

Al-Azhar University -Gaza
Chemistry Department

Midterm exam

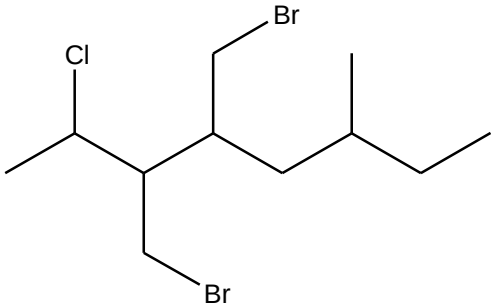
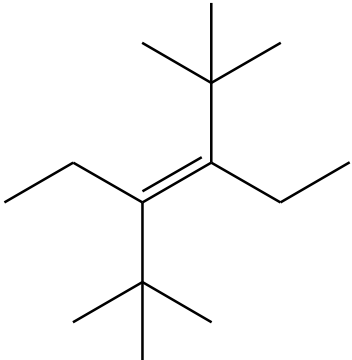
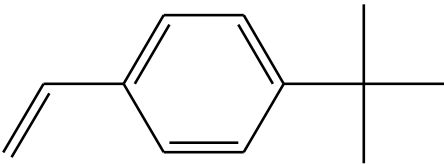
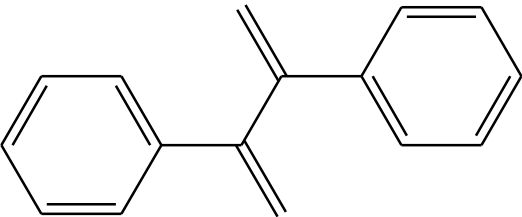
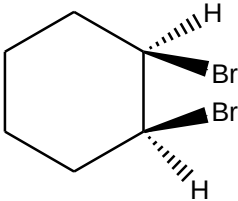
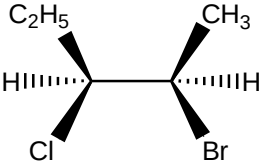
Time: 2 hours

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Org. Chem.

2nd semester 20/21

Q1. Name the following compounds:

Q2. Draw the structure of the following compounds:

Sec-butylcyclohexane	1,4-di- <i>tert</i> -butyl-2-cyclohexene
Tetraphenylmethane	1,3,4-tribromocyclopentane
2,6-diiodophenol	(R)- <i>sec</i> -butylbenzene

Q3. Using Newman projection formula draw the most and the least stable conformations of meso-1,2-dichloro-1,2-diphenylethane.

Q4. Draw structures that meet the following descriptions (there are many possibilities):

(a) Three isomers with the formula C_8H_{18}

(b) Two isomers with the formula $C_4H_8O_2$

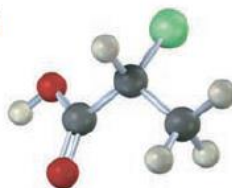
Q5.

- i) Assign R or S configurations to the chirality centers in the following structures.
 ii) Which of these structures are identical? (Black = C, grey = H, Red = O, Green = Cl)

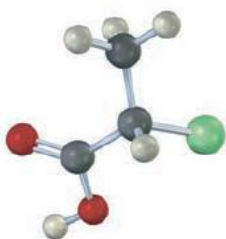
(a)



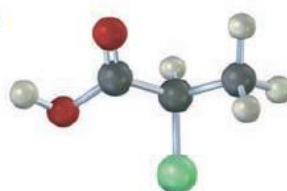
(b)



(c)



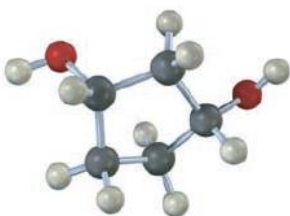
(d)



Q6.

- i) Assign R or S configurations to the chirality centers in the following structures.
 ii) Which, if any, of these structures represent meso compounds? (Black = C, grey = H, Red = O, Green = Cl, Blue = N)

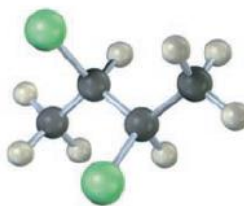
(a)



(b)

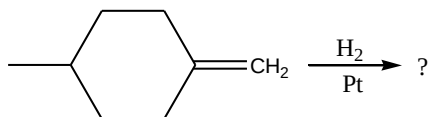


(c)

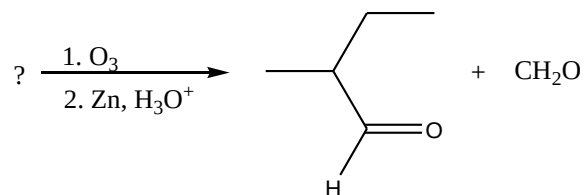


Q7. Complete the following reactions:

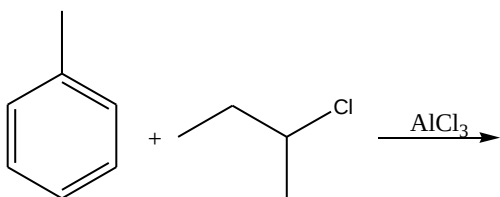
1.



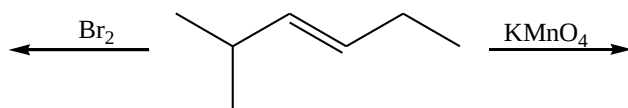
2.



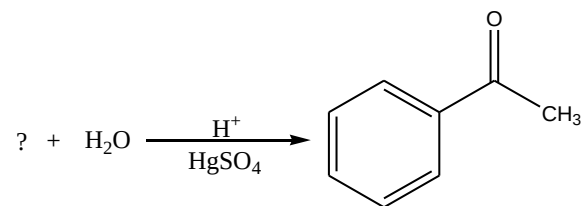
3.



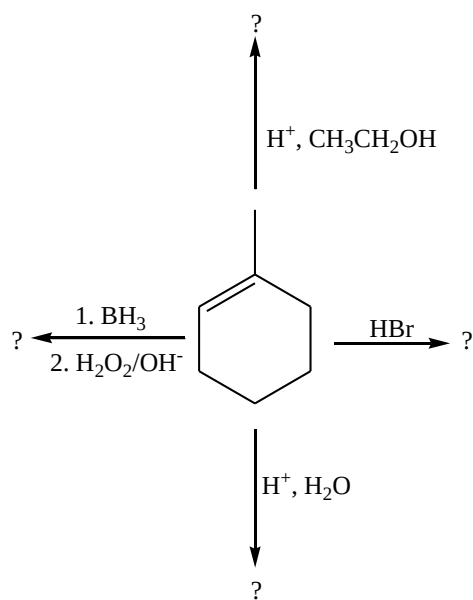
4.



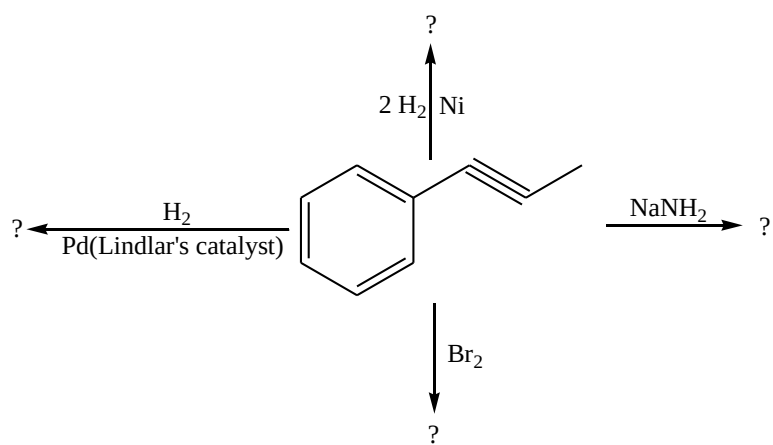
5.



6.



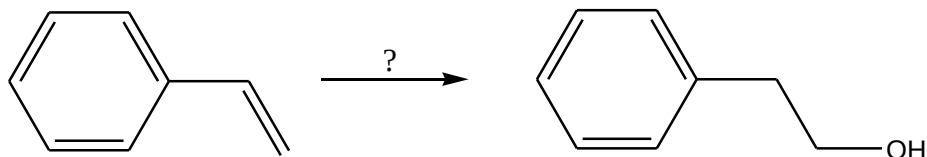
7.



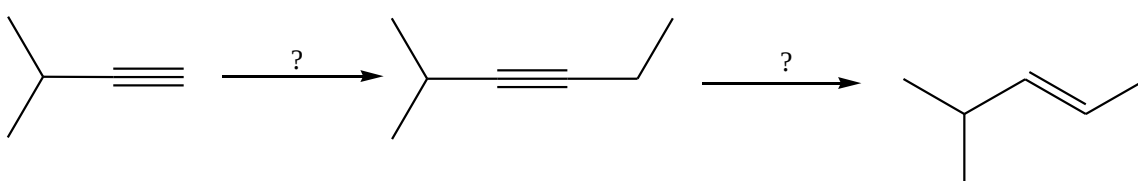
8. Compound **A** (C_9H_{12}) absorbed 3 moles of H_2 on catalytic reduction over a palladium catalyst to give **B** (C_9H_{18}). On ozonolysis, compound **A** gave, among other things, a ketone that was identified as six-membered ring ketone (cyclohexanone). On treatment with $NaNH_2$, followed by addition of iodomethane, compound **A** gave a new hydrocarbon, **C** ($C_{10}H_{14}$). Write the reactions showing the structures of the reactants and products.

9. How would you carry out the following conversions?

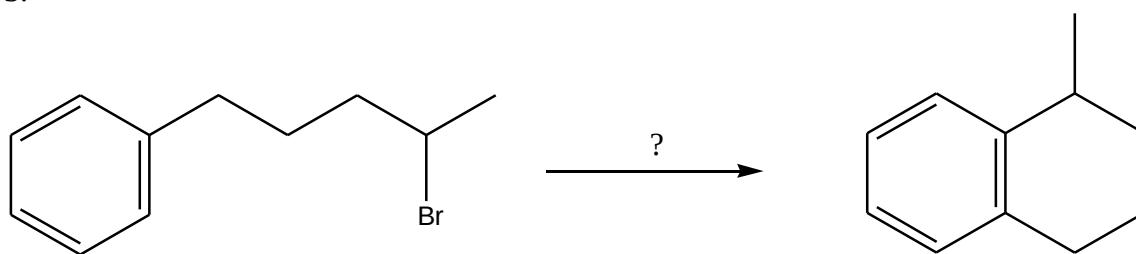
1.



2.



3.



Propose a mechanism of this reaction.

4.

