**Name:\_\_\_\_\_\_\_\_\_\_**

**Chapter 6 and Nature of Science Study Guide**

**Define**

Scientific Theory:

Scientific Law:

Acid:

Base:

Proton:

Neutron:

Electron:

Monomer:

Polymer:

pH:

Buffer:

Mixture:

Solution:

Solvent:

Isotope:

**Short Answer**

Is science creative? If yes, when are scientists creative? If no, why not?

Can a theory become a law? Why or why not?

Why do we say that science is tentative and open to change?

Science cannot \_\_\_\_\_\_\_\_\_\_ an idea, only provide supporting evidence.

If test results \_\_\_\_\_\_\_\_\_\_ a hypothesis, they strengthen that hypothesis but do not \_\_\_\_\_\_\_\_\_\_ it.

If results of a test fail to \_\_\_\_\_\_\_\_\_\_ a hypothesis, the hypothesis can be \_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_.

What should you first do before using a triple beam balance?

How is an ionic bond formed? What happens to the atoms that form ionic bonds? What do we call them?

How is a covalent bond formed?

Why are hydrogen bonds so important for living organisms?

Balance the following equations. Show your work.

\_\_\_\_Zn + \_\_\_\_ HCl 🡪 \_\_\_\_ ZnCl2  + \_\_\_\_ H2

\_\_\_\_\_ Fe + \_\_\_\_ Cl2  🡪 \_\_\_\_FeCl3

Draw the pH scale below. On your scale, indicate where a strong acid, like HCl, might be. Indicate where a strong base, like KOH, might be. Indicate where water is located. Indicate where you would find a weak acid and where you would find a weak base.

If there were no pH buffers in human cells, what might happen?