Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**TEST:** Monday 11/4

**Unit 3A Test Cell Organelles and Transport Study Guide**

**I. Cell Organelles**

**1.** What are the 3 components of the cell theory?

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**2. Matching**

A. Nucleus

B. Ribosome

C. Vesicle

D. Rough Endoplasmic Reticulum

E. Smooth Endoplasmic Reticulum

F. Vacuole

G. Lysosome

H. Golgi Apparatus

I. Mitochondria

J. Chloroplast

K. Cell Membrane

L. Cell Wall

**\_\_\_\_\_\_\_**1. Breaks down unwanted parts of the cell

**\_\_\_\_\_\_\_**2. Surrounds all cells providing protection, regulation and structure

**\_\_\_\_\_\_\_**3. Membrane structure that is covered in ribosomes

**\_\_\_\_\_\_\_**4. Makes proteins that will stay in the cell

**\_\_\_\_\_\_\_**5. Makes lipids and detoxifies alcohol/drugs

**\_\_\_\_\_\_\_**6. Membrane-bound sac used for **storage**

**\_\_\_\_\_\_\_**7. Membrane-bound sac used for **transportation**

**\_\_\_\_\_\_\_**8. Modifies, sorts and packages proteins to leave the cell

**\_\_\_\_\_\_\_**9. Contains the DNA, surrounded by the nuclear envelope

**\_\_\_\_\_\_\_**10. Location of photosynthesis, only found in plants/algae

**\_\_\_\_\_\_\_**11. Location of cellular respiration, found in ALL eukaryotic cells

\_\_\_\_\_\_\_12. Provides the rigidity and structure of plant/fungi cells

**3**. Cells that produce a lot of energy would likely have a large amount of \_\_\_\_\_\_\_\_\_\_\_\_\_\_, while cells that produce a lot of proteins would have a large amount of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_?

|  |  |
| --- | --- |
| A. Ribosomes, lysosomes | C. Mitochondria, Ribosomes |
| B. Mitochondria, smooth rough endoplasmic reticulum | D. Lysosomes , vacuoles |

**4.** Which of the following is an organelle that is NOT found in all cells?

|  |  |
| --- | --- |
| A. Ribosome | C. Cytoplasm |
| B. Cell Membrane | D. Vacuole |



**5.** True or False? Prokaryotic cells have a nucleus and membrane-bound organelles \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**6.** True or False? The pictures to the right are prokaryotic cells \_\_\_\_\_\_\_\_\_\_\_\_\_

**7.** Define and provide an example of a prokaryotic cell:

**8.** Define and provide an example of a eukaryotic cell:

**9**. What are 2 organelles that are found in ALL living things?

1. Cell membrane and nucleus
2. Mitochondria and chloroplast
3. Cell membrane and ribosome
4. Ribosome and nucleus

**II. Cell Transport**

**1.** There are 2 types of transport; Active and Passive Transport. Passive transport **does not** require energy and moves from a \_\_\_\_\_\_\_\_\_\_\_\_ concentration to a \_\_\_\_\_\_\_\_\_\_\_ concentration. Active transport **does** require energy and moves form \_\_\_\_\_\_\_\_\_\_\_\_\_ concentration to a \_\_\_\_\_\_\_\_\_\_\_\_ concentration.

**2.** What are the 3 types of passive transport, and what is the difference between each type?

1.

2.

3.

****

**3.** Explain what type of transport is being shown in the diagram to the right.

Is energy being used? \_\_\_\_\_\_\_\_\_\_\_\_\_

**4.** If a fish egg contains 5% solute in its cells and it is placed in a freshwater tank, what will happen to the fish egg?

**5.** If a cell contains 8% salt and it is placed in a solution that also contains 8% salt, what will happen to the cell?

**6.** Label each of the following as hypotonic, hypertonic or isotonic solutions. Label what will happen to the cell.



Solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Happen to cell: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**7.** What type of transport occurs when molecules move against the concentration gradient? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Move down the concentration gradient? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**8.** Draw a phospholipid bilayer and label the nonpolar / polar regions and hydrophilic / hydrophobic regions

**9**. What are 3 additional structures that could be found in the cell membrane and list their function.

1.

2.

3.

**10**. Can a small nonpolar molecule pass though the membrane by simple diffusion? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_