Reg. No: | | | | | | | | |

The Open University of Sri Lanka
B. Sc Degree / Stand Alone Programme ~~2007/2008~~ 2009/2010
Organic Chemistry - CHU 3126 / CHE 5136
Level 5 - Assignment II – Test (CBT)
Duration 1½ hours

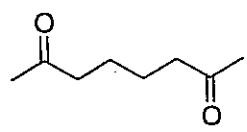
Q	Marks	
	Max	Awarded
1	25	
2	25	
3	20	
4	40	
Total		

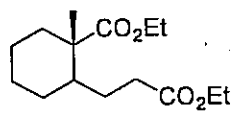
Thursday, 04th March 2010 4.00 – 5.30 p.m.

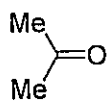
Answer all questions.

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.

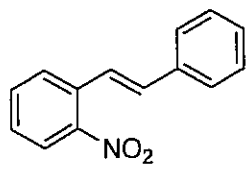
1. Give the structures of the products of the following reaction schemes. (25 Marks)

(a)  NaOH, 100 °C → [ ]

(b)  NaOEt → [ ] → 1. OH^-/H_2O 2. H^+ 3. heat → [ ]

(c)  $ClCH_2CO_2Et$, NaOEt → [ ] → 1. OH^-/H_2O 2. H^+ → [ ]

2. Give the structure of the product of each of the following reactions (25 Marks)

i.  $2\ P(OEt)_3$, heat → [ ]

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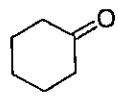
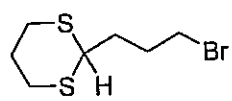
ii.  $\xrightarrow{Me_2\overset{+}{S}-\overset{-}{C}H_2}$ [ ]

iii.  $\xrightarrow[H^+]{HS\text{---}\text{---}SH}$ [ ]

iv.  $\xrightarrow[2.\ H_3O^+/Hg^{2+}]{1.\ n\text{-BuLi}}$ [ ]

v.  $\xrightarrow[heat]{B_2H_6}$ [ ]

3. Show how you would use Ritter reaction to prepare $(CH_3)_3C\text{-}NH_2$ from $(CH_3)_3COH$ (15 Marks)

What is the use of Ritter reaction? (05 Marks)

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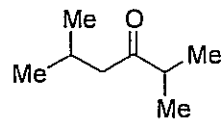
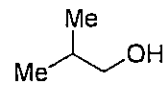
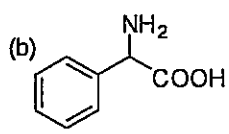
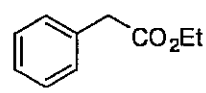
4. Show how you would carry out the following syntheses.

(40 Marks)

(a) 

from 

(b) 

from 

and $(CO_2Et)_2$

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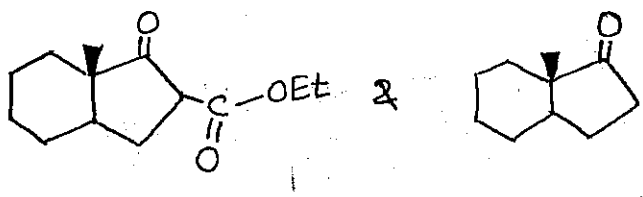
Level 5 – Assignment Test II – Answer Guide

1.
(a) Refer page 45, Unit II

(b)



(c) Refer page 52, Unit II

2.
(i) Refer page 57, Unit II

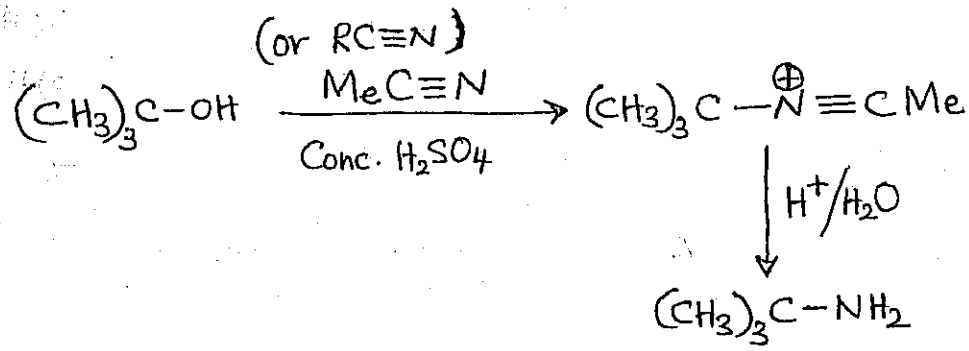
(ii) Refer page 60, Unit II

(iii) Refer page 111, Unit III

(iv) Refer page 64, Unit III

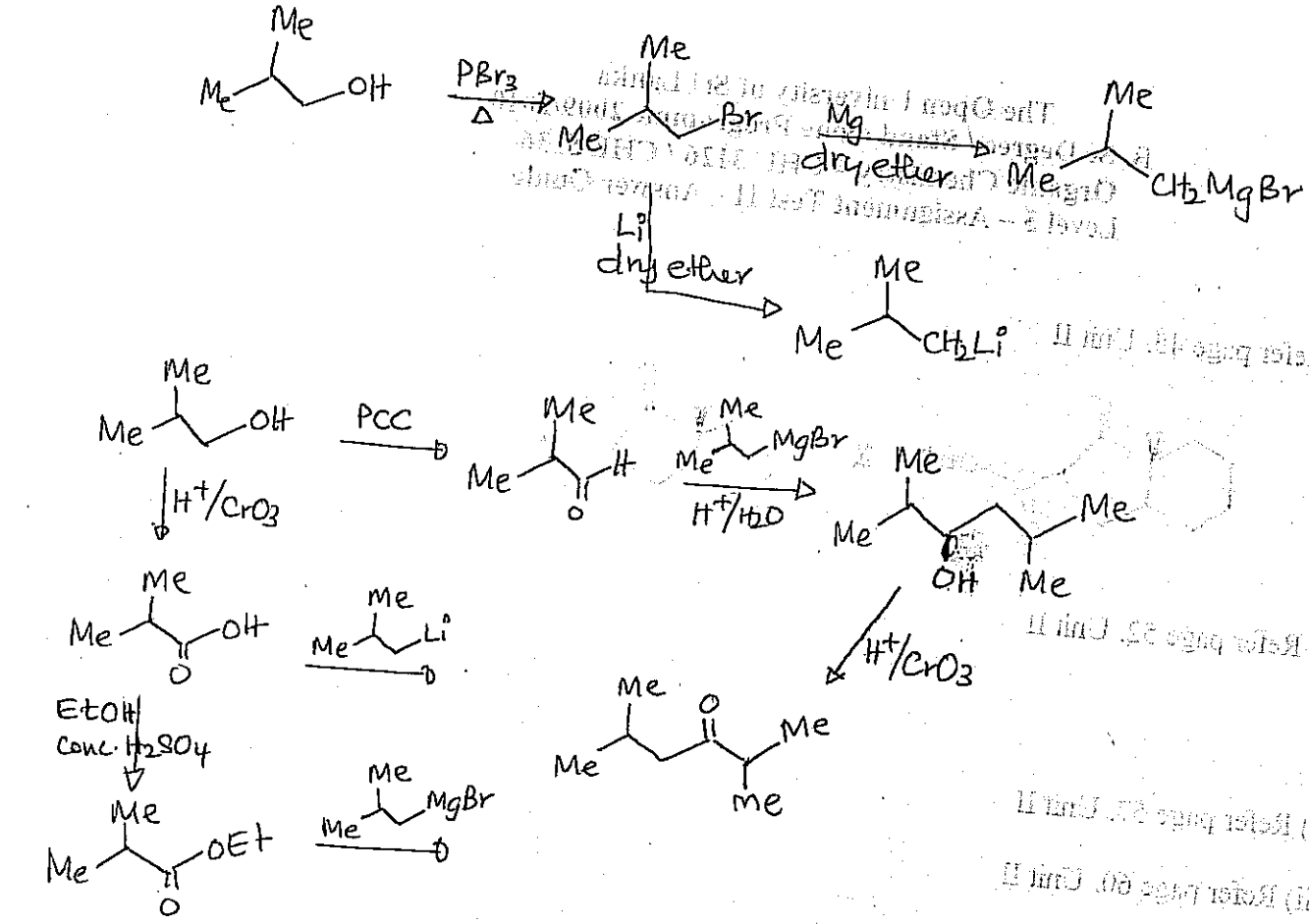
(v) Refer page 66, Unit III

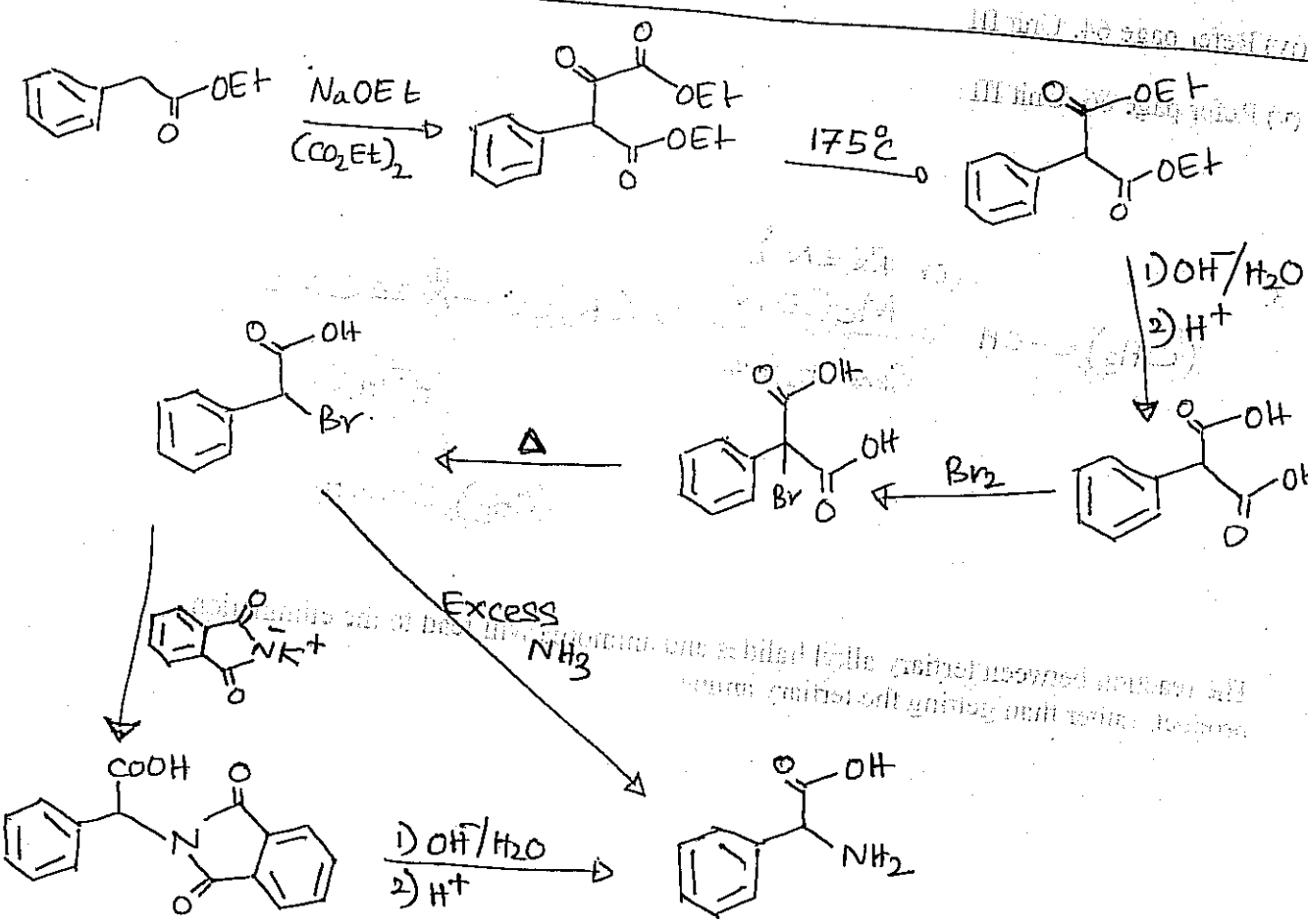
3.



The reaction between tertiary alkyl halides and ammonia will lead to the elimination product, rather than getting the tertiary amine.

4.


Me
Me
OH
PBr3
Δ
Br
Mg
dry ether
CH2MgBr
Li
dry ether
CH2Li
PCC
H+/CrO3
H+/H2O
MgBr
EtOH
Conc. H2SO4
OEt
O


OEt
NaOEt
(CO2Et)2
175°C
1) OH⁻/H2O
2) H+
OH
Br
Br2
Δ
Excess
NH3
K+
COOH
NH2