Biology 067 Chapter 2 & 3: Chemistry of Life
Practice Test #1 Based on Board Notes

Define matter:

Define element:

Define compound:

Define atom:

How many known elements are there?

How many naturally occurring elements are there?

84
92
82
99

Name and give the symbols for the 8 most common elements.

What are the two kinds of mixtures?

What are two kinds of bonding?

What is the difference between them?

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How many poles does a water molecule have?

What is the characteristic of polar molecules?

Will polar molecules dissolve non-polar molecules? Why or why not?

What does it mean to have a “high heat capacity”?

What has the highest heat capacity?

What are the 4 building blocks of biological systems?

Define density:

Which are denser, liquids or solids?

Is ice denser than water?

What is the difference between adhesive and cohesive?

Is water cohesive or adhesive?

Why does water flow?

What kind of bonding takes place in water?

Define vapourization:

Define oxidation:

Define reduction:

The molecules of life are (a) micro or (b) macro

Name 4 macro molecules:

Proteins are (a) fatty acids (b) nucleic acids (c) lipids (d) amino acids

Name 6 types of sugars:

In general, how may carbon molecules in glucose?

What is the term that describes the formation of biological molecules?

What actually happens in dehydration synthesis?

What is the term that describes water being set free?

Carbohydrates are formed from _____. What are the two types main of carbohydrates?

When 2 glucose molecules bond together, we have a _____.

What is the difference in composition between monosaccharides and polysaccharides?

Glycogen is an example of a complex carbohydrate in the _____ kingdom and a polysaccharide is an example in the _____ kingdom.

All plants and animals are made up what three elements?

Lipids are formed from _____ and _____.

Describe the composition of glycerol:

Describe the composition of fatty acids:

Fats are in _____ and oils are in _____.

What are phospholipids composed of?

_____ is an example of a saturated fat. How would you describe a saturated fat from a chemical point of view?

_____ is an example of an unsaturated fat. How would you describe a unsaturated fat from a chemical point of view?

What is the difference between a fat and a phospholipid?

The polar head is not electrically neutral; it is _____.

The polar heads of phospholipids are (a) hydrophobic or (b) hydrophilic

The subunits of proteins are _____. What is the short form? _____

How many are there? _____

2 amino acids together is a _____. With 3 ,it is a _____. With many, it is a

_____.

What happens after a dehydration reaction?

What happens after a hydrolysis reaction?

Acids have a high concentration of _____ in water. Bases have a low concentration of

_____.

Low PH – high [H+] describes a _____. High PH – low [H+] describes a _____.

Our bodies generally have _____ acids and bases. _____ can absorb excess [H+] if necessary.

Name the subunits of the following macromolecules:

carbohydrates _____

lipids _____

proteins _____

nucleic acid _____

Define the following terms:

synthesis

degradation

What are the subunits of amino acids? What is the chemical group?

What does –R mean?

When and where are peptide bonds formed?

Another term for synthesis of a protein is _____.

Level	Shape	Bond
Primary		
Secondary		
Tertiary		
Quaternary		

Protein formation takes into consideration *level*, *shape*, and *bond*: Fill in the following chart:

The subunits of nucleotides are called

What does DNA stand for?

How many strands does it have?

What is this strand structure called?

What are the sides of the structure composed of?

DNA has complementary base pairs. What bonds to what?

How many carbon sugars does it have?

Where is it located?

What is its function?

What are the 4 nitrogen bases of DNA?

What does RNA stand for?

How many strands does it have?

What are the bases?

Where is RNA located?

What is RNA's function?

What is the bonding pattern of RNA?

What does APT stand for?

What is the function of APT?

Define cell:

What 6 functions must a cell perform?

What are 3 aspects of cell theory?

What determines cell size (large or small?)

Name 2 types of animal cells:

Which is more developed?

What is the "central organizing area" of a cell?

The _____helps regulate internal cellular activity. What is it made of?

Chloroplast is found in _____ cells but not in _____ cells.

Describe the structure and function of the nucleus of a eukaryotic cell:

How many layers is the endoplasmic reticulum?

What is the difference between smooth and rough EF?

What is the function of the mitochondria?

What is the structure and function of the Golgi body?

What is cytoplasm?

What is a vesicle?

What is the function of lysosomes?

What are centrioles and what do they do?

What is the function of the cytoskeleton?

What is the structure and function of the plasma membrane?

Explain the term passive transport.

What is osmosis?

What is facilitated transport?

Explain the term active transport.