



Reg. No:

--	--	--	--	--	--	--	--

The Open University of Sri Lanka

B. Sc Degree / Stand Alone Programme 2009/2010

Organic Chemistry - CHU 3126 / CHE 5136

Level 5 - Additional Assignment – Test

Duration 1½ hours

Question	Marks	
	Max	Awarded
1	20	
2	30	
3	40	
4	20	
Total	110	

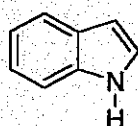
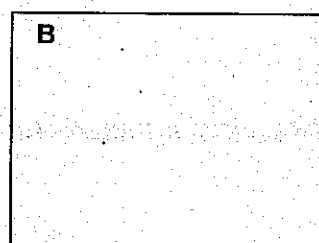
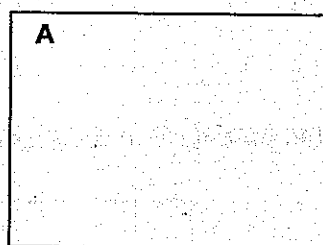
Thursday 06th May 2010

Time: 4.00 – 5.30 p.m.

Answer all questions.

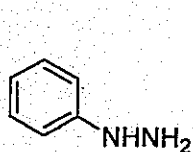
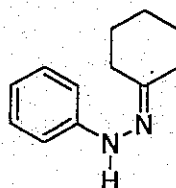
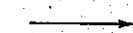
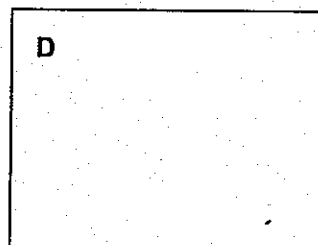
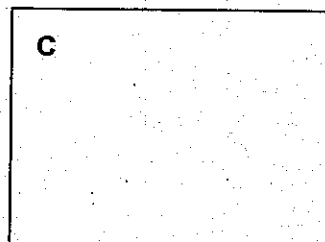
Maximum marks allocated to this paper are 110. However a candidate who scores 100 marks or above will be awarded 100% and those scoring less will be awarded the score they make.

1. (a) Identify the structures of products **A** and **B** obtained in the reaction given below.

 $\xrightarrow{\text{CHCl}_3 / \text{alcoholic KOH}}$ **A** + **B**

(10 Marks)

- (b) Identify the structures of the compounds **C** and **D** in the following reactions.

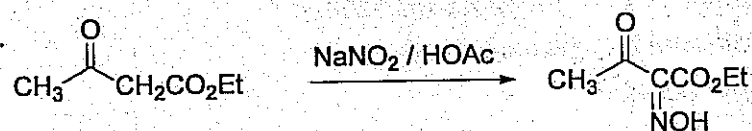
+ **C** $\xrightarrow{\text{anh. ZnCl}_2}$ **D**

(10 Marks)

Reg. No:

--	--	--	--	--	--	--	--

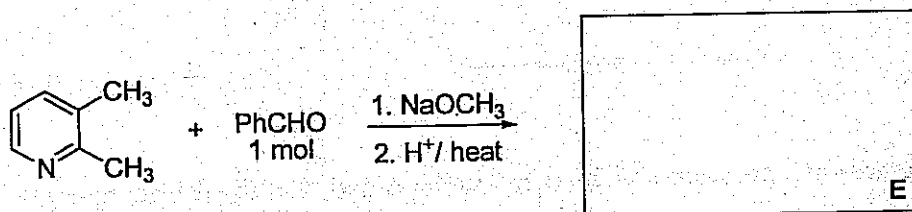
2. (a) During the synthesis of pyrroles, acetoacetates are reacted with $\text{NaNO}_2 / \text{HOAc}$. One of the primary reactions that take place is as follows.



Propose a possible mechanism for the reaction.

(15 Marks)

- (b) Giving reasons identify the structure of the product **E** in the reaction given below.

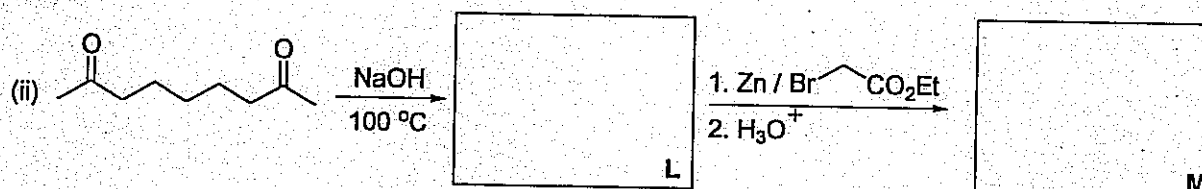
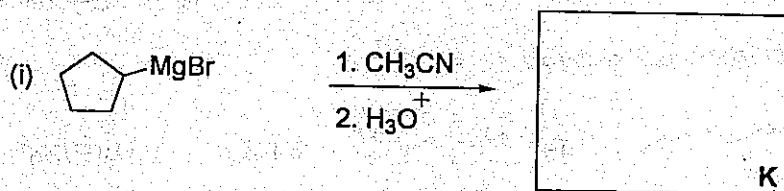


(15 Marks)

Reg. No:

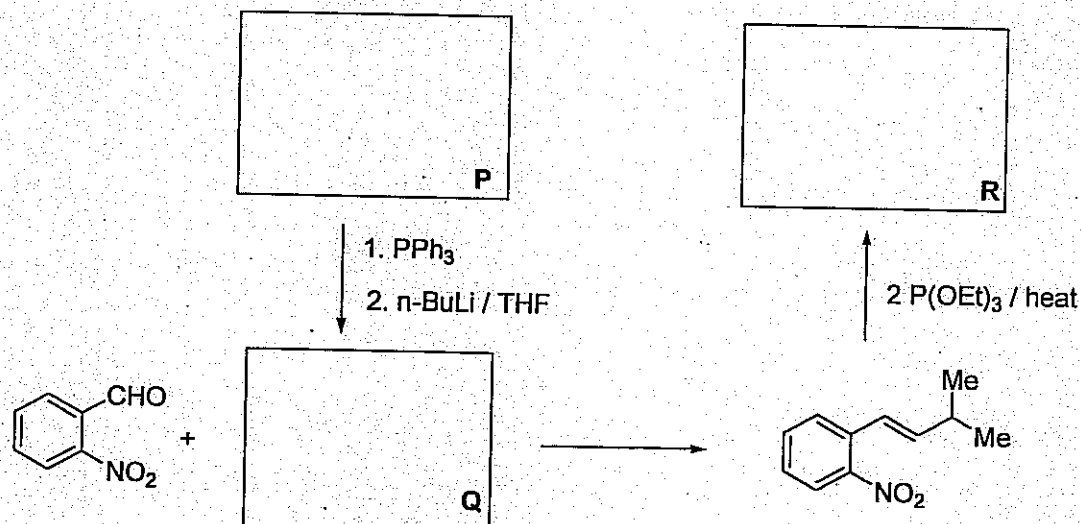
--	--	--	--	--	--	--	--

3. (a) Give the structures of products **K**, **L** and **M** of the following reactions.



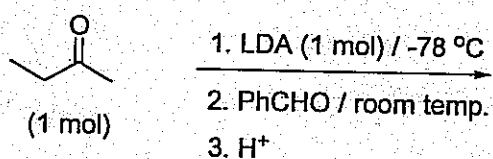
(15 Marks)

(b) Give the structures of compounds **P**, **Q** and **R** of the following reaction schemes.



(15 Marks)

(c) Giving reasons predict the product of the following reaction.



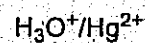
(10 Marks)

Reg. No:

--	--	--	--	--	--	--	--	--

4. Show how you would synthesize cyclopentanone using the following compounds and reagents.

You may need some other reagents too.



(20 Marks)

Name:.....

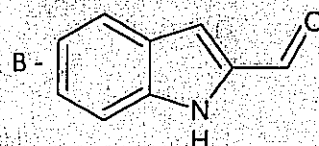
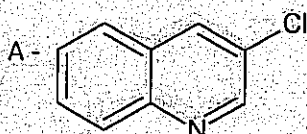
Address:.....

.....

.....

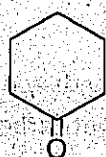
.....

1.
(a)

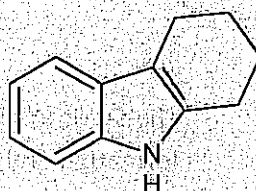


(b)

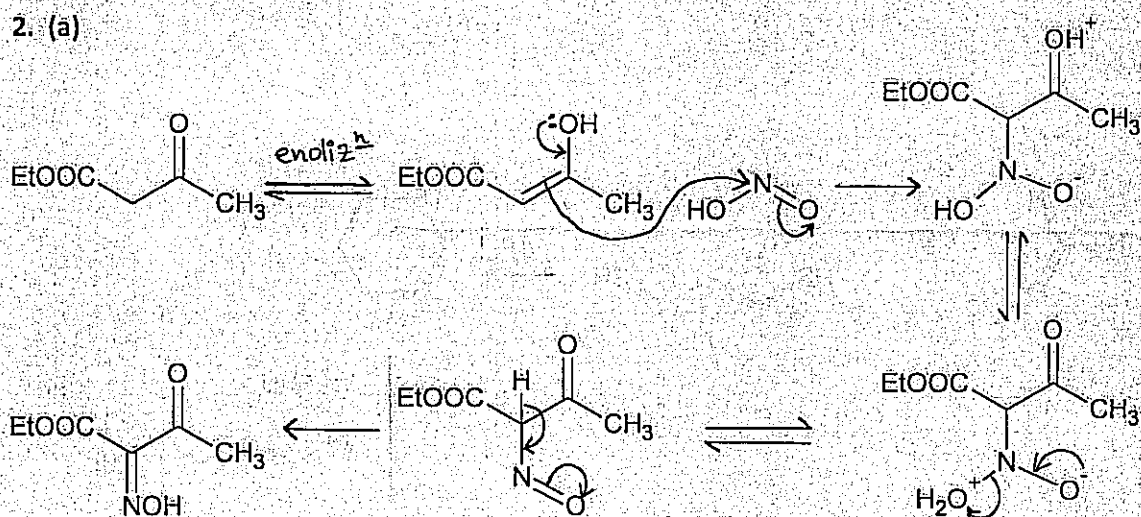
C -



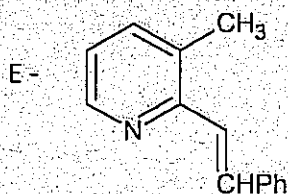
D -



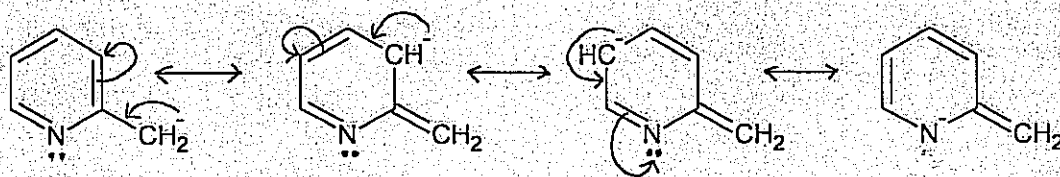
2. (a)



(b)

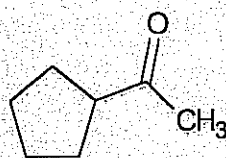


The intermediate anion is stabilized by delocalization of the negative charge in to the ring

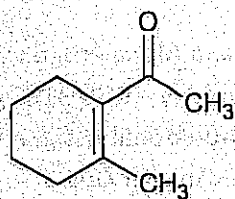


3. (a)

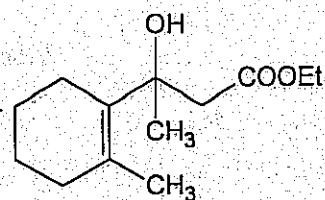
K -



L -

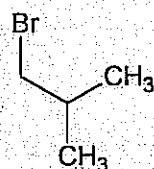


M -

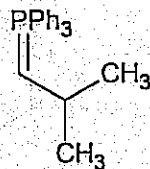


(b)

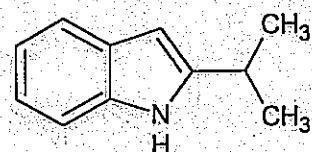
P -



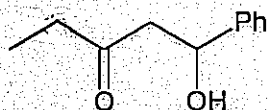
Q -



R -

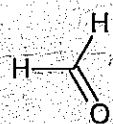


(c)

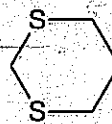


The Steric Hindrance at the Secondary position, prevents the formation of the carbanion at that carbon

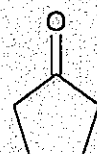
4.



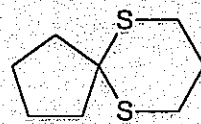
+



n - BuLi



H₃O⁺ / Hg²⁺



n - BuLi

