

Name _____

Due Date _____

Biochemistry Review Packet

Inorganic and Organic molecules of Life

A. Basic Chemistry

1. The basic building blocks of all matter are called _____
2. A substance made up of identical atoms is called an _____
3. Two or more elements chemically combined form a _____
4. Two or more substances that can be separated by ordinary means is a _____
5. Atoms have 3 subatomic particles, name and describe each, including their location:

6. Define Acid: _____
7. Define Base: _____
8. What number on the pH scale indicates neutral: _____
9. In the space below draw and label a pH scale:

B. Biochemistry

1. Explain the difference between organic and inorganic compounds:

2. The four types of organic compounds are:

3. Large organic compounds are possible due to the bonding power of _____, which can make _____ bonds.

4. Four inorganic compounds that are necessary to life include _____

C. Carbohydrates

5. The three elements found in carbohydrates are:

6. The relationship between Hydrogen and Oxygen is _____

7. The monomers (building blocks) of carbohydrates are _____

8. Draw an example of the building block of carbohydrates below:

9. All cells perform the life process of _____ to convert _____ to energy usable by cells (ATP)

10. The formula for this organic molecule is _____

11. Two monosaccharides joined together form a _____ and three or more monosaccharides joined together form a _____.

12. Why is the formula for a disaccharide not double that of a monosaccharide?

13. The process of joining these molecules together by removing water is called

_____. Draw the reaction below:

14. The process of breaking these molecules apart (digesting) by adding water is called

_____. Draw the reaction below:

15. What two functions do polysaccharides serve in cells? (give and example of each)

- _____
- _____

16. Many sugars end in “_____”

D. Lipids

1. The three elements found in lipids are:

2. Lipids contain much less _____ than carbohydrates

3. The building blocks of lipids are _____

4. Draw the building blocks of lipids below:

5. Lipids that contain all single carbon bonds are _____ fats

Lipids that contain a double or triple carbon bonds are _____ fats

6. List two reasons why lipids are important to living organisms

E. Proteins

1. The four elements found in all proteins are:

2. The monomer (building block) of proteins are _____

3. Draw the monomer of proteins below:

4. Each different amino acid has a different _____

5. Through the process of _____ two amino acids are joined by a _____ bond. The resulting dimer is called a

_____, three or more amino acids joined together is called a _____ otherwise known as a _____

6. What are some important proteins and what roles do they play in living organisms

- _____
- _____
- _____
- _____

F. Nucleic Acids

1. The elements found in all nucleic acids are: _____

2. The monomer (building block) of nucleic acids are _____
3. Name the three parts of a nucleic acid

4. Draw the monomer of nucleic acids below:

5. The two types of nucleic acids are _____ which stands for
_____ and _____ which stands for

 - a. Which nucleic acid carries hereditary material? _____
 - b. Which nucleic acid aids in protein synthesis? _____

6. Nucleic acids get their name from where they reside in living organisms, where is this?

G. Enzymes

1. Enzymes are made of _____
2. Most enzymes end in _____
3. Why are enzymes considered "organic catalysts"?

4. The substance an enzyme acts upon is called the _____
5. The special region on the surface on an enzyme that makes it specific is called the

6. The adjoined enzyme and substrate are called _____
7. One model of enzyme specificity is called the _____
8. Draw an example of this model:

9. Complete the following chart:

Enzyme	Substrate
Protease	
	Lipids
Maltase	
	Lactose
Sucrase	

10. List and describe the three factors that effect enzyme activity:

- _____
- _____
- _____

F. Sayings:

1. DNA IS _____
2. SHAPE DETERMINES _____

Label the following structural formulas:



