

Section 3B Review

Name: _____

- 1) What are petrochemicals? What are they used to build?
- 2) What is a monomer? What is a polymer?
- 3) What is the process of making a polymer?
- 4) How do you make different plastics using the process above?
- 5) What is the maximum number of electrons held by the first electron shell? The second?
- 6) Draw Lewis dot structures of carbon, hydrogen, nitrogen and oxygen.
- 7) How do covalent bonds hold atoms together? What is the magic number for valence electrons?
- 8) Draw a Lewis dot structure for the following covalent compounds:
 - a) CO_2
 - b) NH_3
- 9) How do ionic bonds hold atoms together? What is the magic number for valence electrons?
- 10) Draw a Lewis dot structure for the following ionic compounds:
 - a) Na_2O
 - b) AlBr_3
- 11) When a line is connecting two atoms, depicting a bond, how many electrons are represented by that line?
- 12) What is a valence electron?

13) Complete the table:

	Type of bonds seen	Number of atoms bonded to carbon atoms	Saturated or unsaturated
Alkanes			
Alkenes			
	triple		

14) Draw a pentane, pentene, and pentyne molecule. Label each drawing with its molecular formula.

15) What do the following prefixes mean?

Meth: _____

Hex: _____

Prop: _____

Pent: _____

But: _____

Oct: _____

Eth: _____

Dec: _____

16) How does 1-pentene differ from 2-pentene?

17) What is the molecular formula for cyclopentane? (Hint: draw it out)

18) Draw cyclohexane. Explain how this is different from cyclohexene.

19) Next to each of the following molecules, indicate whether they are saturated or not. (Hint: if you don't remember the formulas, try drawing them out.)

C_6H_{12} _____

C_5H_{12} _____

C_5H_{10} _____

C_6H_{14} _____

20) Draw the structure for an alcohol, a carboxylic acid, an ester, and an ether.

21) A condensation ester is made by mixing a carboxylic acid with an alcohol. When this reaction happens, what other product is formed? Where do each of the elements in this product come from?