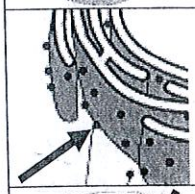
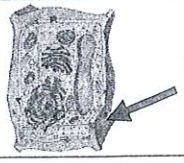
Unit Test 3 Study Guide Name KEY

1. Know the differences between prokaryotes and eukaryotes. (also be able to pick out a picture of a prokaryote and a eukaryote). Fill in the following chart by checking the correct column for each statement:

Statement	Prokaryotes	Eukaryotes
Organisms that have cells that LACK membrane bound organelles	✓	
Do NOT have a nucleus	✓	
Can be either unicellular or multicellular		✓
Only unicellular organisms	✓	
Organisms that have cells containing organelles		✓
Have ribosomes	✓	✓
DNA is found in a nucleus		✓
Have a plasma membrane and cytoplasm	✓	✓

2. What organisms are made up of prokaryotic cells? bacteria!
3. Be able to pick out the following cell parts in a picture of a cell: Nucleus, Ribosomes, Chloroplast, Vacuole, Mitochondria, Plasma Membrane, Cell Wall. *check your diagrams!
4. Complete the following chart: YOU NEED TO KNOW WHAT EACH PART DOES!!

Cell Part/Name of cell part	Function
 Nucleus	Stores DNA in the cell
 Ribosomes	site of protein synthesis (makes proteins using amino acids)
 Vacuole	Stores food + water in PLANTS only
 Mito-chondria	provides energy for the cell from glucose
 Chloroplast	uses sunlight to produce glucose in PLANTS only

 cell wall	provides rigid structure for PLANT and PROKARYOTIC cells. & made of cellulose

5. What are the differences between plant and animal cells. (pick parts from the chart above)
   Plant Cells have chloroplasts, vacuoles,
   and cell walls.

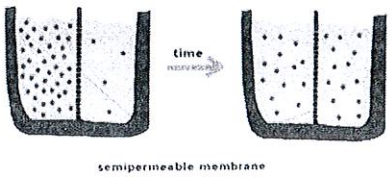
6. Be able to match the following cells with their functions

C Sperm cell	a. transport oxygen, contains hemoglobin
A Red Blood Cell	b. made to contracts and relaxes
D Neuron	c. made for movement (many mitochondria, flagella)
E White Blood Cell	d. made to transmit messages
B Muscle Cell	e. made to fight ~~antigens~~ pathogens

7. What does it mean for a cell to be specialized? (differentiated)
   It has different genes activated in the DNA to make the cell do a specific function.

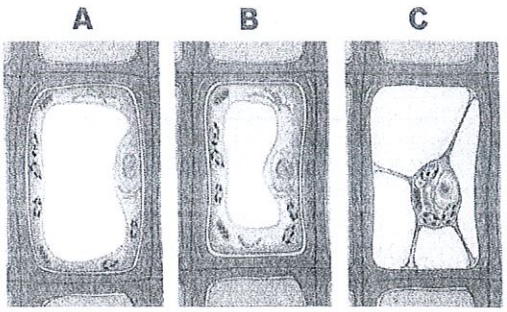
8. What is the difference between passive and active transport. Active requires energy (ATP)
   Describe how substances move (high to low or low to high). High → low concentration
   Which process requires the use of energy? Active transport

9. Describe the differences between diffusion, osmosis and facilitated diffusion.
   Diffusion = particles move randomly from high to low concentration.
   Osmosis = water moves from high → low thru semi-permeable membrane.
   F.ac. diffusion = diffusion occurs thru an integral membrane protein.
   Describe what happened in the diagram:



Water moves to the lower concentration on the right from the higher concentration on the left across the membrane.

10. Describe what kind of solution the following cells are in and what has happened to those cells.



A: Hypotonic = cell is filling with water and becoming tight.

B: Isotonic = cell has no change in volume

C: Hypertonic = cell is losing water to the environment

11. What are the differences between endocytosis and exocytosis?

Endocytosis = cells engulf particles by surrounding them in membrane to create a vesicle.

Exocytosis = cells expel particles when a vesicle fuses with the membrane.

12. Biogenergetics:

a. What are the reactants and products of photosynthesis?
b. What factors have an effect on photosynthesis?
c. What are the reactants and products of cellular (aerobic) respiration?
d. How much ATP is produced by aerobic respiration?
e. What are the two types of anaerobic respiration (fermentation)?
f. Where do these processes (anaerobic respiration) occur?
g. How much ATP is produced by anaerobic respiration?

Websites that might be helpful for review:

http://www.biology.arizona.edu/cell_bio/cell_bio.html *choose cell membrane or prokaryote, eukaryote and viruses*

http://www.classzone.com (click on high school science, north carolina, find your book. Click on the biology book. Click on interactive review. Use the activities from ch.3-cell structure and function-found in the green box in the upper left hand corner)

http://www.cellsalive.com

12) ✱ KNOW THE STRUCTURE OF THE MEMBRANE