

## Biology I: Unit 3 Cell Structure

### Review for Unit Test

**Directions:** You should use this as a guide to help you study for your test. You should also read through your notes, worksheets, bell ringers, and your SC State Standards for Biology. Note cards are an excellent way to study vocabulary!!!

To help you complete this review activity and to help you study for your test, you should read SC State Standards B 2.1-2.7.

## CELL STRUCTURE AND FUNCTION

SC State Standard B 2.1

- List the three parts of the cell theory: 1. \_\_\_\_\_  
2. \_\_\_\_\_  
3. \_\_\_\_\_

Fill in the blank:

A \_\_\_\_\_ (4.) organism is composed of one cell and all of life's activities occur within that cell. A \_\_\_\_\_ (5.) organism is composed of more than one cell. The ability of cells to divide to form new cells is the basis for all \_\_\_\_\_ (6.) and for the \_\_\_\_\_ (7.) and repair of all multicellular organisms.

SC State Standard B 2.2 & 2.3

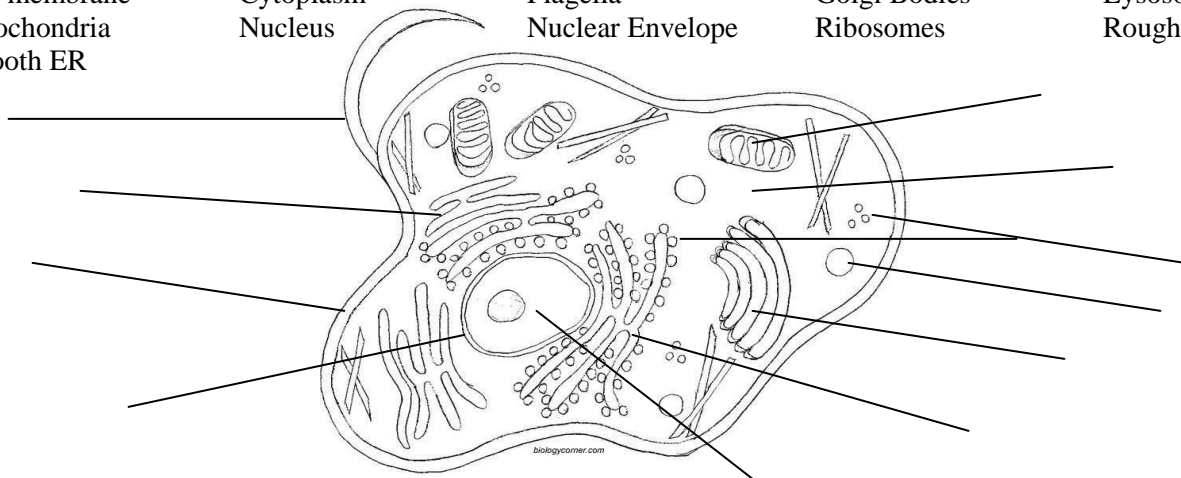
**Cell Diagrams – use the diagrams below to complete the following questions**

8. What type of cell is pictured below (prokaryotic or eukaryotic / plant or animal)? \_\_\_\_\_ , \_\_\_\_\_

9. How can you tell? \_\_\_\_\_

### 10. Label the following organelles:

Cell membrane	Cytoplasm	Flagella	Golgi Bodies	Lysosomes
Mitochondria	Nucleus	Nuclear Envelope	Ribosomes	Rough ER
Smooth ER				



11. What type of cell is pictured below (prokaryotic or eukaryotic / plant or animal)? \_\_\_\_\_ , \_\_\_\_\_

12. How can you tell? \_\_\_\_\_

**13. Label the following organelles:**

Cell membrane

Cell Wall

Chloroplast

Chromosomes

Cytoplasm

Golgi Bodies

Mitochondria

Nucleus

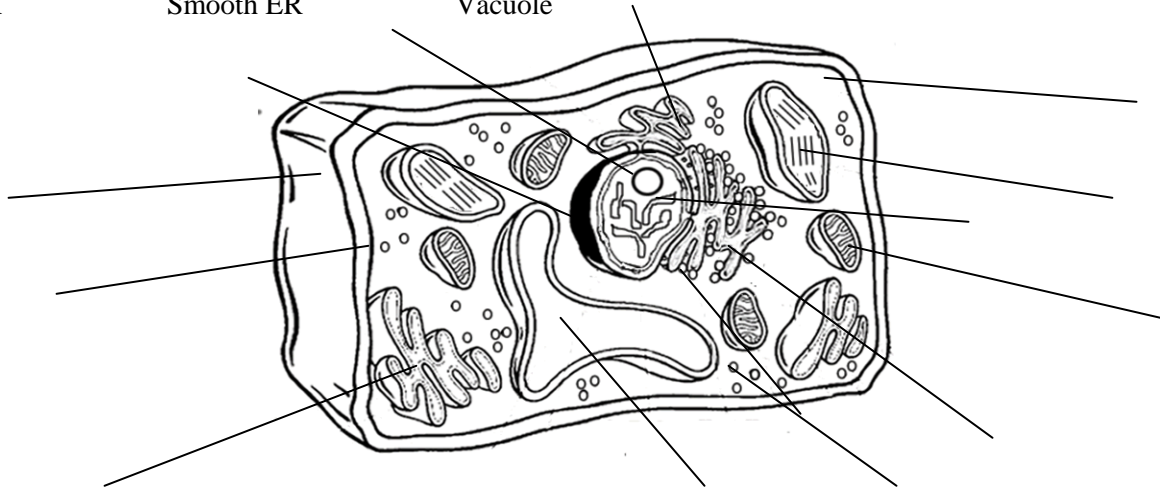
Nuclear Envelope

Ribosomes

Rough ER

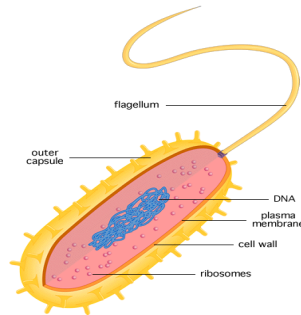
Smooth ER

Vacuole



14. What type of cell is pictured below (prokaryotic or eukaryotic / bacteria, plant, or animal)? \_\_\_\_\_

15. How can you tell? \_\_\_\_\_



**Match the following organelles to their correct description.**

- |                  |                 |                     |                 |
|------------------|-----------------|---------------------|-----------------|
| A. Cell Membrane | B. Cell Wall    | C. Chloroplast      | D. Cilia        |
| E. Cytoplasm     | F. Eukaryotic   | G. Flagella         | H. Golgi Bodies |
| I. Lysosome      | J. Mitochondria | K. Nuclear Membrane | L. Nucleus      |
| M. Organelle     | N. Prokaryotic  | O. Ribosomes        | P. Rough ER     |
| Q. Smooth ER     | R. Vacuole      | S. Vesicle          |                 |

- \_\_\_\_ 16. Contain digestive enzymes and break things down like wastes within the cell
- \_\_\_\_ 17. Supply/release energy for the cell
- \_\_\_\_ 18. Complex extensive network that transports materials through the cell -are not studded with ribosomes and help to process and transport lipids and carbs
- \_\_\_\_ 19. Sacs that separate materials from the rest of the cytoplasm - transport substances within the cell
- \_\_\_\_ 20. Tough outer wall of most plant cells and some prokaryotic cells (often made of cellulose)
- \_\_\_\_ 21. Stores genetic information/DNA
- \_\_\_\_ 22. Where photosynthesis occurs
- \_\_\_\_ 23. Protects the nucleus – controlling what enters and exits the nucleus
- \_\_\_\_ 24. Flexible membrane that controls what enters and exits the cell
- \_\_\_\_ 25. Produces proteins by joining amino acids – protein synthesis
- \_\_\_\_ 26. Complex extensive network that transports materials through the cell -studded with ribosomes and helps to process proteins
- \_\_\_\_ 27. Cells that contain nuclei, have membrane bound organelles, and are complex
- \_\_\_\_ 28. Short, hair-like projection of cell that aids in movement
- \_\_\_\_ 29. Long, whip-like projection of cell that aids in movement
- \_\_\_\_ 30. Cells that do NOT have nuclei, do NOT have membrane bound organelles, and are simple
- \_\_\_\_ 31. Collect, transfer, and distribute materials like proteins throughout the inside and outside of the cell
- \_\_\_\_ 32. Sacs for storage of salts, water, carbs, etc. (large and central for plants, small in animals)
- \_\_\_\_ 33. A cell structure that performs specialized functions within eukaryotic cells.
- \_\_\_\_ 34. Semi-fluid material inside of the cell containing the organelles and is bound by the cell membrane.



## Biology I: Unit 4 Cellular Transport

### Review for Unit Test

**Directions:** *You should use this as a guide to help you study for your test. You should also read through your notes, worksheets, bell ringers, and your SC State Standards for Biology. Note cards are an excellent way to study vocabulary!!!*

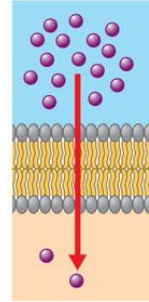
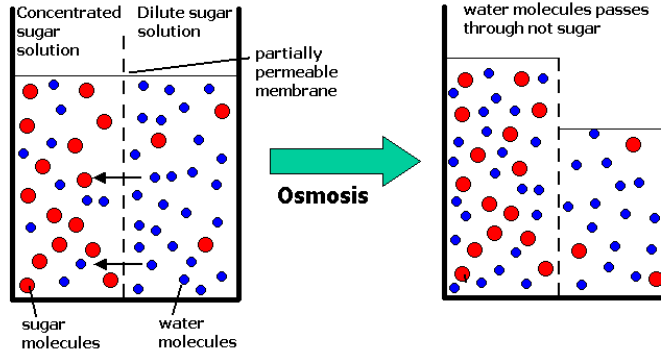
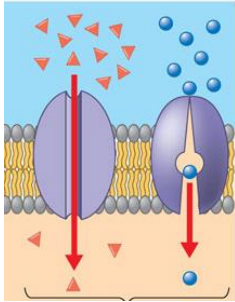
State Standard B 2.5

**Match the following words about cell transport to their correct descriptions.**

A. Active Transport	B. Concentration Gradient	C. Diffusion	D. Endocytosis	E. Exocytosis	F. Facilitated
Diffusion	G. Homeostasis	H. Hypertonic	I. Hypotonic	J. Isotonic	K. Lyse
L. Osmosis	M. Passive Transport	N. Semi-permeable	O. Transport Protein		

- \_\_\_\_ 41. Does not use energy to move materials across the membrane with the concentration gradient (high to low).
- \_\_\_\_ 42. Difference in concentrations.
- \_\_\_\_ 43. The spreading/movement of molecules across a cell membrane from high to low concentrations until equilibrium is reached.
- \_\_\_\_ 44. The diffusion of water across/through a semi-permeable membrane.
- \_\_\_\_ 45. Does use energy to move materials across the membrane against the concentration gradient (low to high).
- \_\_\_\_ 46. Some substances are able to pass through the membrane while other substances are not.
- \_\_\_\_ 47. Substances that are not able to pass directly through the membrane are able to enter the cell with the aid of transport proteins going with the concentration gradient from high to low so no energy is used.
- \_\_\_\_ 48. Solute concentrations are higher in the cell than outside of the cell. Water flows into the cell causing the cell to swell.
- \_\_\_\_ 49. Solute concentrations are higher outside of the cell than inside of the cell. Water flows out of the cell and the cell shrivels.
- \_\_\_\_ 50. The necessity of an organism to maintain constant or stable conditions.
- \_\_\_\_ 51. Type of protein embedded in the cell membrane that can be used to move materials through the membrane.
- \_\_\_\_ 52. Solute concentrations inside of the cell are equal to solute concentrations outside of the cell.
- \_\_\_\_ 53. Taking nutrients into the cell against the concentration gradient with the aid of vesicles (against concentration gradient).
- \_\_\_\_ 54. Releasing large amounts of materials out of the cell like wastes with the aid of vesicles (against concentration gradient).
- \_\_\_\_ 55. Animal cells in hypotonic solutions can burst or \_\_\_\_\_.

Identify the following as osmosis, diffusion, or facilitated diffusion.



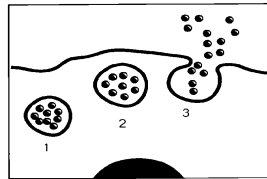
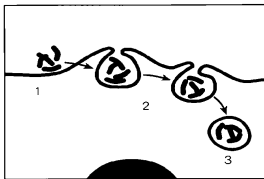
56. \_\_\_\_\_

57. \_\_\_\_\_

58. \_\_\_\_\_

59. The diagrams above are types of *passive* or *active* transport (circle the answer).

Identify the following as exocytosis or endocytosis.



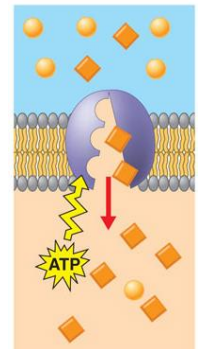
60. \_\_\_\_\_

61. \_\_\_\_\_

62. The diagrams above are types of *passive* or *active* transport (circle the answer).

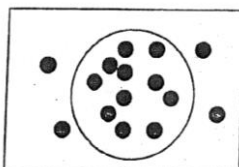
63. The diagram to the right is an example of *passive* or *active transport* (circle the answer).

64. You can tell because \_\_\_\_\_.

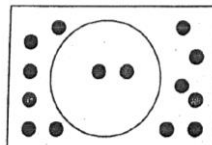


**Draw an arrow** to indicate the direction that water would move in or out of the cells in the diagrams below. Then, in the blanks above each diagram decide whether or not the cell will **swell, shrivel, or stay the same**.

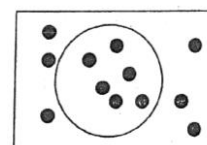
65. \_\_\_\_\_



66. \_\_\_\_\_



67. \_\_\_\_\_



Name: \_\_\_\_\_ Test Date: \_\_\_\_\_ Block: \_\_\_\_\_

## Biology I: Unit 5 Cell Division

### Review for Unit Test

**Directions:** *You should use this as a guide to help you study for your test. You should also read through your notes, worksheets, bell ringers, and your SC State Standards for Biology. Note cards are an excellent way to study vocabulary!!!*

## CELL DIVISION – Chapter 5

State Standard B 2.6

**Label the diagram of the cell cycle below using the following terms.**

A. Gap 1

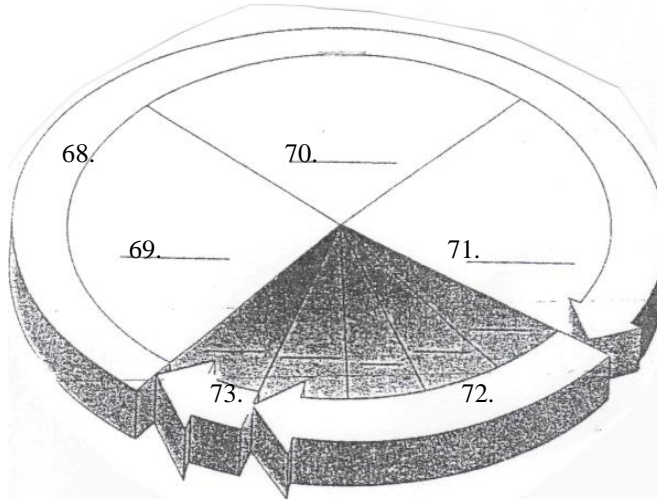
B. Gap 2

C. Cytokinesis

D. Interphase

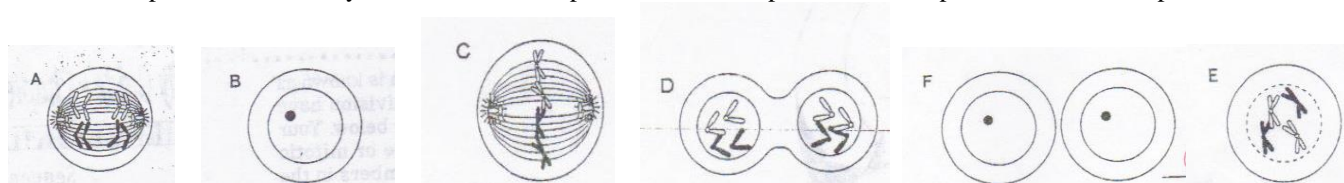
E. Mitosis

F. S-Phase



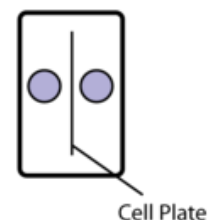
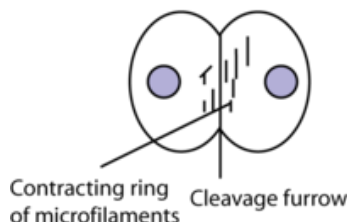
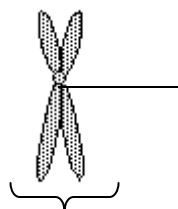
**74. Label the phases of the cell cycle/mitosis below and place them in number order (1-6).**

A. Anaphase    B. Cytokinesis    C. Interphase    D. Metaphase    E. Prophase    F. Telophase



\_\_\_\_\_ & # \_\_\_\_\_ & # \_\_\_\_\_ & # \_\_\_\_\_ & # \_\_\_\_\_ & # \_\_\_\_\_ & #

**75. Label the centromere and sister chromatids in the following diagram. Identify each diagram as either plant or animal cell cytokinesis:**



76. \_\_\_\_\_

77. \_\_\_\_\_

**Match the following descriptions of the phases of the cell cycle.**

A. Anaphase    B. Cytokinesis    C. Gap 1    D. Gap 2    E. Interphase    F. Metaphase    G. Mitosis    H. Prophase    I. Telophase    J. S-Phase

- \_\_\_\_ 78. Division of the cytoplasm.  
 \_\_\_\_ 79. Chromatids move to the center or middle of the cell.  
 \_\_\_\_ 80. Longest phase of the cell cycle – cell growth, protein synthesis, DNA is copied, and preparation for mitosis takes place.  
 \_\_\_\_ 81. Division of the nucleus.  
 \_\_\_\_ 82. DNA is copied.  
 \_\_\_\_ 83. Two new nuclei form, spindle fibers break down.  
 \_\_\_\_ 84. Cell grows and prepares for cell division.  
 \_\_\_\_ 85. The sister chromatids are separated from each other as the spindle fibers shorten and move toward the poles.  
 \_\_\_\_ 86. The chromosomes become visible, the nucleus breaks down, and spindle fibers appear.

*State Standard B 2.7*

87. What is a checkpoint in the cell cycle? \_\_\_\_\_

88. Explain the difference between internal and external signals. \_\_\_\_\_

89. Give an example of how cells respond to physical signals in their environment. \_\_\_\_\_

90. What is cancer? \_\_\_\_\_

91. Explain the difference between malignant and benign tumors. \_\_\_\_\_

*State Standard B 2.4*

35. What is cell differentiation? \_\_\_\_\_

36. Can the process of cell differentiation be reversed? \_\_\_\_\_

37. Put the following in order from least inclusive (1) to most inclusive (4):

\_\_\_\_\_ Organ System    \_\_\_\_\_ Tissue    \_\_\_\_\_ Cells    \_\_\_\_\_ Organ

38. What are stem cells? \_\_\_\_\_

39. Explain the difference between adult and embryonic stem cells. \_\_\_\_\_

40. Do all cells contain the same DNA? \_\_\_\_\_