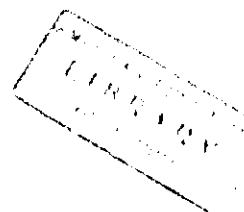




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Final

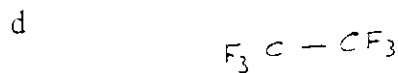
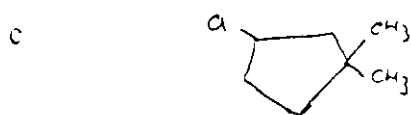
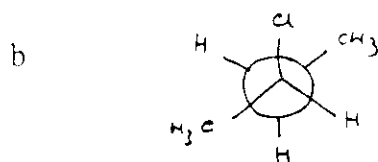
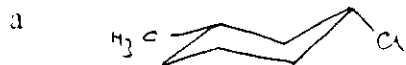
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2 hours

Family Name:
First Name:
ID. No.

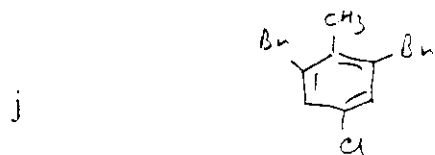


Q1[10 marks]

Name the following compounds:

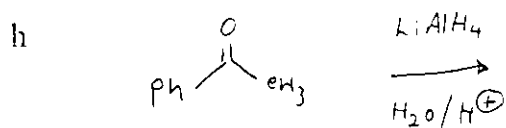
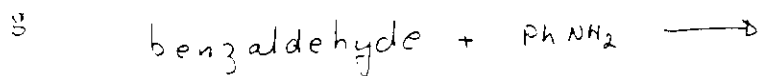
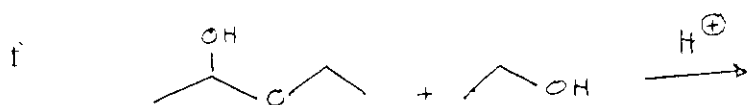
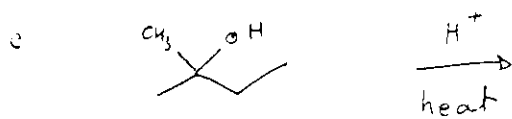
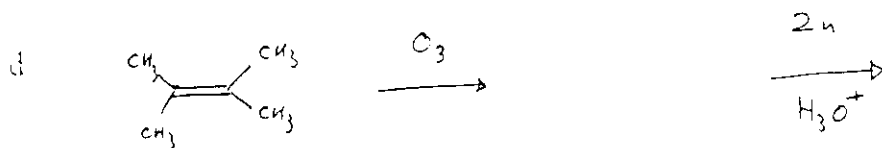
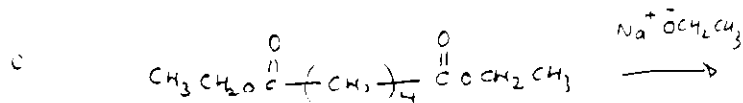


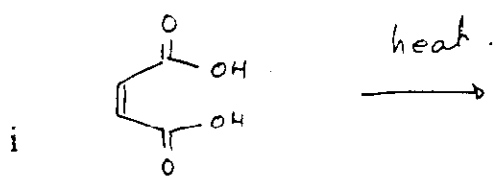
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Q2 [10 marks]

Predict the products of the following reactions:





Q3 [5 marks]

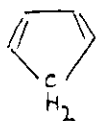
How many organic products can be obtained from the monochlorination of octane? and cyclooctane? Give the structures of all the products.

Q4 [8 marks]

Briefly explain each of the following:

a 4-nitrophenol is a stronger acid than 3-nitrophenol

b

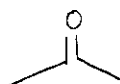


has $pK_a = 15$, whereas cyclopentane has a pK_a of 45

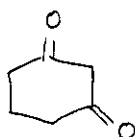
Q5 [7 marks]

Draw the resonance contributors to the enolate ion of:

a

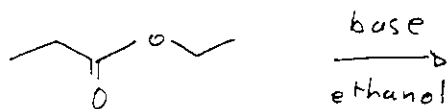


b



Q6 [7 marks]

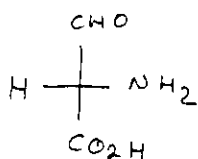
Write out all the steps in the Claisen condensation of ethyl propanoate for the formation of the β -keto ester



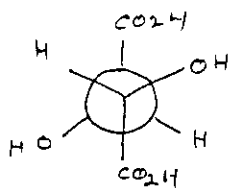
Q7 [12 marks]

Assign R or S configuration to each of the following compounds **clearly indicating** the order of priority of the groups.

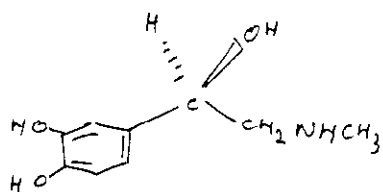
a



b



c



Q8 [10 marks]

Give three characteristic how we recognize when a particular nucleophile and substrate react by the following mechanism

a.

	SN1	SN2
1		
2		
3		

b.

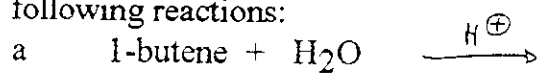
Predict the product of the reaction of 1-chloro-1-methylcyclopentane with

I $\text{CH}_3\text{CH}_2\text{O}^-\text{Na}^+$ (strong base) in ethanol

II boiling ethanol

Q9 [8 marks]

Use Markovnikov's rule to predict which regioisomer predominates in each of the following reactions:



c How would you prepare the other regioisomer in the reaction of 1-butene

Q10 [10 marks]

Define each of the following, and give one example of each

a Racemic mixture

b Hybridization

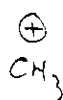
c Meso compound

d Inductive

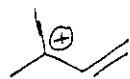
e Electrophile

Q11 [5 marks]

Arrange the following carbocations in order of increasing stability:



(A)



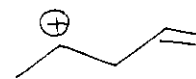
(B)



(C)



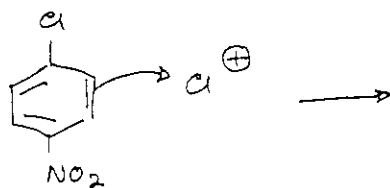
(D)



(E)

Q12 [4 marks]

Write all the possible resonance structures resulting from the electrophilic reaction given below



Q13 [4 marks, no partial credit]

Of the following groups listed below, circle those that are ortho and para directing

