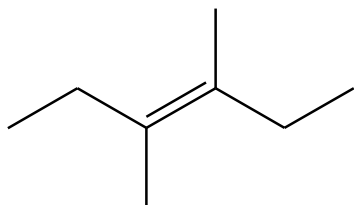


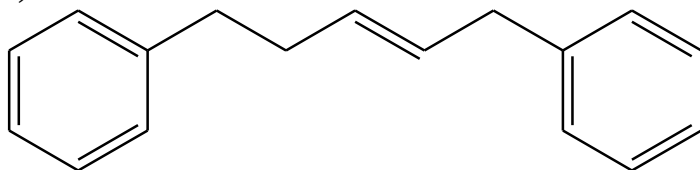
Organic Chemistry for Health Sciences
Prof. Hussein M. Alhendawi
Homework-2

1. Name the following compounds:

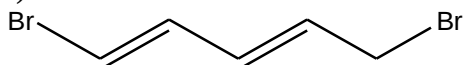
a)



b)



c)



2. Indicate which of the following compounds show (cis-trans) isomerism and draw the isomeric structures.

a) 1-hexene

b) 2-hexene

c) 1,4-dichloro-2-butene

3. Give the structures of the organic products expected from the reaction of 1-methyl-1-cyclopentene with:

a) Cl_2

b) H_2 , Pt

c) KMnO_4

d) BH_3 ; then H_2O_2 , OH^-

e) O_3 ; then $\text{Zn}/\text{H}_2\text{O}$

f) H_2O , H^+

4. Give the structure of the organic product(s) expected from the reaction of 3-methyl-1-hexyne with:

a) NaNH_2

b) 2 mole H_2 , Ni

b) 2 mole Cl_2

c) 2 mole HBr

d) H_2O , H^+ , HgSO_4

5. Prove the following:

a) -COOH group in benzoic acid is meta-directing group

b) -NH_2 group in aniline is ortho, para-directing group

6. How would you perform the following chemical conversions? Write a defense mechanism for each one.

