

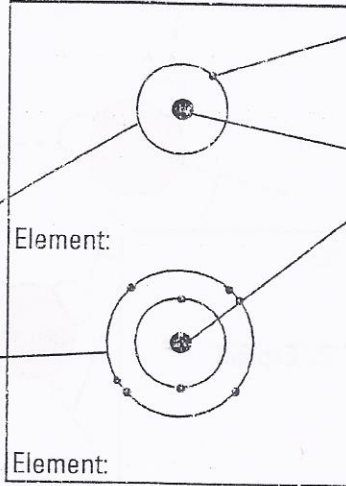
SECTION
2.1

ATOMS, IONS, AND MOLECULES
Power Notes

Atom:

Energy levels:

Outermost energy levels:



1. _____

2. _____

Composed of:

3. _____

4. _____

Compound:

Ionic bonds:

Ions:

Positive ions:

Negative ions:

Covalent bonds:

Molecules:

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SECTION 2.2

PROPERTIES OF WATER
Power Notes

Polar molecules:

Nonpolar molecules:

1.

2. Explain:

Atom:

Charge:

Atom:

Charge:

Properties of water related to hydrogen bonds:

- 1.
- 2.
- 3.

Solutions:

Solvents:

Solutes:

Acids:
pH:

Neutral:
pH:

Bases:
pH:

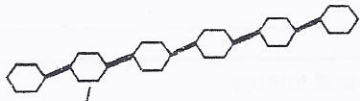

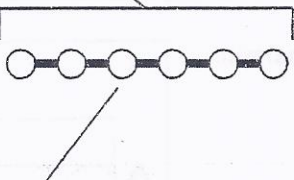
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CHAPTER 2
Chemistry of Life

SECTION
2.3

CARBON-BASED MOLECULES
Power Notes

Monomer:	→	Polymer:
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Type of Molecule	Functions	Example
1. Carbohydrate		Polymer – cellulose  Monomer: _____
2.		Molecule: _____  _____
3.		Polymer: _____  Monomer: _____

Joined by

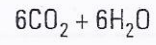
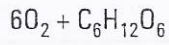
bonds.

Nucleic Acids	Types:	Functions:
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SECTION
2.4

CHEMICAL REACTIONS
Power Notes

Chemical Reaction



1. _____

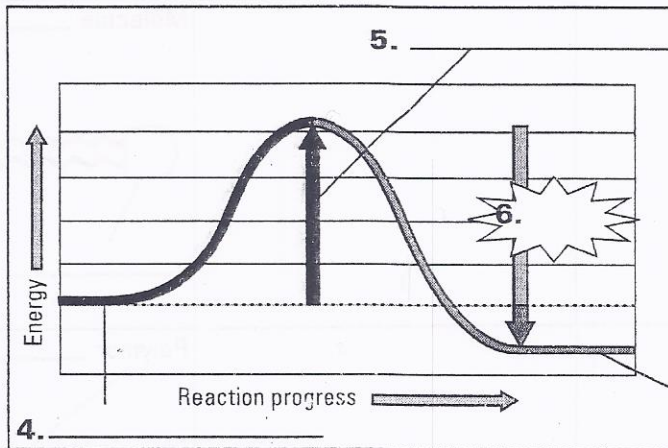
2. _____

3. _____

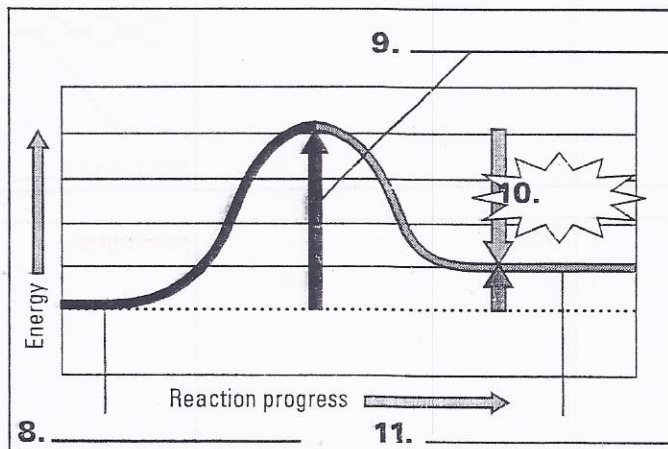
Bond energy: _____

Chemical equilibrium: _____

Exothermic:



Endothermic:



CHAPTER 2
 Chemistry of Life

SECTION
2.5

ENZYMES
Power Notes

A Catalyst:

- 1.
- 2.

Enzymes:

Homeostasis and enzymes:

Enzyme structure and function:

Substrates and Lock-and-Key Model of Enzyme Function	
Substrates:	Lock-and-key model:

CHAPTER
 CHEMISTRY OF LIFE

Use p. 38 to help you.

Ionic and Covalent Bonding

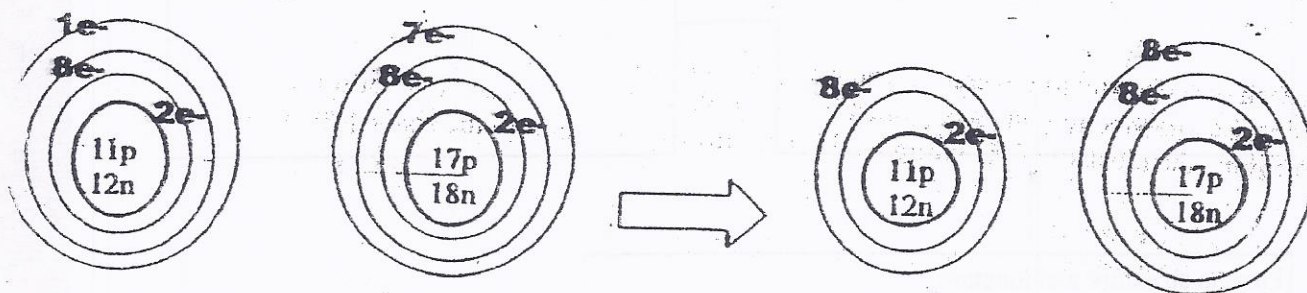
2-1 wkshet

Name: _____

#71

Whether an atom combines with another atom depends on the number of electrons in its outermost shell or orbit. These electrons are known as valence electrons. Some elements do not combine or react to other elements because their energy shells contain the maximum number of electrons that they can hold. Thus, they do not need to gain, lose or share electrons to become stable. For this reason it is important to identify the number of valence electrons in an atom of an element to understand its ability to combine with other elements to make compounds.

The bond below creates NaCl (sodium chloride) which is table salt.



Na - Sodium

Valence Electrons _____
 Total Electrons _____
 Protons _____
 Neutrons _____

Cl - Chlorine

Valence Electrons _____
 Total Electrons _____
 Proton _____
 Neutrons _____

Na - Sodium

Valence Electrons _____
 Total Electrons _____
 Protons _____
 Neutrons _____

Cl - Chlorine

Valence Electrons _____
 Total Electrons _____
 Protons _____
 Neutrons _____

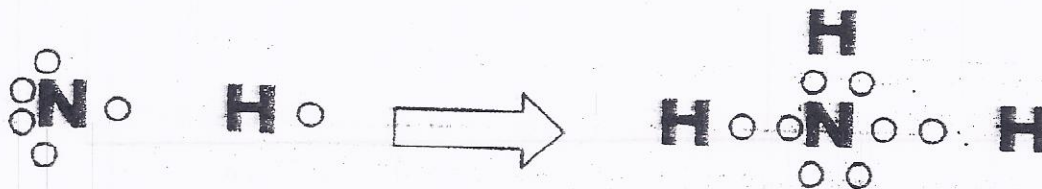
- How many electrons does each element have available to produce a bond?
 Sodium _____ Chlorine _____
- Which element has lost electron(s)? _____
- The element that has lost an electron is now considered a(n) _____ ion. **WHY?**

Which element has gained electron(s)? _____

The element that has gained an electron is now considered a(n) _____ ion. **WHY?**

What type of bond has been formed in the picture above? _____

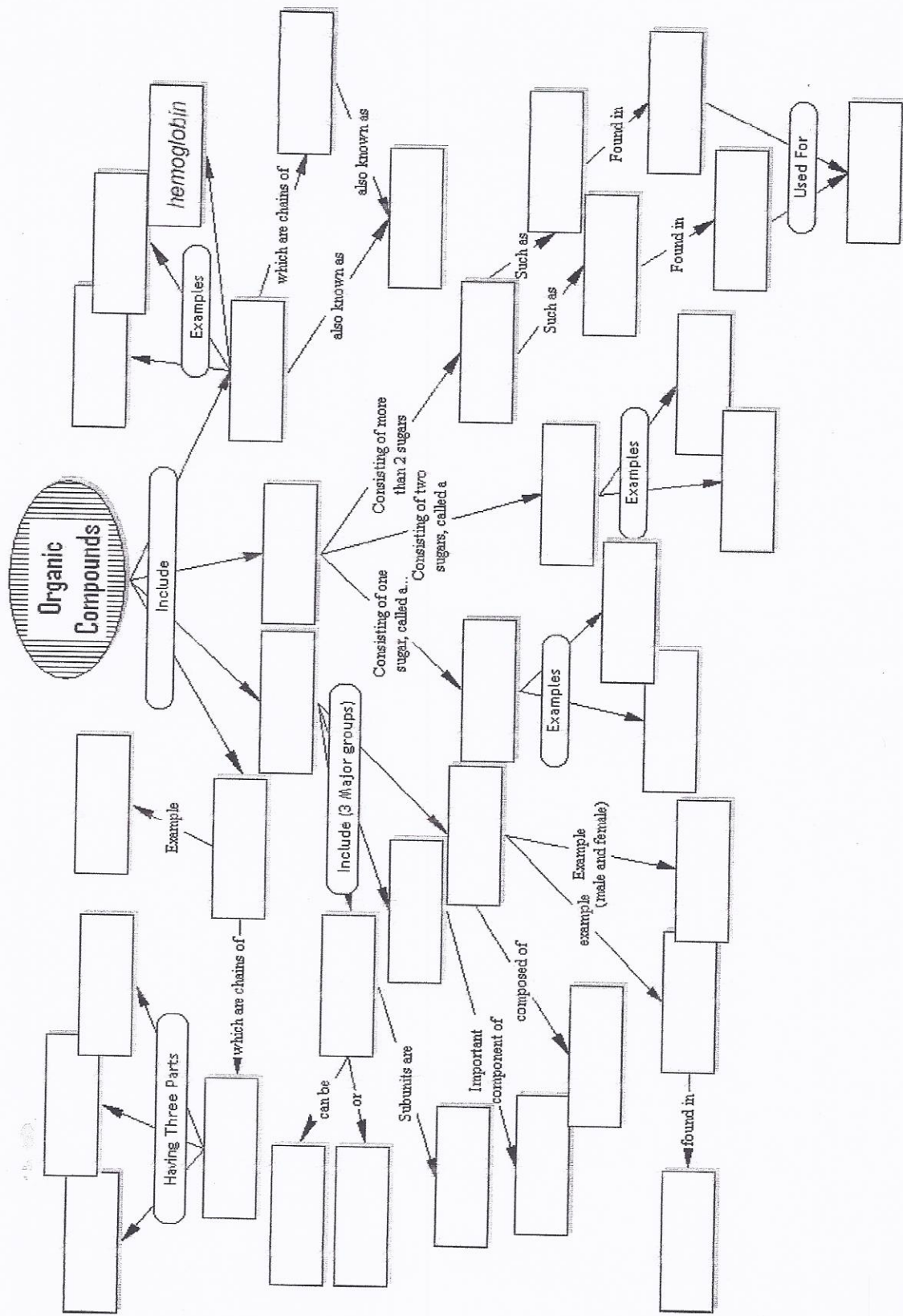
The bond below creates NH_3 which is Ammonia.



- How many valence electrons are available in one atom of each element above?
 Hydrogen _____ Nitrogen _____
- Why does it take 3 hydrogen to bond with one nitrogen?

Name: _____ Date: _____

Concept Map -- Organic Compounds



WORD BANK

Amino acids, animals, Carbohydrates, Cell membrane, Cholesterol, DNA, Disaccharide, Egg yolk, Energy storage, Enzymes, Fats, Fatty acid, Fructose, Glucose, Glycogen, Hemoglobin, Hormones, Insulin, Lactose, Lipids, Monosaccharide, Nitrogen Base, Nucleotide, Nucleic Acids, Phosphate Group, Phospholipid, Plants, Polypeptides, Polysaccharides, Proteins, Saturated, Starch, Steroids, Sucrose, Unsaturated, 4 rings of carbon, 5 carbon sugar