

Notes Chapter 7 Section 1

- I. Through the work of many scientists the cell theory was developed.
- II. The invention of the microscope was essential for scientists to understand and study cells.
- III. Cell Theory Principles
 - a. All living things are composed of one or more cells.
 - b. Cells are the basic unit of life
 - c. Cells come from the reproduction of existing cells
- IV. Cell Diversity
 - i. Size
 1. Most cells are microscopic, we cannot see them.
 2. Size is limited by the volume/surface area ratio.
 - a. Important because the nutrients, oxygen, and other materials a cell needs cannot be absorbed readily and wastes cannot be easily removed.
 - ii. Shape and Function
 1. Nerve cells have long stringy appendages used for transmission of electrical impulses.
 2. Skin cells are very flat and thin like paper, to cover a greater surface area and shed easily.
 3. White blood cells are extremely flexible, can change shape when surrounding foreign substances in the body.

4. Muscle cells are long and stringy to stretch between joints and ligaments.

iii. Internal Organization

1. Prokaryotic

- a. Single cell organisms that do not have a true nucleus.
- b. They do have a cell membrane, ribosomes, and genetic material.

2. Eukaryotic

- a. Single or multicellular organisms that has a nucleus and other membrane bound organelles.
 - i. Organelles means little organs.