Name _____ Block _____ Date _____

Test 1 Study Guide: Biochemistry (BIO.2a-b) and Experimental Design – Due test day (50 pts)

Answer each question using information from your notes, quizzes, and the attached summary.

Properties of Water
Complete the chart below

Property	Describe what water does.	Why is this important?
Low density of ice		
High heat capacity		
Universal solvent		
Capillary action		

What is the most common molecule in cells? About what fraction of the cell is made up of this?

_____

What is the difference between cohesion and adhesion?

_____

Draw the polarity of a water molecule.	Draw a hydrogen bond between two water molecules.

Label the pH scale below with the following terms: **strong acids, weak acids, strong bases, weak bases, neutral, pure water, sour substances (citrus), bitter substances (soap)**

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|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
0                      7                      14
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Organic Macromolecules

List the 6 main elements of living things.

Explain why carbon atoms are important to large organic macromolecules.

Describe the relationship between a monomer and a polymer.

Complete the chart below

Macromolecule	Monomer	Functions	Examples
Carbohydrate			
Lipid			
Protein			
Nucleic Acid			

Complete the chart below by drawing the structure of each monomer

Carbohydrate (Monosaccharide)	Lipid (Fatty Acid)
Protein (Amino Acid)	Nucleic Acid (Nucleotide)

Experimental Design – Answer the following questions based on the scenario below.

Pusha-T wants to know the effect of different colors of light on the growth of plants. He believes that plants can survive best in white light. He buys 5 ferns of the same species, which are all approximately the same age and height. He places one in white light, one in blue light, one in green light, one in red light and one in the closet. All of the ferns are planted in Miracle-Grow and given 20 mL of water once a day for 2 weeks. After the two weeks, Pusha-T observes the plants and measures their height.

What is the question Pusha-T is trying to answer?

_____

What is Pusha-T's hypothesis?

_____

Independent Variable

_____

Dependent Variable

_____

Control Group

_____

At least 3 Constants

_____