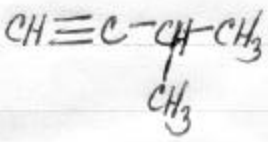
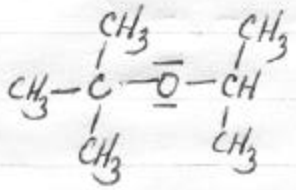
Chem 231 Spring 2002 Dr. Babb

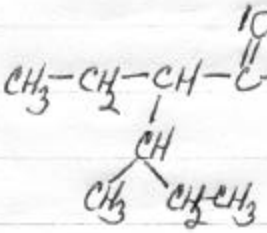
Problem Set #1 (on Chapter 1)

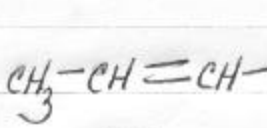
Answer Key

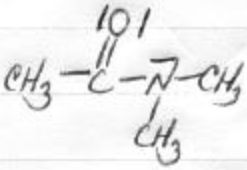
1.

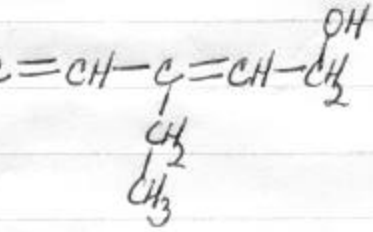
I  alkyne acyclic

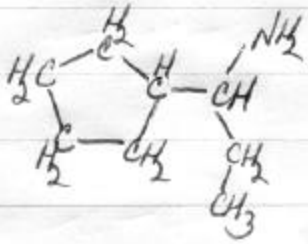
II  ether acyclic

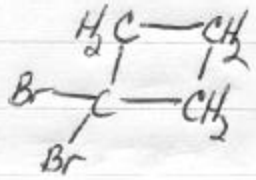
III.  aldehyde acyclic

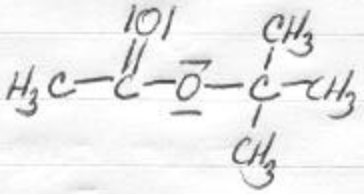
IV.  carboxylic acid + alkene acyclic

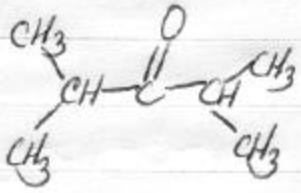
V.  amide acyclic

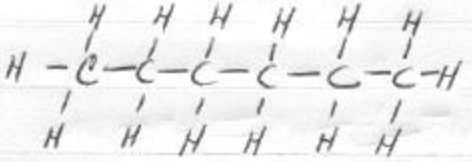
VI  alkene + alcohol; acyclic

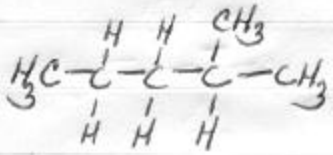
VII.  amine ; carbocyclic

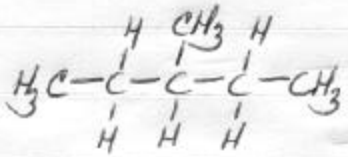
VIII.  alkyl bromide ; carbocyclic or alkyl halide

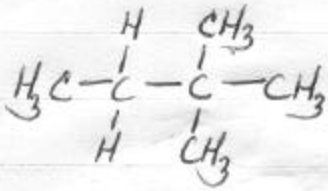
IX.  ester ; acyclic

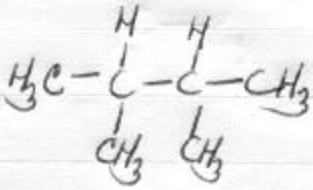
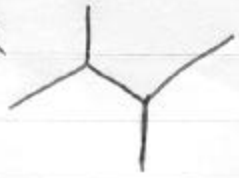
X.  ketone ; acyclic

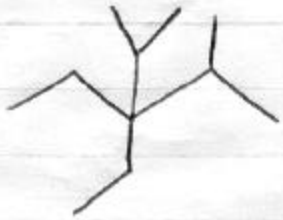
2.  OR $CH_3(CH_2)_4CH_3$ OR 

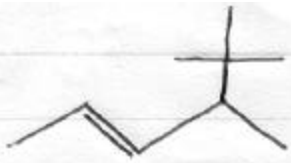
 OR $CH_3(CH_2)_2CH(CH_3)_2$ OR 

 OR $CH_3CH_2CH(CH_3)CH_2CH_3$ OR 

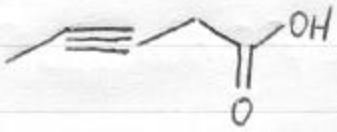
 OR $CH_3CH_2C(CH_3)_3$ OR 

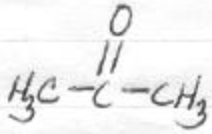
 OR $(CH_3)_2CHCH(CH_3)_2$ OR 

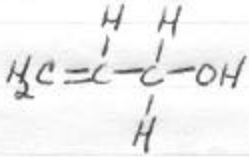
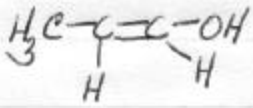
3. A. 

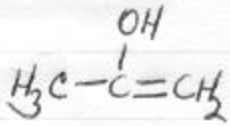
B. 

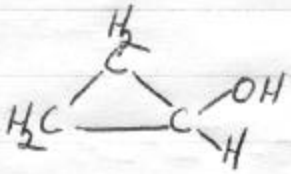
C. 

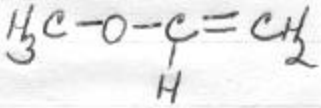
D. 

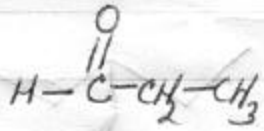
4. A. 

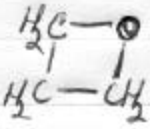
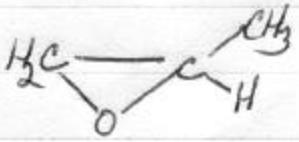
B.  OR 

OR 

C. 

D. 

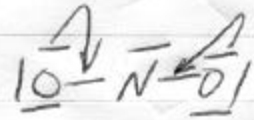
E. 

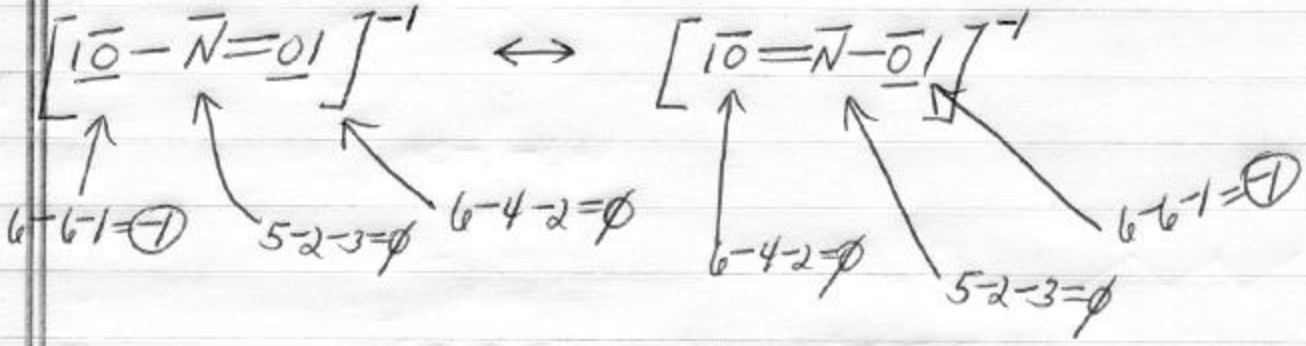
F.  OR 

epoxide

4. Each structure has one degree of unsaturation.

5. NO_2^- $\#e^- = 5+2(6)+1 = 18e^-$





In each resonance structure, 1 of the oxygens has a formal charge of -1.

Conversion of one resonance structure to other —