Study Guide- Unit 3: Cells and Cell Transport (Chapter 7)

Answer the following questions using your lecture notes, textbook, and other study charts. Remember, this is a study guide and the test is NOT limited to just the information here.

A) In your textbook, turn to pages 220-222 and answer the **<u>selected</u>** question by putting the answers in the space below.

1.	7.	12.	
2.	8	15.	20.
3.	9.	16.	
5.	11.		27.

B). Answer the following questions using your textbook and lecture notes.

- 1. List the three parts of the cell theory
 - a.
 - b.
 - c.

2. Explain the <u>differences</u> between prokaryotic and eukaryotic cells in terms of their parts and what types of organisms fit into that group.

Cell Type	Parts of cell	Types of organisms
Prokaryotic		
Eukaryotic		

3. In the diagram of the plasma membrane, label the following: the hydrophilic head, hydrophobic tails,

carbohydrates, cholesterol, and the proteins. Also distinguish which where the <u>inside</u> and <u>outside</u> of the cell is.



4. Fill in the table below:

List ALL of the cell parts that have something to do with:	Cell Parts (organelles)
Nucleus	
Storage, packaging, transport	
Energy production or conversion	

5. Identify the following parts in the plant and animal cells below and fill out the table comparing both cells.



In both o	In Plant Cell	
Nucleus	Smooth ER	Chloroplast
Nucleolus	Rough ER	Cell wall
Nuclear Envelope	Cytoplasm	Large vacuole
Cell membrane	Ribosomes	
Mitochondria		In Animal Cell
		Centrioles

Plant and Animal Cell Comparison		
Characteristic	Plant Cells	Animal Cells
Shape		
Organelles		
Outer covering		

6. Which objective lens do you ALWAYS start with when using a light microscope?

7. How does the field of view change when going from low power to high power?

8. Describe the difference between a Scanning Electron Microscope (SEM) and a Transmission Electron Microscope (TEM).

- 9. a. What is passive transport? Give 3 examples
 - b. What is active transport? Give 2 examples
- 10. How do transport proteins work?
- 11. Define osmosis using the terms high, low, water, concentration, membrane, permeable, and selectively.

12. Is 10% saline solution for stuffy noses a hypertonic solution or hypotonic solution? Explain your answer.

For Questions 13-15, use the following scenario to describe <u>osmotic</u> changes within a cell: A cell which is 98% water is placed into the following environments. Determine whether the solution/environment is HYPERTONIC, HYPOTONIC, or ISOTONIC.

- 13. a. If the cell was placed into a solution that is 100% water, the environment is ______
 - b. Describe the direction that the water will flow.
 - c. Does the cell shrink, swell, or stay the same? _____

14. a. If the cell was placed into a solution that is 10% sucrose (sugar), the environment is

b. Describe the direction that the water will flow.

c. Does the cell shrink, swell, or stay the same?

15. a. If the cell was placed into a solution that is 2% sucrose (sugar), the environment is

- b. Describe the direction that the water will flow.
- c. Does the cell shrink, swell, or stay the same?
- 16. How are endocytosis and exocytosis similar and how are they different??

Similar	Different

17. Draw a picture of a cell going through endocytosis and exocytosis.

18. Complete the table below by sketching how an animal cell and a plant cell would react when placed in a hypertonic, hypotonic, or isotonic environment. In your sketches, use an arrow to show which way water will move (into the cell, out of the cell, or both in/out equally).

ANIMAL CELL	PLANT CELL
In a hypertonic environment	In a hypertonic environment
In a hypotonic environment	In a hypotonic environment
In an isotonic environment	In an isotonic environment

Ways to Study/Review

- 1. Review <u>all</u> lecture notes and readings.
- 2. Answer the questions at the end of EACH section AND chapter.
- 3. Study with a friend (not just socialize).
- 4. Look over old study guides.
- 5. Flashcards
- 6. Putting lecture notes into your own words
- 7. Make yourself a test and take it. Also, have a friend make a test too and exchange tests.
- 8. Come into class with questions!
- 9. Review a little each day.... Do not cram the night before!

My child has studied this study guide for at least 20 minutes (2 bonus points)

(Parent/guardian signature)

