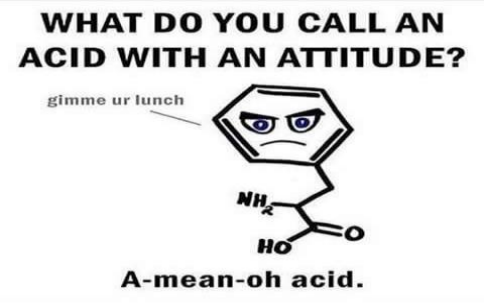
Name:_____



Unit 1: Structure and Function of Life: Textbook Introduction

1.1:

Is science just a collection of NEVER changing facts: _____

What is science? _____

Name the three ways listed that make science different from other human endeavors:

1. _____
2. _____
3. _____

What is one thing that scientific knowledge helps us do? _____

Is there one cut and dry scientific method that all scientists use? _____

What do scientific investigations begin with? _____

Observations lead to _____

A logical interpretation based on what scientists already know is known as an _____.

Define Hypothesis _____

When testing a hypothesis an experiment in which only _____ variable is changed is conducted, this is known as a _____ experiment.

A _____ variable is the one that is being manipulated.

A _____ variable is the one that responds to a variable being changed.

What is data? _____

1.3:

Define Biology: _____

What lives on the border between organisms and nonliving things? _____

List the characteristics that most living things have in common:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

List and summarize three of the Big Ideas in Biology

Big Idea: _____

Summary: _____

Big Idea: _____

Summary: _____

Big Idea: _____

Summary: _____

2.1:

What is the basic unit of matter? _____

What are the three subatomic particles that makeup an atom? _____

Ionic bonds are formed when electrons are _____ from one atom to another.

Covalent bonds are formed when electrons are _____ between two atoms.

When atoms are joined they are called a _____.

2.3:

Organic chemistry is the study of compounds that contain bonds between _____ atoms.

Carbon can easily bond to_____.

What does macromolecule mean? _____

The smaller units in macromolecules are known as _____.

When you put many monomers together you get a _____.

List and summarize the four main groups of macromolecules:

1. Name four groups of organic compounds found in living things.
    1. _____
    2. _____
    3. _____
    4. _____

4. Describe at least one function of each group of organic compound.

    1. Organic Compound: _____

       Function: _____

    2. Organic Compound: _____

       Function: _____

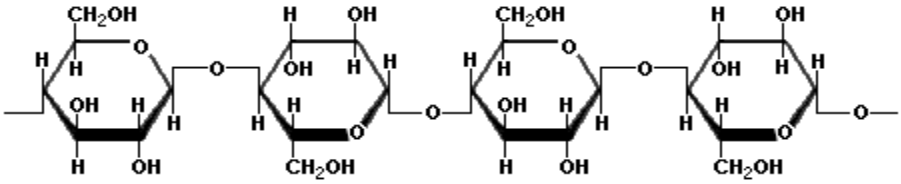
    3. Organic Compound: _____

       Function: _____

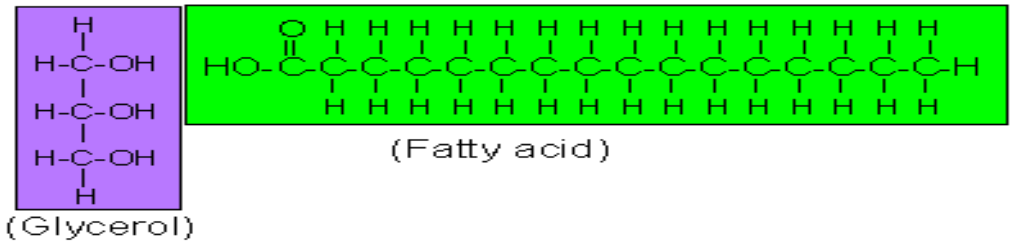
    4. Organic Compound: _____

       Function: _____

5. A structural formula shows how the atoms in a compound are arranged. Look at the below images and answer the questions.



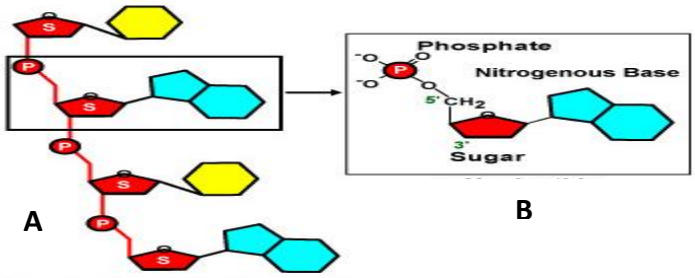
    a. What atoms constitute the compound above?_____
    b. What class of macromolecule does the compound belong to? _____
    c. What are the monomers of this polymer called? _____
    d. What are some types of food that contain this macromolecule? _____



a. What atoms constitute the compound above? _____

b. What class of macromolecule does the compound belong to? _____

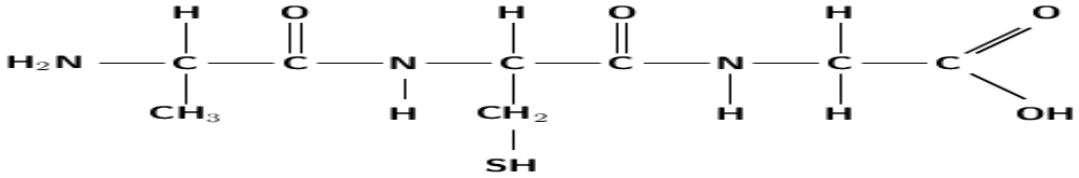
c. What are some types of food that contain this macromolecule? _____



a. What class of macromolecule does the compound belong to? _____

b. Which is the monomer (A or B)?_____

c. What is the monomer called? _____



a. What atoms constitute the compound above? _____

b. What class of macromolecule does the compound belong to? _____

c. What are the monomers of this type of polymer called? _____

d. What are some types of food that contain this macromolecule?_____

7.3:

One of the most important functions of the cell membrane is to keep the cell's _____ _____ relatively _____.

Particles tend to move from an area where they are _____ concentrated to an area where they are _____ concentrated.

The process described in the previous question is known as _____.

Do particles continue to move across the cell membrane even after equilibrium is reached? _____

Define passive transport: _____

Does facilitated diffusion require energy? _____

The channels that molecules pass through during facilitated diffusion are made of _____

What is an example of facilitated diffusion discussed on page 210? _____

Water molecules move in both directions across the membrane. True or False? _____

Does water move in or out of a cell that is in a hypertonic solution?_____ This causes the cell to _____.

Does water move in or out of a cell that is in a hypotonic solution? _____ This causes the cell to _____.

_____ _____ requires energy to move materials against the concentration gradient.

Active transport is generally carried out by _____ _____ that found in the membrane.

_____ is the process of taking material OUT of the cell.

_____ is the process of taking material INTO the cell.

7.4:

What are the basic living unit of all organisms? _____

Define homeostasis: _____

What four things do living things have to do to maintain homeostasis?

1. _____
2. _____
3. _____
4. _____

What is meant by cell specialization? _____

List the four levels of organization in multicellular organisms in order from smallest to largest:

Cells communicate by means of _____.

p.732-733:

What is the most important function of all body systems? _____

Define Feedback Inhibition (aka Negative Feedback): _____

_____

Describe the household example given of Negative Feedback: _____

_____

What types of negative feedback does your body have for temperature? _____

_____

Describe how the Nervous and Muscular systems work together to produce a response in the example on page 733.

_____

_____

p.808-809:

What body system helps complex organisms respond to the world around them? _____

What are neurons? _____

Define stimulus: _____

What are 4 things listed that can serve as a stimulus? _____

What are two types of stimuli that humans cannot detect that some other organisms can?

_____

A specific reaction to a stimulus is called a _____.

Give an example of two ways in which you respond to a stimulus:

_____

_____