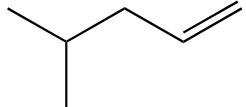


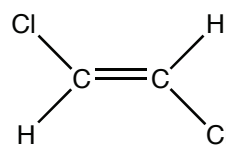
1. (5 points) What is the chemical formula for the molecule $\text{H}_2\text{C}=\text{CH}_2$?
- 1) C_2H 2) C_2H_2 3) C_2H_3 4) C_2H_4 5) C_2H_6

2. (5 points) What is the chemical formula for the molecule  ?
- 1) C_6H_8 2) C_6H_{10} 3) C_6H_{12} 4) C_6H_{14} 5) C_6H_{16}

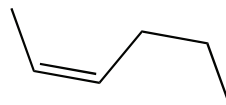
3. (5 points) What is the functional group in $\text{CH}_3\text{CH}_2\text{OH}$?
- 1) alcohol 2) ketone 3) aldehyde 4) carboxylic acid

4. (5 points) What is the functional group in CH_3COH ?
- 1) alcohol 2) ketone 3) aldehyde 4) carboxylic acid 5) ether

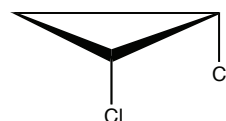
5. (5 points) The molecule at right is
- 1) a cis isomer 2) a trans isomer
- 3) not an isomer



6. (5 points) The molecule at right is
- 1) a cis isomer 2) a trans isomer
- 3) not an isomer

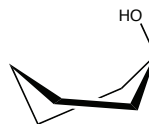


7. (5 points) The molecule at right is
- 1) a cis isomer 2) a trans isomer 3) not an isomer



8. (5 points) In the molecule at right the hydroxyl is in what position?

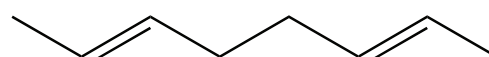
- 1) axial 2) equatorial
3) cis 4) trans



9. (5 points) Which molecule below is less reactive, in general?



octane

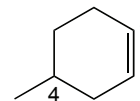


trans, trans-2,6-octadiene

- 1) octane 2) trans,trans-2,6-octadiene 3) they have the same reactivity

10. (5 points) In the molecule at right, the ideal bond angle around the 1-carbon is:

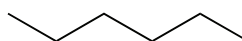
- 1) 120° 2) 109° 3) 90° 4) 180°



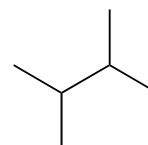
11. (5 points) Which molecule below has the highest boiling point?



octane



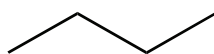
hexane



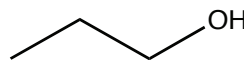
2,3-dimethylbutane

- 1) octane 2) hexane 3) 2,3-dimethylbutane

12. (5 points) Which molecule below has the highest boiling point?



butane



1-propanol

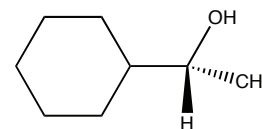
- 1) butane 2) 1-propanol

13. (5 points) In the molecule at right, the alcohol is classified as:

1) primary

2) secondary

3) tertiary

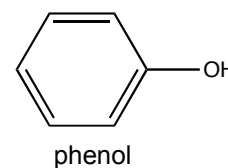
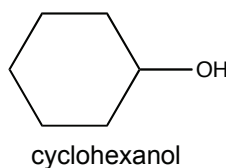


14. (5 points) Which is the weaker acid?

1) cyclohexanol

2) phenol

3) they are the same



15. (15 points) Draw the structure for 3,5-dimethyl-2-hexanol

16. (15 points) Draw the structure for 4-chlorophenol

17. (5 bonus points) What is the catalog number for this class?

1) 250

2) 111

3) 86

4) 345

5) 68.6 g