



Reg. No.

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THE OPEN UNIVERSITY OF SRI LANKA
B.Sc. Degree Programme
and Stand Alone Courses in Science - 2016/2017
CMU2221/CME4221 - Organic Chemistry 1
CONTINUOUS ASSESSMENT TEST III

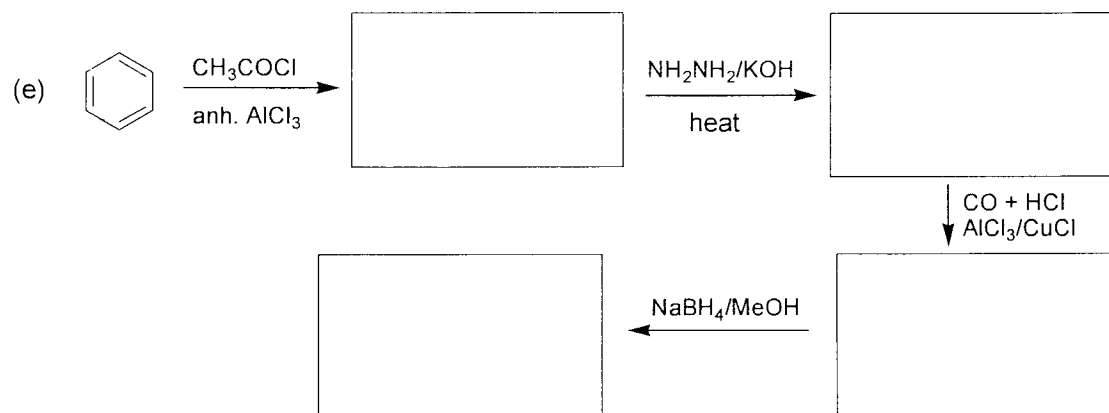
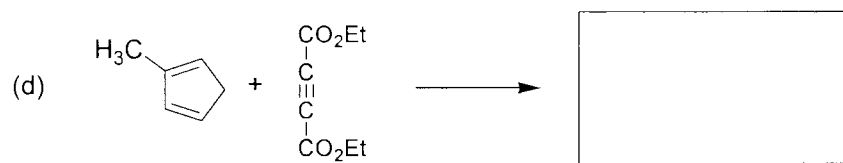
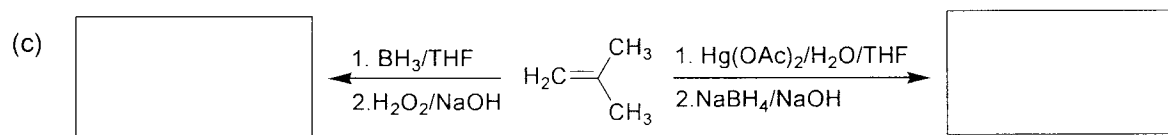
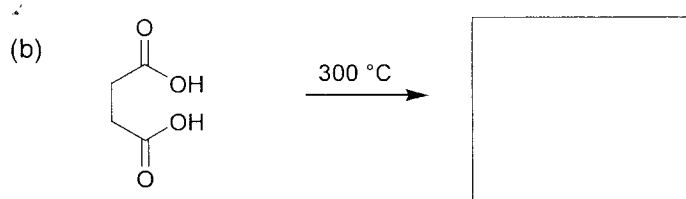
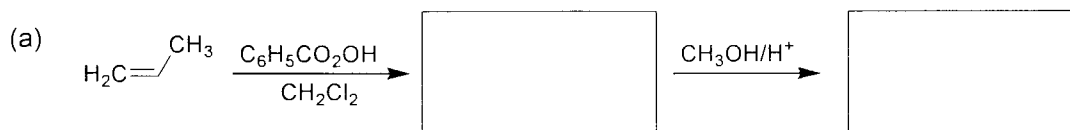
Ques No.	Max.	Marks
1	50	
2	25	
3	25	
Total	100	

Sunday 29th October 2017

9.00 a. m. – 10.00 a. m.

ANSWER ALL QUESTIONS

1. Give the major products of each of the following reactions/reaction schemes.



(50 marks)

Reg. No.

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Name :.....

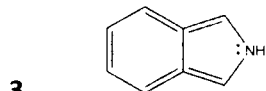
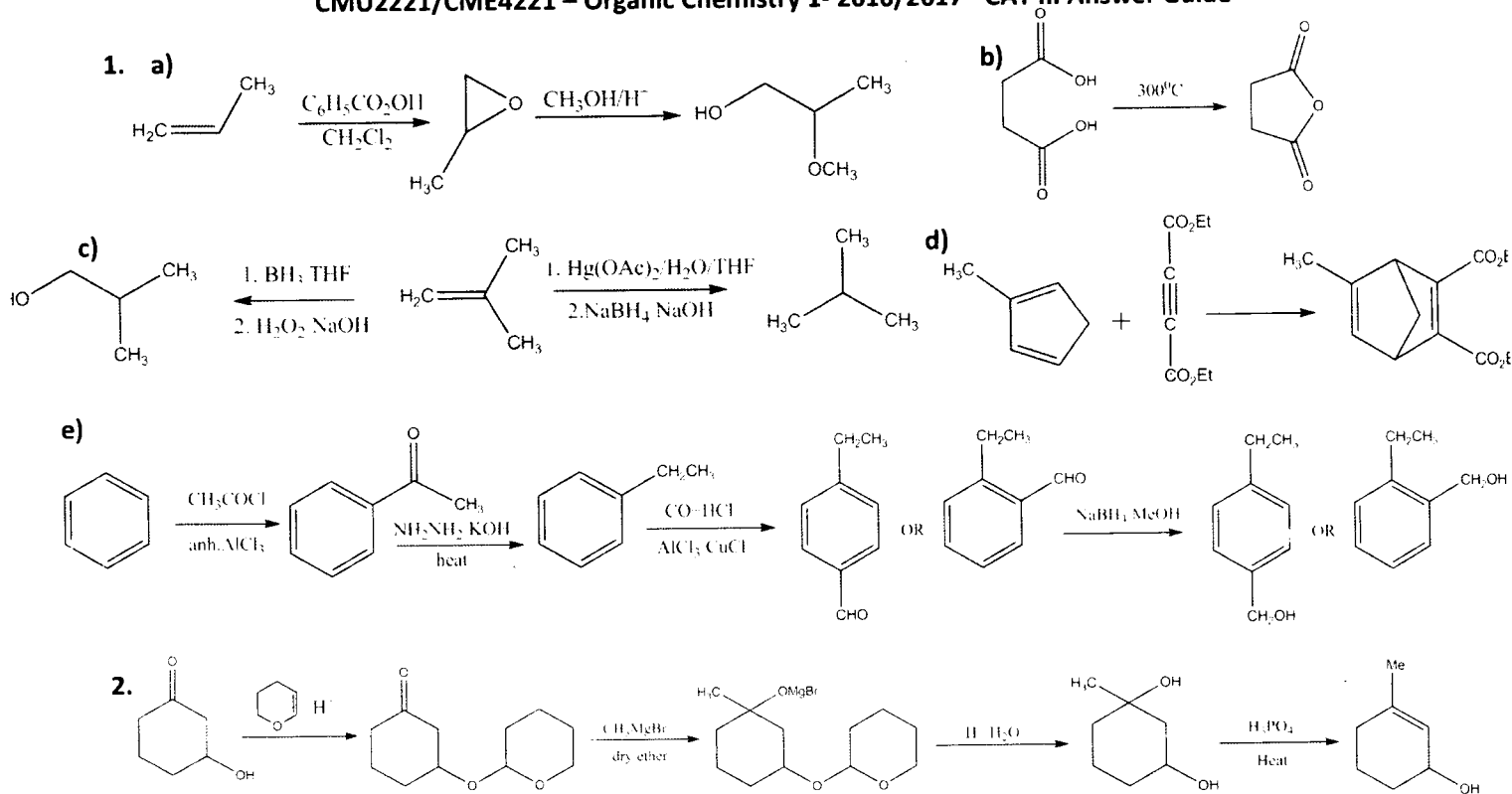
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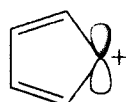
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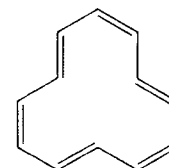
THE OPEN UNIVERSITY OF SRI LANKA
 CMU2221/CME4221 – Organic Chemistry 1- 2016/2017 - CAT III Answer Guide



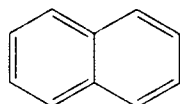
Planar, cyclic, all carbons sp^2 hybridized forming a closed shell of electrons, (complete conjugation), Total of 10π electrons, obeys Huckel rule $(4n+2)\pi$ electrons
 \therefore aromatic



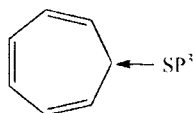
Planar, cyclic, four carbon atoms are sp^2 hybridized and one carbon atom has an empty P orbital which forms a closed shell of π electrons, total of 4π electrons, does not obey Huckel rule, but $4n\pi$,
 \therefore anti-aromatic



Nearly planar, cyclic, 12π electrons, does not obey Huckel rule, but $4n\pi$, all π electrons are forming a closed shell
 \therefore anti-aromatic

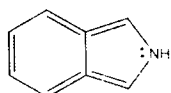


Planar, cyclic, all peripheral carbon atoms are sp^2 hybridized,
 \therefore forms a closed shell of π electrons, $(4n+2)\pi, =10\pi$
 Obeys Huckel rule
 \therefore aromatic

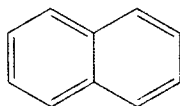


Cyclic, but non planar due to sp^3 hybridized carbon atom \therefore no complete conjugation in the ring
 \therefore non-aromatic

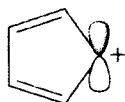
4.



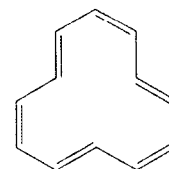
Planar, cyclic, all carbons sp^2 hybridized forming a closed shell of electrons, (complete conjugation), Total of 10π electrons, obeys Huckel rule $(4n+2)\pi$ electrons
 \therefore **aromatic**



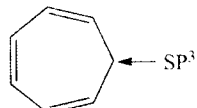
Planar, cyclic, all peripheral carbon atoms are sp^2 hybridized,
 \therefore forms a closed shell of π electrons, $(4n+2)\pi, = 10\pi$
Obeys Huckel rule
 \therefore **aromatic**



Planar, cyclic, four carbon atoms are sp^2 hybridized and one carbon atom has an empty P orbital which forms a closed shell of π electrons, total of 4π electrons, does not obey Huckel rule, but $4n\pi$,
 \therefore **anti-aromatic**



Nearly planar, cyclic, 12π electrons, does not obey Huckel rule, but $4n\pi$, all π electrons are forming a closed shell
 \therefore **anti-aromatic**



Cyclic, but non planar due to sp^3 hybridized carbon atom \therefore no complete conjugation in the ring
 \therefore **non-aromatic**