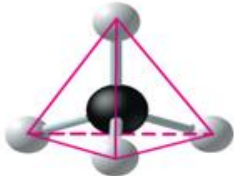

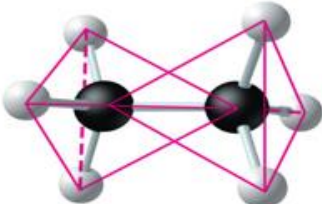

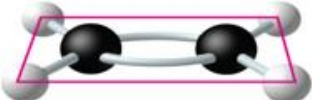



Chapter 4

Chapter 4: Carbon & the Molecular Diversity of Life **Guided Reading**

This chapter is a review of material previously learned in other science classes.

1. Why is organic chemistry so important in the study of biology?
2. Why was the Urey-Miller experiment so important?
3. What is special about carbon that makes it the central atom in the chemistry of life?
4. Fill in the chart below. Note that the first column is different from what is in your text book.

Number and Type of Bonds to Carbon	Molecular Formula	Structural Formula	Ball-and-Stick Model	Space-Filling Model
		$\begin{array}{c} \text{H} \\ \\ \text{H} - \text{C} - \text{H} \\ \\ \text{H} \end{array}$		
		$\begin{array}{c} \text{H} \quad \text{H} \\ \quad \\ \text{H} - \text{C} - \text{C} - \text{H} \\ \quad \\ \text{H} \quad \text{H} \end{array}$		
		$\begin{array}{c} \text{H} \quad \quad \text{H} \\ \diagdown \quad / \\ \text{C} = \text{C} \\ / \quad \diagdown \\ \text{H} \quad \quad \text{H} \end{array}$		

© 2011 Pearson Education, Inc.

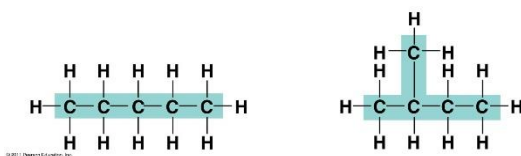
5. What is a hydrocarbon? What is important about reactions involving hydrocarbons?

Chapter 4

6. What is an isomer?

7. On the figures below, identify the type of isomer pictured and how the two molecules are different from each other.

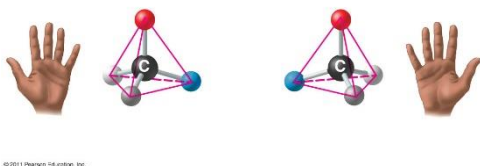
a)



b)



c)



8. Complete the graphic organizer for the functional groups on the following page.

9. Draw the structure of adenosine triphosphate.

10. What happens when ATP reacts with water? Explain in words and draw the reaction.

11. Test Your Understanding

1. _____
2. _____
3. _____

Chapter 4

4. _____
5. _____
6. _____
7. _____
8. _____
- 9.