Name _____

Cell Organelles (p. 62 – 66)

I. The Nucleus

p. 62

City Hall

1. **Which of the following is not a characteristic of the nucleus?**

   a. Most functions of a ~~prokaryotic~~ eukaryotic cell are controlled by the cell's nucleus.
   b. The nucleus is surrounded by lipid bilayer known as the nuclear envelope.
   c. The nuclear envelope is covered in small channels called nuclear pores.
   d. DNA is stored in the nucleus.

2. **What is the function of the nucleolus?**

   - Small region of the nucleus that produces rRNA subunits (partial ribosome assembly)

3. **Every organism has the same number of chromosomes in the nucleus.**

   Circle One : True **False** Humans = 46 chromosomes

II. Ribosomes & The Endoplasmic Reticulum

1. **Define the terms protein and amino acid.** (p. 36)

   p. 36

   Protein – large molecule formed by linked smaller molecules called amino acids

   Amino Acid – building blocks of proteins (20 different A.A.)

2. **List three functions of proteins.** (p. 36)

   1. Enzymes - chemical reactions 2. Structural - skin, muscles, bones 3. Immune - anti-bodies

3. **Where are proteins made in cells?**

   Factories

   Ribosomes ("free ribosomes" suspended in the cytosol)

4. **Define the term endoplasmic reticulum.**

   p. 63

   Endoplasmic Reticulum – system of internal membranes that move proteins + other substances through the cell

5. **What is the difference between rough and smooth endoplasmic reticulum?**

   Semi-Trucks

   Rough : (Attached ribosomes) - Transports proteins that are made by its attached ribosomes

   Smooth : (Lacks ribosomes) - Makes lipids + carbohydrates, + breaks down toxic substances

Cytoplasm → volatile

Centrioles → Add!!

Name _____

Like a Spaceship

6. **Define the term vesicle.**

Vesicle – small, membrane-bound sac that transports substances in cells (enclose and transport proteins from rough ER)

7. **What are the functions of the following cell structures?**

p. 64

Distribution Center

Golgi Apparatus : set of flattened, membrane-bound sacs that modifies, packages, and distributes proteins

The Dump

Lysosomes : small, spherical organelles that contain the cell's digestive enzymes

III. Mitochondria

Power Plant

p. 65

1. **Define the term mitochondria.** (About same size as a bacterial cell)

Mitochondria – organelle that harvests energy from organic compounds to make cellular energy

vary in cells

2. **What is ATP?** main energy currency of cells (Adenosine Triphosph

3. **Describe the internal structure of a mitochondrion.**

Like intestines

Smooth outer membrane / Greatly-folded inner membrane

4. **Mitochondria are capable of manufacturing circular rings of DNA.**

Circle One : True False

IV. Structure Of Plant Cells

p. 66

1. **What is the function of a plant cell wall?** (Composed of cellulose) Tough for humans to digest

(1) Supports + maintains cell shape (2) Protects the cell

(3) Connects it with adjacent cells

2. **Define the term chloroplasts.**

1 or more present

Chloroplasts – organelles that use light energy to make carbohydrates from carbon dioxide + water

3. **Like mitochondria, chloroplasts are capable of producing ATP.**

Circle One : True False

Surrounded by two membranes too!

4. **What is chlorophyll?** (Not in the book.)

Green pigment found in chloroplasts

Algae - vary in color

5. **Define the term central vacuole.**

Water + Food Storage

Central Vacuole - large, membrane-bound space that stores water, ions, nutrients, + wastes