

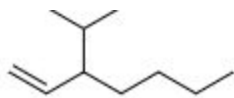
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SCH4U Quad 2 - Organic Chemistry Test Part 2

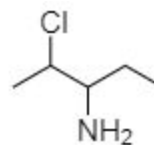
Short Answer

1. Give the IUPAC name for each of the following structures: (12)

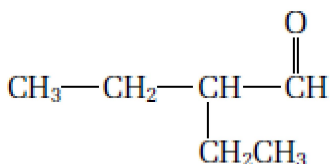
a)



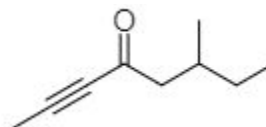
b)



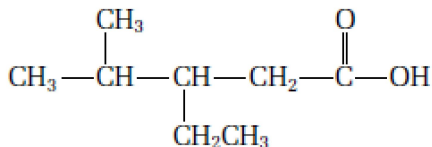
c)



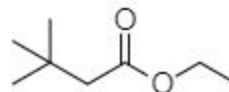
d)



e)



f)



2. Draw and name a cyclic organic compound two double bonds, a halide branch and a carbonyl functional group. (2 K)

3. Draw and name a -diol that is eight carbons long, and contains a triple bond in the middle of the molecule (2 K).

4. Draw and name an amide that is derived from a 3 carbon amine and a 5 carbon carboxylic acid (2 K).

Name: _____

5. Using a 4-carbon molecule, illustrate and explain the expression “structural isomers”. (2 A)

4. The unknown compounds in the table below are ethane, ethanol, methoxymethane, ethanamine, and ethanoic acid. **Hint:** You may want to draw structural diagrams for each compound to assist with answering the following questions.

Compound	Solubility in H ₂ O	Hydrogen bonding	Boiling Point	Odour	Molecular Polarity
A	Infinitely soluble	Strong	17 °C	Fishy	Polar
B	Insoluble	None	-89 °C	Odourless	Non-polar
C	Soluble	Accepts hydrogen bonding from H ₂ O but cannot form hydrogen bonds with its own molecules	-25 °C	Sweet	Polar
D	Infinitely soluble	Very strong	78 °C	Sharp antiseptic smell	Very polar
E	Infinitely soluble	Extremely strong	118 °C	Sharp, vinegar smell	Very polar

a) Using information about the physical properties in the table above, identify only 4 of the above compounds. (4)

A _____
B _____
C _____
D _____
E _____

b) Consider compounds **D and E**. Using your knowledge of organic family properties, justify their differences in boiling points. (2)