



Reg. No. 

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

**THE OPEN UNIVERSITY OF SRI LANKA**  
**B. Sc. Degree Programme and Stand Alone Courses in**  
**Science - 2012/2013**  
**CMU2221/CME 4221 - Organic Chemistry 1**  
**CONTINUOUS ASSESSMENT TEST III**

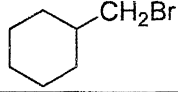
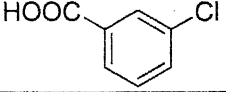
Ques No.	Max.	Marks
1	60	
2	40	
<b>Total</b>	100	

Date: Saturday, 28<sup>th</sup> September 2013

Time: 11.00 a.m.– 12.30 p. m.

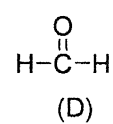
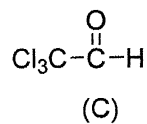
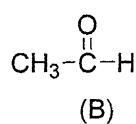
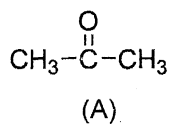
1. (a) Indicate whether each of the following halides can or cannot be used to prepare Grignard reagent.

(Place a check mark (✓) in the appropriate box.)

Halide			$\text{HC}\equiv\text{C}-\text{Br}$	$\text{H}_2\text{C}=\text{CH}-\text{CH}_2-\text{Br}$
Can be used				
Cannot be used				

(04 Marks)

- (b) (i) Arrange the following carbonyl compounds in the increasing order of stabilities of their hydrates.

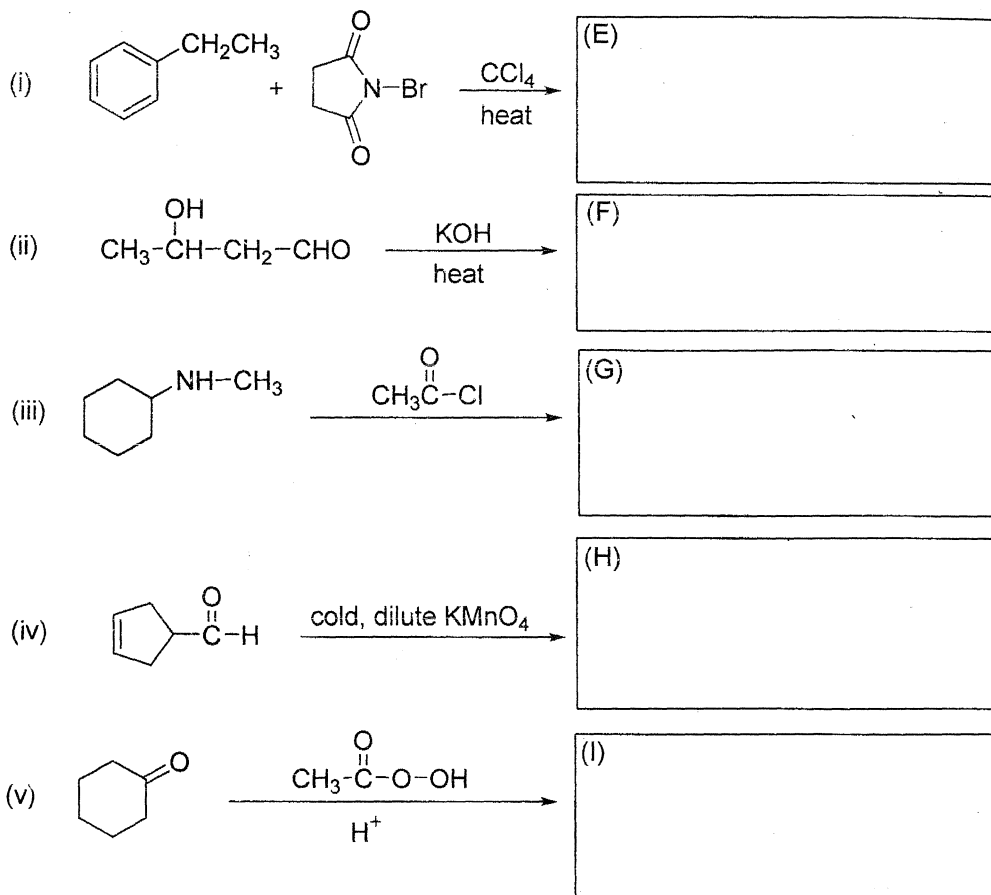


..... < ..... < ..... < .....

- (ii) Write the mechanism for the acid catalysed hydration of acetone (A).

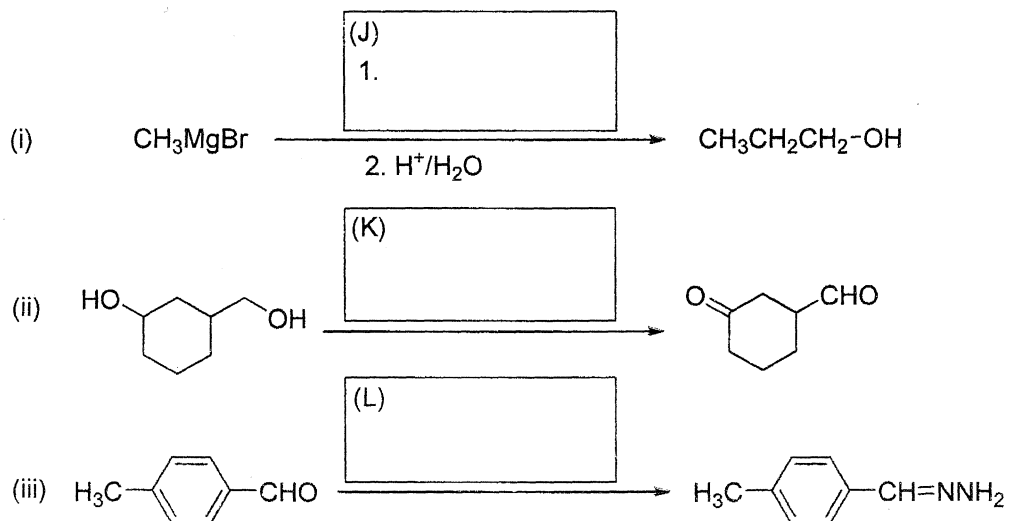
(08 Marks)

(c) Give the major product in each of the following reactions.



(30 marks)

(d) Give suitable reagents and conditions to effect the following conversions.



(18 marks)

2. (a) Indicate whether the following statements are true (T) or false (F).

(Place a check mark (✓) in the appropriate box.)

(i) Annulenes are monocyclic compounds having conjugated double bonds.

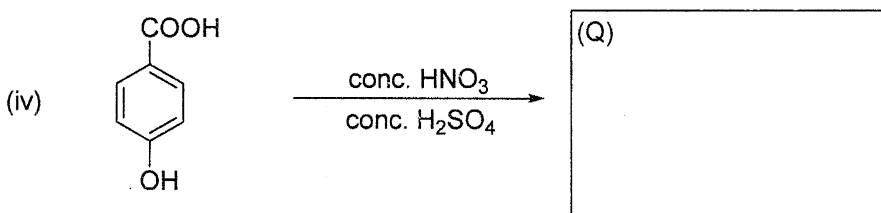
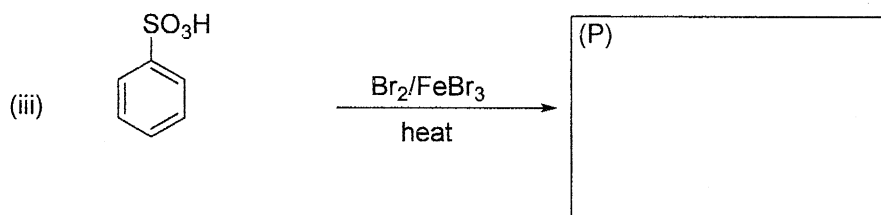
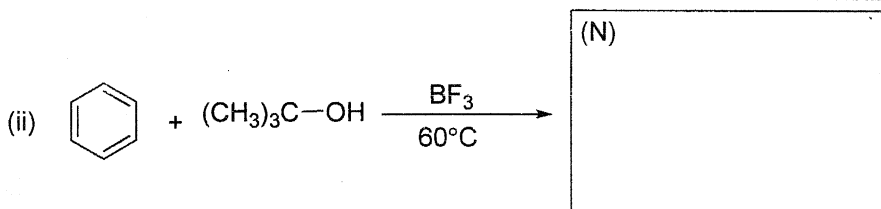
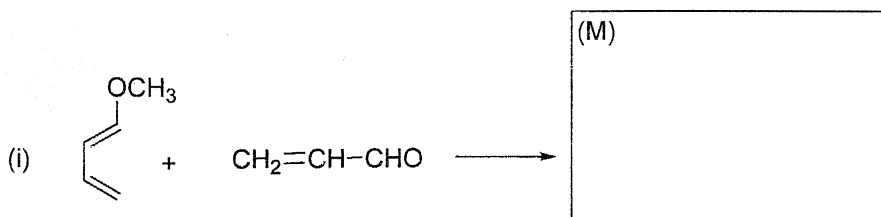
<b>T</b>	<b>F</b>

(ii) Cyclopropenyl anion is antiaromatic.


- (iii) *meta* positions in nitro benzene are deactivated towards electrophilic substitution.
- (iv) In Friedel Craft alkylation of benzene, excess alkyl halide results in polyalkylation.
- (v) Both *s-cis* and *s-trans* conformations of dienes can undergo Diels-Alder reaction.

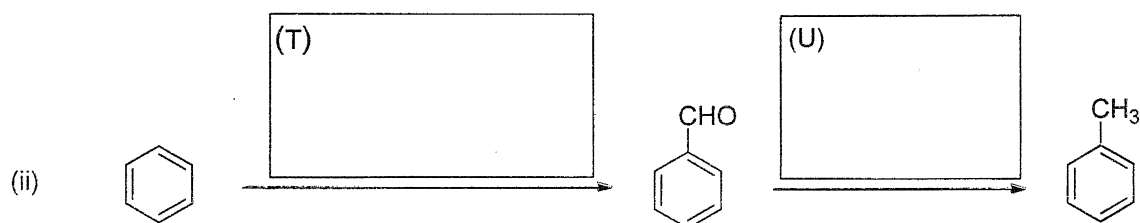
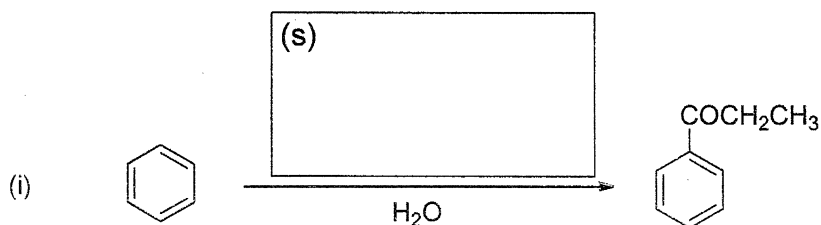
(05 marks)

(b) Predict the major product in each of the following reactions.



(20 marks)

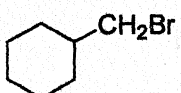
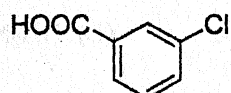
(c) Complete the following reactions giving necessary reagents and conditions.



(15 marks)

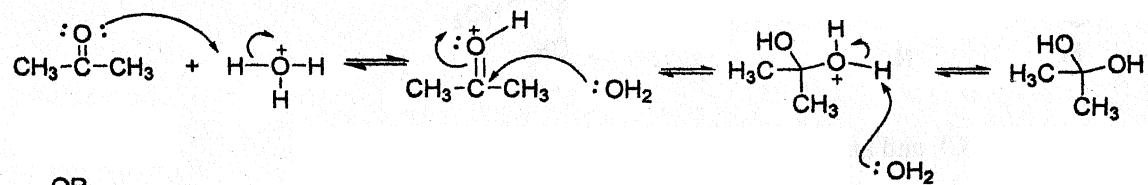
\*\*\*\*\*

01) (a)

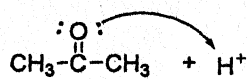
Halide			$\text{HC}\equiv\text{C}-\text{Br}$	$\text{H}_2\text{C}=\text{CH}-\text{CH}_2-\text{Br}$
Can be used	√			√
Cannot be used		√	√	

(b) i.  $A < B < C < D$

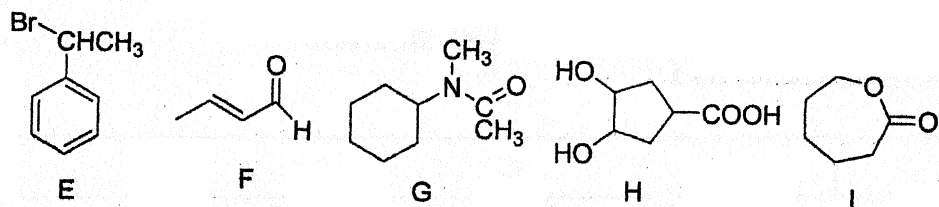
ii.



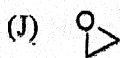
OR



(c)



(d)



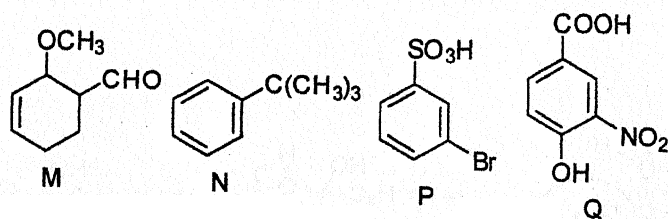
(K) PCC/CH<sub>2</sub>Cl<sub>2</sub>

(L) NH<sub>2</sub>NH<sub>2</sub>

02) (a) True – (i), (ii) and (iii)

False – (iii) and (v)

(b)



(c) S – CH<sub>3</sub>CH<sub>2</sub>COCl and anhy. AlCl<sub>3</sub>

T – CO/HCl, anhy. AlCl<sub>3</sub>/CuCl

U – Zn/Hg, Conc. HCl or NH<sub>2</sub>NH<sub>2</sub>/OH<sup>-</sup>