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THE OPEN UNIVERSITY OF SRI LANKA
B.Sc. Degree Programme
and Stand Alone Courses in Science - 2015/2016
CMU2221/CME4221 - Organic Chemistry 1
CONTINUOUS ASSESSMENT TEST III

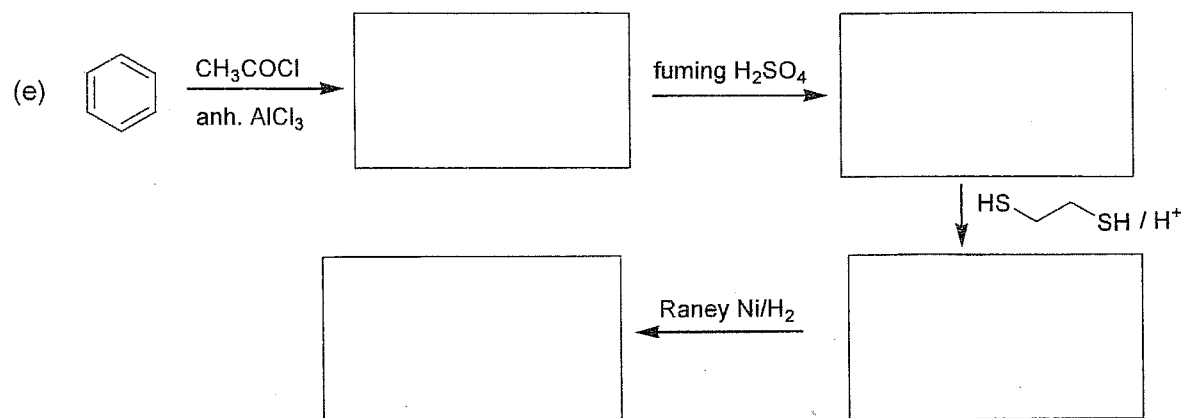
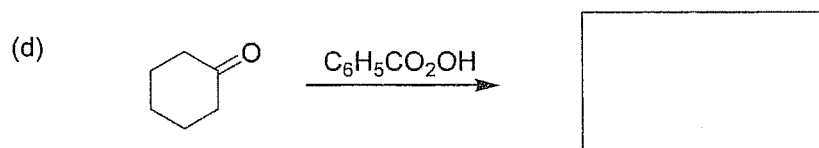
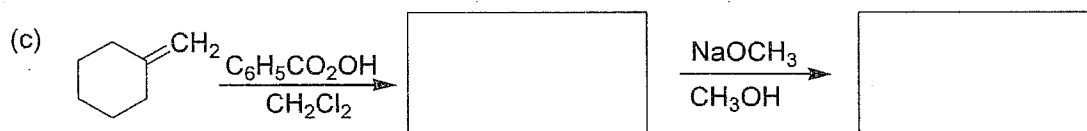
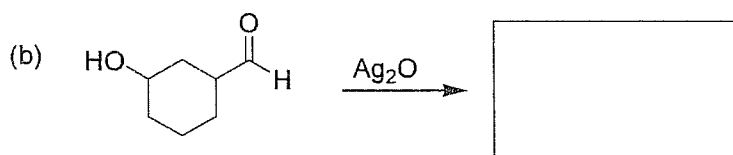
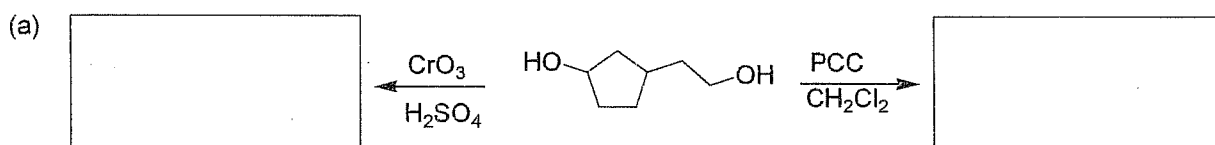
Ques No.	Max.	Marks
1	50	
2	20	
3	30	
Total	100	

Saturday 05th November 2016

9.00 a. m. – 10.00 a. m.

ANSWER ALL QUESTIONS

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



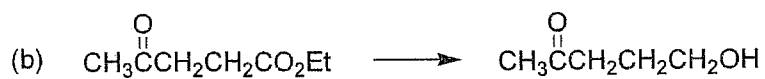
(50 marks)

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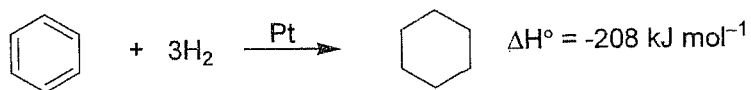
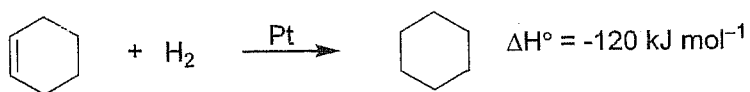
2. Giving necessary reagents and conditions show how you would carry out **ONE (01)** of the following conversions.

(Hint: You may need to use protective groups for some functional groups)



(20 marks)

3. (a) Calculate the resonance energy of benzene using the data given below.

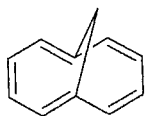


(10 marks)

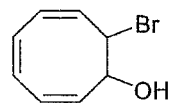
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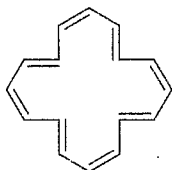
(b) Giving reasons state whether each of the following compound/ion is aromatic, non-aromatic or anti-aromatic.



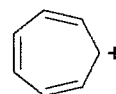
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(20 marks)

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Name :

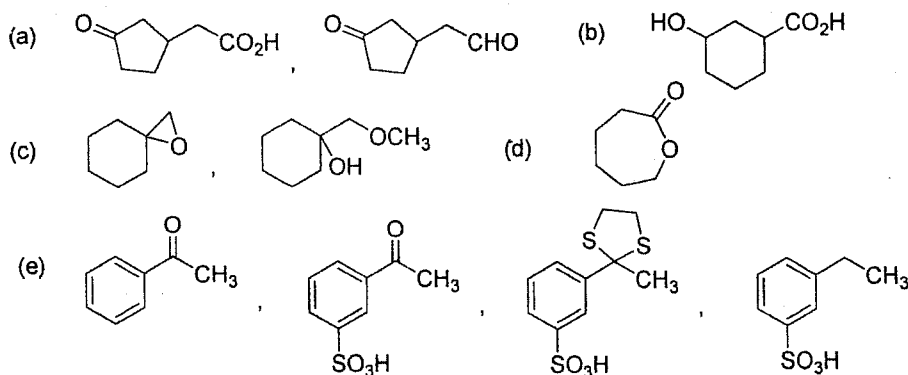
Address :

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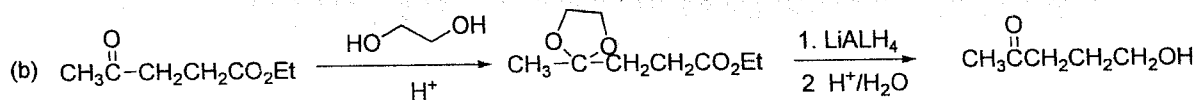
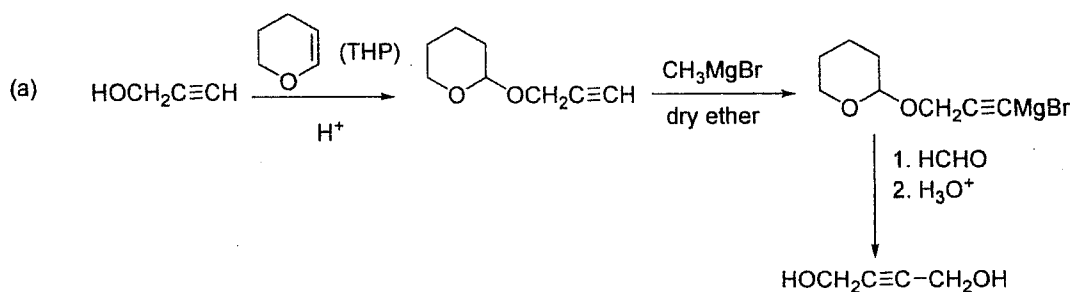
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1.



2.



3.

Theoretical ΔH° for benzene = $3 \times -120 \text{ kJ mol}^{-1}$
 Experimental ΔH° for benzene = -208 kJ mol^{-1}
 Resonance energy for benzene = $-208 - (3 \times -120) \text{ kJ mol}^{-1} = 152 \text{ kJ mol}^{-1}$

4.

	Planar (due to methylene bridge), cyclic molecule. 10π $[(4n+2) \pi]$ electrons in a closed shell. Obeys Huckel rule. \therefore Aromatic.
	OH and Br attached carbons are sp^3 hybridized. 6π electrons are not completely conjugated. \therefore Non aromatic.
	Nearly planar, monocyclic molecule. 16π electrons are in complete conjugation. $(4n) \pi$ electrons. Does not conform to Huckel number. \therefore Anti aromatic.
	Positively charged carbon is sp^2 hybridized. It has an empty p orbital. 6π electrons can circulate in a closed shell. $[(4n+2) \pi - \text{electrons}]$. Obeys Huckel rule. \therefore Aromatic.