Chem 250  In-class Quiz #1

This exam is composed of 17 questions.

As discussed in the course syllabus, honesty and integrity are absolute essentials for this class. In fairness to others, dishonest behavior will be dealt with to the full extent of University regulations.

I hereby state that all answers on this exam are my own and that I have neither gained unfairly from others nor have I assisted others in obtaining an unfair advantage on this exam.

_________________________________
Signature

Please read and sign the above. Place your name on all pages. Turn in the entire exam at the end of this 30 min exam.

PERIODIC TABLE OF THE ELEMENTS

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1. (5 points) What is the chemical formula for the molecule $\text{H}_2\text{C}==\text{CH}_2$?
   1) C$_2$H 2) C$_2$H$_2$ 3) C$_2$H$_3$ 4) C$_2$H$_4$ 5) C$_2$H$_6$

2. (5 points) What is the chemical formula for the molecule $\text{ }$?
   1) C$_6$H$_8$ 2) C$_6$H$_{10}$ 3) C$_6$H$_{12}$ 4) C$_6$H$_{14}$ 5) C$_6$H$_{16}$

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

4. (5 points) What is the functional group in CH$_3$COCH$_3$?
   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 more reactive, in general?

\[ \text{octane} \quad \text{trans, trans-2,6-octadiene} \]

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 4-carbon is:

1) 120° 2) 109° 3) 90° 4) 180°

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

\[ \text{octane} \quad \text{hexane} \quad \text{2,3-dimethylbutane} \]

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

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

\[ \text{butane} \quad \text{1-propanol} \]

1) butane 2) 1-propanol
13. (5 points) In the molecule at right, the alcohol is classified as:
   1) primary  2) secondary  3) tertiary

   ![Molecule](image1.png)

14. (5 points) Which is the stronger acid?
   1) cyclohexanol
   2) phenol
   3) they are the same

   ![Images](image2.png)

15. (15 points) Draw the structure for 4,5-dimethyl-3-hexanol

16. (15 points) Draw the structure for 3-chlorophenol

17. What is the catalog number for this class?
   1) 111  2) 250  3) 86  4) 345  5) 68.6 g