**Biology**

**Mid-Term Review**

**Topics and Questions**

**Introduction**

What are the 5 steps of the Scientific Method?

What are the characteristics of living things?

Be able to label a microscope(worksheet attached)

Describe a compound microscope, a TEM microscope and an SEM microscope

**Chemistry**

What are the three subatomic particles and their charges?

How do you find the atomic mass and atomic number of an element?

How do you find the number of protons, neutrons and electrons in an element?

How many electrons does each energy level hold?

How do you know if an element is stable?

Why do elements combine?

Compare and contrast ionic and covalent bonds.

Describe the pH scale and how it works. Give examples of acids and bases.

Describe chemical and physical reactions. Give examples of each.

**Macromolecules**

What is an organic compound?

What is the role of carbon in organic compounds?

What are the two types of reactions that molecules go through?

What are the four macromolecules, their composition and function? Give examples of each.

Describe the three types of fats.

Describe the two types of cholesterol.

What is metabolism?

What is an enzyme? How do they work?

**Cells**

What is a cell?

Who stated the cell theory?

Who first looked at cells under a microscope? Cork? Pond water?

Describe prokaryotic and eukaryotic cells?

What is the difference between plant and animal cells?

Define each organelle and its function.

What is osmosis?

What is diffusion?

What is active transport?

Describe a hypertonic solution, a hypotonic solution and an isotonic solution.