



Reg. No.

The Open University of Sri Lanka

B. Sc. Degree Programme - 2015/2016

Faculty of Natural Sciences

Department of Chemistry

CMU3120 - Organic Chemistry II

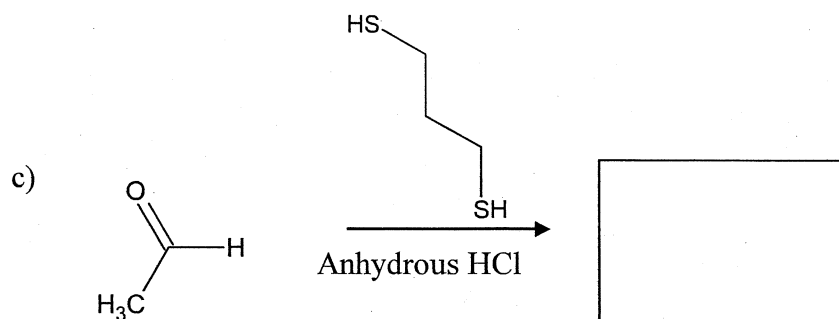
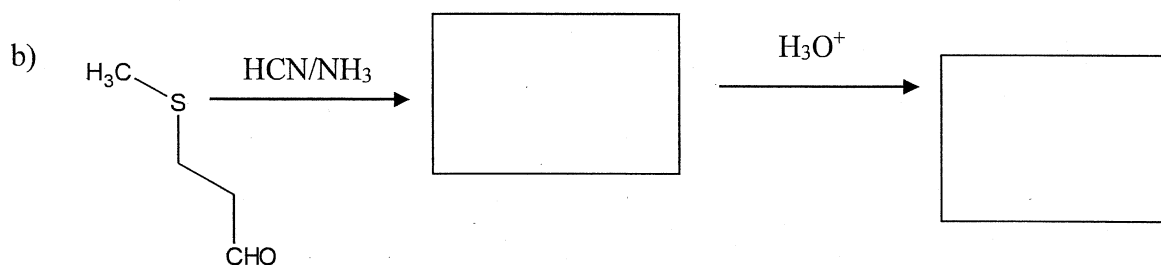
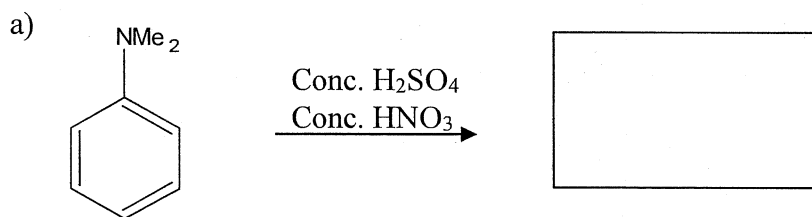
CONTINUOUS ASSESSMENT TEST II

Ques No.	Max.	Marks
1	20	
2	20	
3	20	
4	40	
Total	100	

Date: Saturday, 7th May 2016

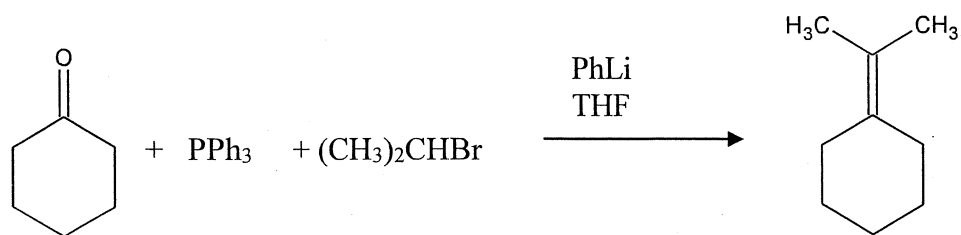
Time: 9.00 a.m. – 10.00 a.m.

1. Give the products of the following reactions.



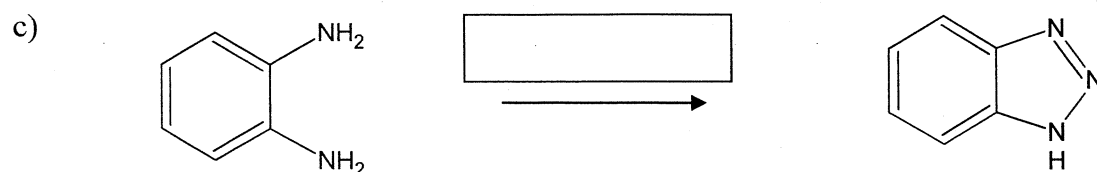
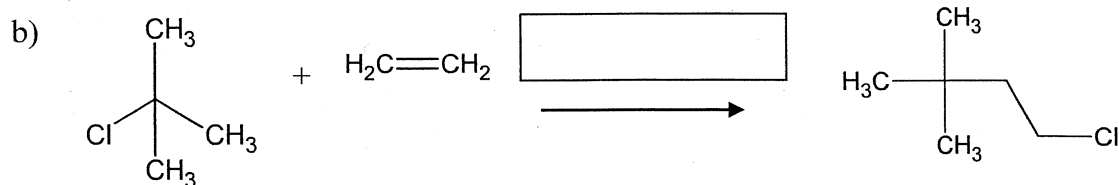
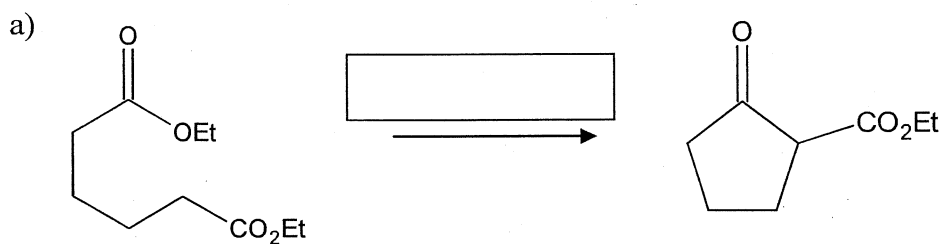
(20 Marks)

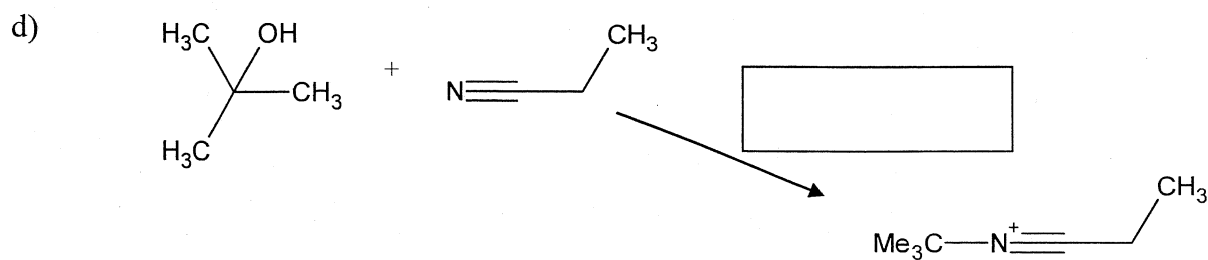
2. Give the possible mechanism for the Wittig reaction given below. (Hint: Show the formation of Wittig reagent/alkalidne phosphorene first)



(20 Marks)

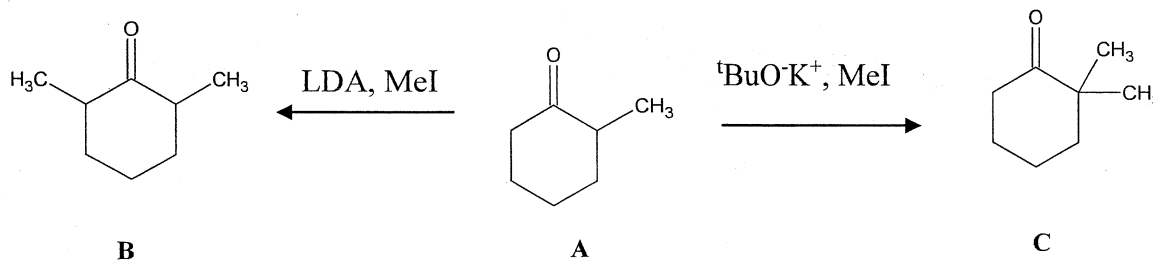
3. Give the reagents and the conditions necessary to complete the following reactions.





(20 Marks)

4. Consider the alkylation of 2-methylcyclohexanone (A) with two different bases, lithium diisopropylamide (LDA) and *tert*-butoxide anion (${}^t\text{BuO}^-$), producing two different products B and C respectively.



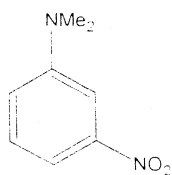
Giving necessary resonance structures of appropriate anions explain the above observation.

(40 Marks)

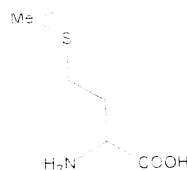
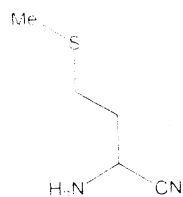
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Answer Guide

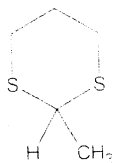
1. a)



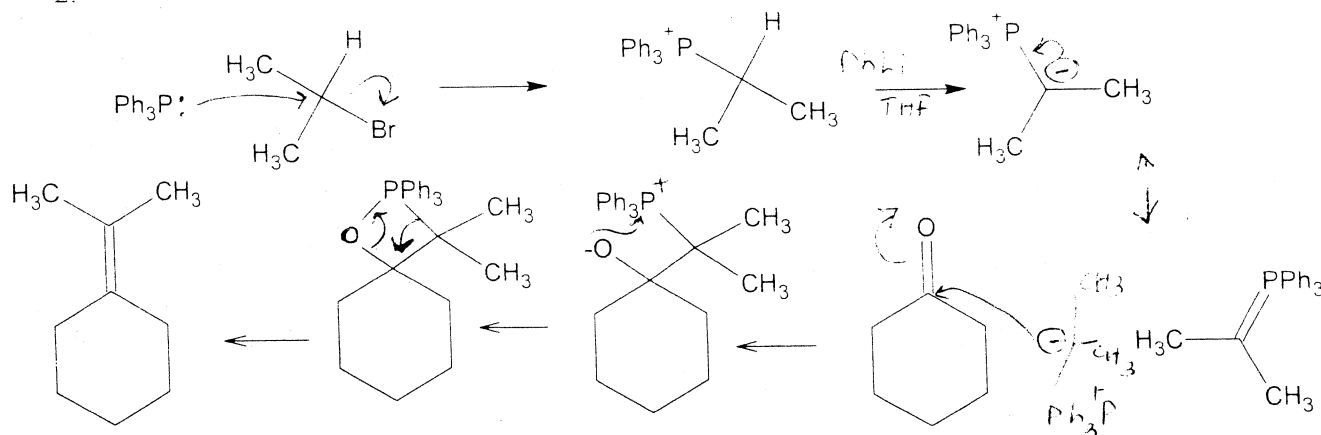
b)



c)



2.

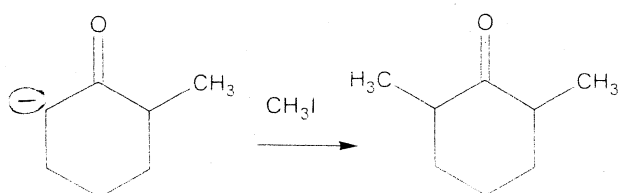


3. a) NaOEt/ heat or Na/toluene
- b) anhydrous AlCl₃, -10°C
- c) NaNO₂, HCl, 0-5°C
- d) Conc. H₂SO₄

4. With LDA, anion is formed from the least hindered carbon as LDA is large and sterically hindered base. Therefore the removal of proton is faster with irreversible reaction. Kinetically stable product is formed.

With ^tBuO⁻, both enolates are formed. But the methyl substituted one is thermodynamically more stable.

With LDA,



With ^tBuO⁻,

