

Name: Key

Period: \_\_\_\_\_

**Cell Processes Review**  
Cell Transport, Photosynthesis, Respiration, Cell Cycle

**PreConcept Mastery**

**Prefixes**

Fill in the meaning of the prefixes below:

Prefix	Meaning
Chloro-	green
Pro-	before
Endo-	within / in / inward
Exo-	outside / external

**Cell Transport**

Match the descriptions with the following types of membrane transport:

Active Transport	Passive Transport
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1. Molecules travel from high to low concentration
2. Requires ATP/energy
3. Osmosis is an example
4. Does not require ATP/energy
5. Molecules travel from low to high concentration

passive  
active  
passive  
passive  
active

Fill in the blanks below. Use the following terms:

Hypotonic	Solvent	Isotonic	Hypertonic
Solute	Water	Salt	Sugar

6. Solutions are made of two parts, the solute and the solvent.

7. In a saltwater solution, the water is the solvent and the salt is the solute.

8. A isotonic solution occurs when there is an equal concentration of solutes inside and outside of a membrane.

9. A hypotonic solution occurs when there is a lower concentration of solutes outside of a membrane, and a higher concentration of solutes inside of a membrane.

10. A hypertonic solution occurs when there is a higher concentration of solutes outside of a membrane, and a lower concentration of solutes inside of a membrane.



Answer the following questions based on the statements below:

11. The paramecium is a fresh water microorganism. The salt content of its cytoplasm is greater than that of the surrounding environment. Does water tend to enter or leave the paramecium? Is this process of passive or active transport?

- hypotonic environment  
- water enters (passive)

12. Where does the energy for active transport come from?

ATP

13. This movement of oxygen molecules from an area of higher concentration to an area of lower concentration is known as osmosis

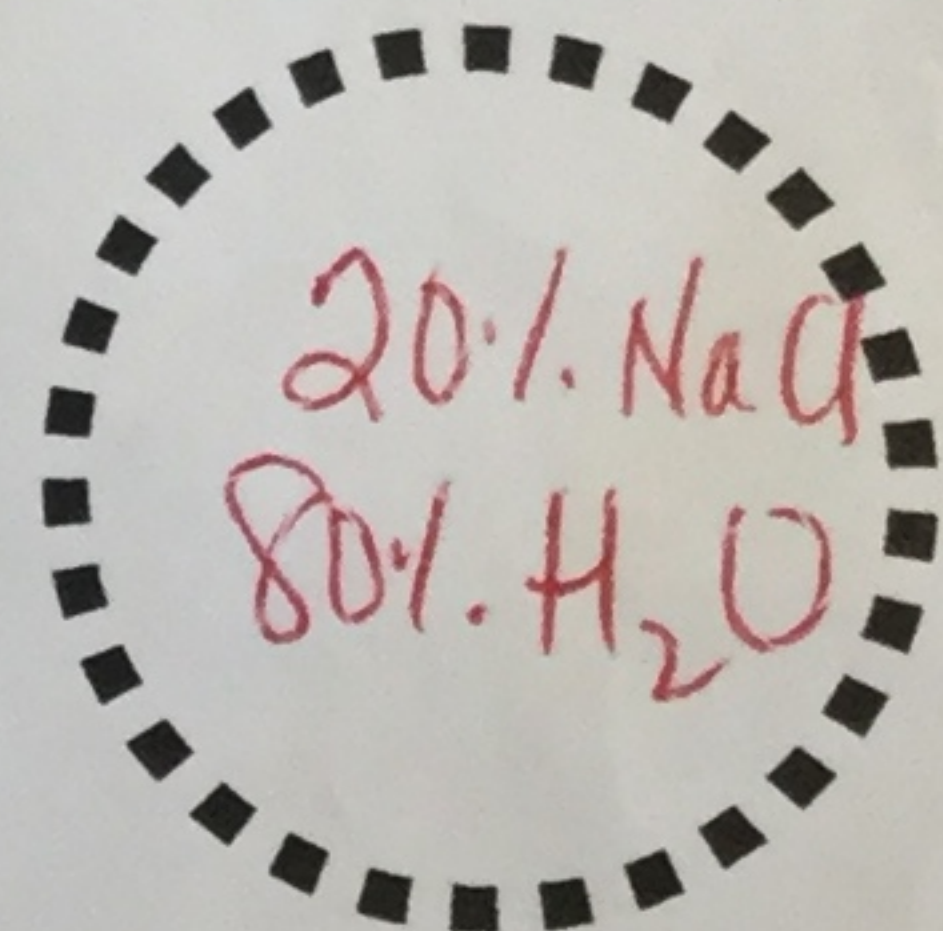
- a. diffusion
- b. osmosis
- c. respiration
- d. photosynthesis

Answer the following questions below:

Draw a picture to help you.

14. A cell has 20% salt and 80% water is in a solution that has 10% salt and 90% water.

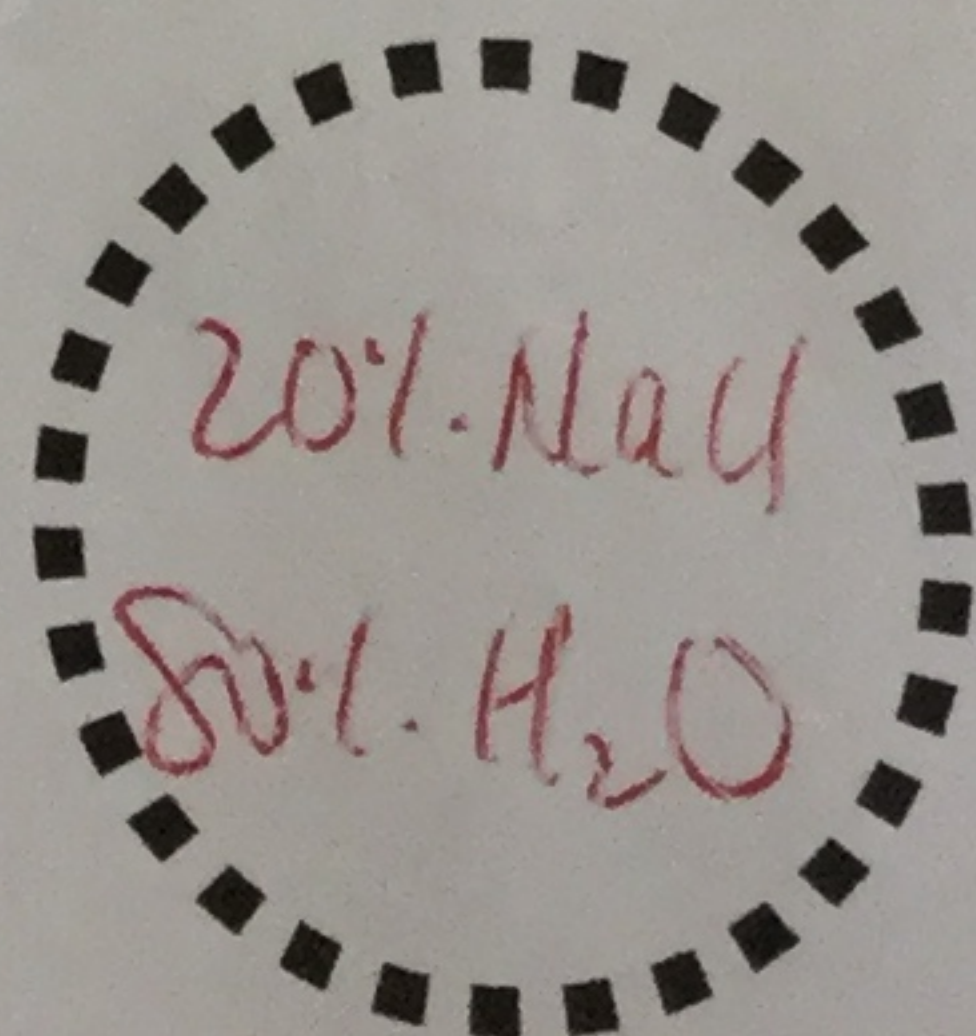
- a. In what type of solution is the cell? hypotonic
- b. Where will water move? into cell
- c. What will happen to the cell? swell



10% NaCl  
90% H<sub>2</sub>O

15. A cell has 20% salt and 80% water is in a solution that has 30% salt and 70% water.

- a. In what type of solution is the cell? hypertonic
- b. Where will water move? out of cell
- c. What will happen to the cell? shrivel



30% NaCl  
70% H<sub>2</sub>O



## Cell Energy: Photosynthesis and Respiration

### Multiple Choice:

16. Using a microscope, a student observes a small, green organelle in a plant cell. Which energy transformation most likely occurs first within the observed organelle?

- a. light to chemical
- b. heat to electrical
- c. chemical to chemical

chloroplast

17. What are two names for organisms that make their own food?

autotrophs                      producers

18. Name two examples of species that make their own food:

1. plants, trees                      venus fly traps
2. blue-green algae

19. What cell process(es) do organisms that make their own food use to utilize energy?

photosynthesis                      cellular respiration

20. What are two names for organisms that must eat other organisms for food?

heterotrophs                      consumers

21. Name two examples of species that must eat other organisms for food:

1. humans
2. dog/cat/bird

22. What cell process(es) do organisms that must eat other organisms for food use to utilize energy?

cellular respiration

List three ways plants' ability to photosynthesize benefits animals.

1. produce O<sub>2</sub>
2. produce food
3. take in CO<sub>2</sub> from atmosphere



Questions 24-29 Complete the following table.

	Photosynthesis	Cellular Respiration
Reactants	$\text{CO}_2$ $\text{H}_2\text{O}$ light energy	$\text{C}_6\text{H}_{12}\text{O}_6$ $\text{O}_2$
Products	$\text{C}_6\text{H}_{12}\text{O}_6$ $\text{O}_2$	$\text{CO}_2$ $\text{H}_2\text{O}$ energy (ATP)
Organelle	chloroplast	mitochondria

Fill in the blank to complete each statement.

20. Pain and weakness in human muscles cells are often the result of the buildup of lactic acid.

21. Plant and animal cells release energy from food as a result of the process of cellular respiration.

22. The energy-releasing process that does not require oxygen is fermentation.

23. Mitochondria are the powerhouses of the cell because they are the organelles in which the second stage of cellular respiration takes place.

The products of photosynthesis are the reactants of cellular respiration.



## Cell Cycle: Mitosis

True or False:

35. Most of the cell's life cycle is spent in *telophase*. *False*
36. The daughter cells produced at the end of mitosis are *identical* to the parent cell. *True*
37. When cells continue to grow unchecked *cancer* may develop as a result. *True*
38. *Interphase* is not a stage of mitosis. *True*
39. Cytokinesis is important because it *divides the cytoplasm and organelles*. *True*

40-45. List in order the 6 phases of the cell cycle:

- 1st: Interphase
- 2nd: Prophase
- 3rd: Metaphase
- 4th: Anaphase
- 5th: Telophase
- 6th: ~~Interphase~~ Cytokinesis

How many daughter cells are produced from the parent cell after undergoing the cell cycle?

*2*