Chemistry of Life Review

List the four elements that make up 96% of all living matter: _____, _____, _____, and _____ What are the next two elements _____ and _____

Organic molecules are made up of the element_____

Name the four organic macromolecules:

Grand Master Allen has a patch of sweet corn behind the school. In the past, she has only planted corn without fertilizer. He wants to see if the sweet corn will grow better with a "fertilizer" from his cat's litter box. Grand Master Allen plants one row of corn with the "fertilizer" and another row without the fertilizer. Both rows were planted in the same area and in the same type of soil. Both rows were also planted with the same exact type of seed.

What is the IV:

What is the DV:

What is the Control:

What are the Controlled Variables – all of them:

Define and describe ionic bonds.

Define and describe covalent bonds.

Define and describe hydrogen bonds.

What is an Ion and how does it form?

What is the difference between a polar bond and a non polar bond, and which one is water?

Acids have more what compared to a base.

What is a strong base?

How do buffers help us.

Macromolecules are made up of long chains of monomers called _____

The building blocks of carbohydrates are called _____.

Long chains of sugars are called _____.

Lipids are made up of _____.

Proteins are made up of long chains of _____.

Nucleic Acids carry _____ information, which is passed on to the next generation.

Name 2 types of nucleic acids:

What is an enzyme?

What are enzymes made of?

What is the molecule that the enzyme works on called? _____

The area on the enzyme in which the substrate binds is called the _____

Enzymes can be used (circle one): Once Over and over

What is the word for the inactivation of a protein due to temperature or pH?

What is the basic unit of an element called? _____

Name the three parts of an atom, where they are found, and list their charge.

A(n) _____ bond means that two atoms are sharing electrons.

A(n) _____ bond happens when one atom steals electrons causing ions to be formed that are then attracted to one another.

Which type of bond is the strongest?

When water bonds to itself, it is called _____; when it bonds to another substance, it is called _____.

Circle the correct term within the brackets. Substances with a pH between 1 and 6.9 are [acids / bases / neutral] and have a higher concentration of [H^+ / OH^-] ions. Substances with a pH between 7.1 and 14 are [acids / bases / neutral] and have a higher concentration of [H^+ / OH^-] ions. Substances with a pH of 7.0 are [acids / bases / neutral].

Draw and Label all the parts to an enzyme. Include the reactants and products.

Understand the two types of Inhibition of enzymes and what is different between them.

Understand how each of these scientist contributed to the cell theory
Robert Hooke, Anton van Leeuwenhoek,Theodor Schwann, Matthias Schleiden, Rudolf Virchow

What are the three parts of the cell theory?

Understand what the main differences between Prokaryotes and Eukaryotes.

Know the similarities between Prokaryotic and Eukaryotic cells

Describe the structure and function of the Cell membrane.

Know the form and function of the nucleus

Know all the basic organelles in plant and animal cells (very important)

List special structures of plant cells, and state what they do.

Describe different types of passive transport.(Diffusion, Facilitated Diffusion, and Osmosis)

Be familiar with protein channels and carriers

Know Hypotonic, Hypertonic and Isotonic when dealing with osmosis

Explain how different types of active transport occur.

What is the cell cycle?

How many phases are there in Interphase and what happens in each phase?

What is Mitosis?

What are the 4 phases of mitosis and what happens in each. Make a drawing of what each phase looks like.

What is Cytokinesis and how does it differ in animal and plant cells?