

Name: _____

Date: _____

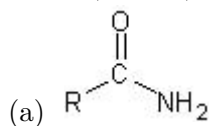
[8 pt] 1. Answer the following questions about the vital-force theory of organic chemistry:

(a) Explain the theory.

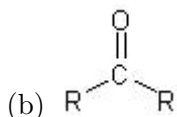
(b) Who is responsible for disproving it **AND** How did he disprove it?

(c) Draw the structure of the molecule he synthesized and identify the functional groups it contains.

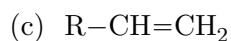
[12 pt] 2. Match the following functional groups with proper class of compound: (Alkane, Alkene, Alkyne, Alkyl Halide, Alcohol, Ether, Aldehyde, Ketone, Carboxylic Acid, Ester, Amide, Amine.)



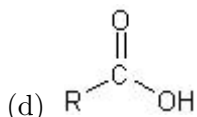
2(a) _____



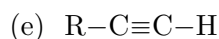
2(b) _____



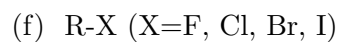
2(c) _____



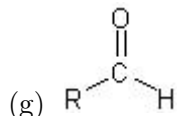
2(d) _____



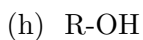
2(e) _____



2(f) _____



2(g) _____



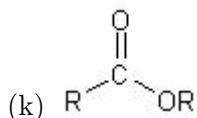
2(h) _____



2(i) _____



2(j) _____



2(k) _____



2(l) _____


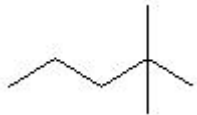
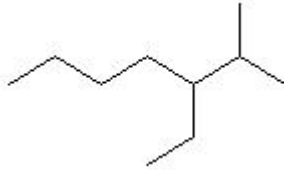
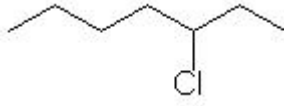
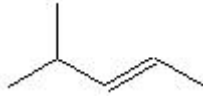
CHE 102 - Homework - Ch 19a
Organic Chemistry Basics

[10 pt] 3. Fill in the missing squares in the chart below.

Condensed Formula	Structural Formula	Line Drawing
$\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_3$		
$\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}(\text{CH}_3)_2$		
$\text{CH}_3(\text{CH}_2)_4\text{CH}_3$		
$\text{CH}_2\text{ClCH}_2\text{CH}_2\text{CH}_3$		
$\text{CH}_3\text{CH}(\text{CH}_3)\text{CH}(\text{CH}_2\text{CH}_3)\text{CH}_2\text{CH}_3$		

CHE 102 - Homework - Ch 19a
Organic Chemistry Basics

[10 pt] 4. Fill in the missing squares in the chart below.

Condensed Formula	Structural Formula	Line Drawing
		 <p>A single line segment representing the ethane molecule.</p>
		 <p>A skeletal structure of 2,2-dimethylbutane, showing a four-carbon chain with two methyl groups attached to the second carbon.</p>
		 <p>A skeletal structure of 3-ethyl-2,4-dimethylhexane, showing a six-carbon chain with a methyl group at C2, an ethyl group at C3, and a methyl group at C4.</p>
		 <p>A skeletal structure of 2-chloro-3-ethylhexane, showing a six-carbon chain with a chlorine atom at C2 and an ethyl group at C3.</p>
		 <p>A skeletal structure of 2-methyl-2-pentene, showing a five-carbon chain with a double bond between C2 and C3, and a methyl group attached to C2.</p>

CHE 102 - Homework - Ch 19a
Organic Chemistry Basics

[10 pt] 5. Fill in the missing squares in the chart below.

Condensed Formula	Structural Formula	Line Drawing
	$ \begin{array}{cccccc} & \text{H} & \text{H} & \text{H} & \text{H} & \text{H} & \text{H} \\ & & & & & & \\ \text{H} & - \text{C} & - \text{C} & - \text{C} & - \text{C} & - \text{C} & - \text{C} - \text{H} \\ & & & & & & \\ & \text{H} & \text{H} & \text{H} & \text{H} & \text{H} & \text{H} \end{array} $	
	$ \begin{array}{ccccccc} & & & \text{H} & & & \\ & & & & & & \\ & & & \text{H} - \text{C} - \text{H} & & & \\ & & & & & & \\ & \text{H} & \text{H} & & \text{H} & \text{H} & \\ & & & & & & \\ \text{H} & - \text{C} & - \text{C} & - \text{C} & - \text{C} & - \text{C} - \text{H} \\ & & & & & & \\ & \text{H} & \text{H} & & \text{H} & \text{H} & \\ & & & & & & \\ & & & \text{H} - \text{C} - \text{H} & & & \\ & & & & & & \\ & & & \text{H} & & & \end{array} $	
	$ \begin{array}{cccccc} & \text{H} & \text{H} & \text{H} & \text{H} & \text{H} & \text{H} \\ & & & & & & \\ \text{H} & - \text{C} & - \text{C} & - \text{C} & - \text{C} & - \text{C} & - \text{C} - \text{Br} \\ & & & & & & \\ & \text{H} & \text{Br} & \text{H} & \text{H} & \text{H} & \text{H} \end{array} $	
	$ \begin{array}{cccccc} & \text{H} & & \text{H} & \text{H} & \text{H} & \text{H} \\ & & & & & & \\ \text{H} & - \text{C} & - \text{C} = \text{C} & - \text{C} & - \text{C} & - \text{C} & - \text{H} \\ & & & & & & \\ & \text{H} & \text{H} & & \text{H} & \text{H} & \text{H} \end{array} $	
	$ \begin{array}{ccccccc} & & & \text{H} & & & \\ & & & & & & \\ & & & \text{H} - \text{C} - \text{H} & & & \\ & & & & & & \\ & \text{H} & \text{H} & & \text{H} & \text{H} & \\ & & & & & & \\ \text{H} & - \text{C} & - \text{C} & - \text{C} & - \text{C} - \text{H} \\ & & & & & & \\ & \text{H} & \text{Br} & \text{H} & \text{H} & & \end{array} $	