product and mechanism of the following reaction.



e) Give the product and mechanism of the following reaction.



- f) Give three applications of S-ylides.
g) Complete the following reactions



- h) Give three applications of alkyl silanes in organic synthesis.

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