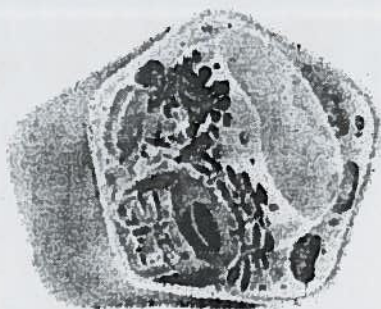


Key



Cells

Match the words in the first column to the best available answer in the second column. When you are finished, sketch a picture of a cell on the back of your puzzle and label **seven** of the organelles listed below.

- | | |
|---------------------------------|---|
| <u>6</u> cell theory | 1) cell component that carries on a specific job for the cell |
| <u>17</u> Robert Hooke | 2) packages materials such as proteins made by the cell |
| <u>10</u> cell | 3) make up the membrane of a cell |
| <u>1</u> organelles | 4) control center of the cell where DNA is found |
| <u>18</u> prokaryote | 5) where proteins are made in all cells |
| <u>7</u> eukaryote | 6) states all living things are made of cells |
| <u>3</u> phospholipids | 7) cells with a nucleus and membrane-bound organelles |
| <u>11</u> mitochondria | 8) structure around the outside of the cell membrane in plants for support and protection |
| <u>2</u> ribosome | 9) made of microfilaments and microtubules in the cytoplasm for support nucleolus |
| <u>15</u> endoplasmic reticulum | 10) smallest part of an organism that can carry on all life processes |
| <u>12</u> golgi | 11) powerhouses of a cell where ATP (energy) is generated |
| <u>5/10</u> lysosome | 12) store enzymes and waste products in a cell |

14 cilia

4 nucleus

8 cell wall

13 vacuole

16 chloroplast

9 cytoskeleton

~~13~~) digests materials within the cell

~~14~~) short hairlike structures around the outside of a cell for movement

~~15~~) system of canals inside a cell

~~16~~) where photosynthesis occurs

~~17~~) first to view cork cells with a simple microscope

~~18~~) cells lacking a nucleus and membrane-bound organelles



CELL TRANSPORT TEST REVIEW

1. Describe the relationship of dissolved materials inside and outside a cell in isotonic, hypotonic, and hypertonic solutions.

Ans. In an isotonic environment, the concentration of dissolved materials outside and inside the cell are the same. There is no net movement of water into or out of the cell.

In a hypotonic environment, the concentration of dissolved materials inside the cell is greater than outside the cell (i.e., the conc. of water molecules is greater outside the cell than inside.). There is a net movement of water into the cell

In a hypertonic environment, the concentration of dissolved materials inside the cell is less than outside the cell (i.e., the conc. of water molecules is greater inside the cell than outside.). There is a net movement of water out of the cell

2. Why does a plant cell not burst when placed in a hypotonic solution?

Ans. Although the contents of a plant cell swell in a hypotonic environment, the cell won't burst (cytolysis) because they are contained by the cell wall.

3. What organelle maintains homeostasis in a protist when it is in a hypotonic solution?

Ans. The contractile vacuole uses active transport to "pump" excess water out of the cell.

4. In terms of osmosis, why do plants sometimes wilt?

Ans. When water moves out of a plant cell, the resulting drop in turgor pressure in the central vacuole causes the plant to wilt.

5. Explain why putting salt on a slug will kill the animal.

Ans. Salt represents a hypertonic environment to the slug causing water to exit its cells resulting in dehydration and eventually death.

6. What is plasmolysis?

Ans. Plasmolysis is the shrinking of cytoplasm by osmosis when a cell experiences a hypertonic environment.

7. Explain what may happen to body cells if a medicine that is not isotonic is injected.

Ans. If the medicine is hypertonic, the cell will shrink (plasmolysis). If the medicine is hypotonic, the cell will swell and could rupture (cytolysis) in an extreme situation.

15. If you are shipwrecked on a raft with no fresh water, will drinking salt water help you out? Explain.

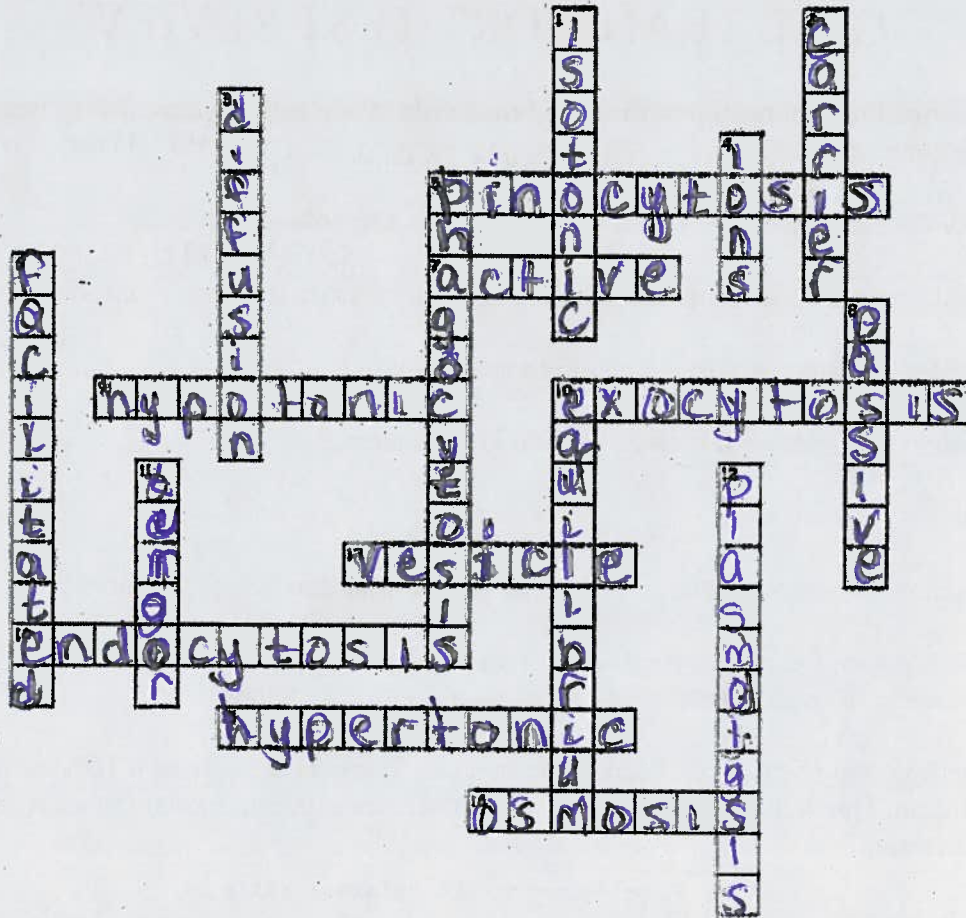
Ans. No, salt water is hypertonic and would cause dehydration (at a greater rate than thirst alone).

16. How does the curing of meat with salt prevent spoilage by bacteria?

Ans. As with question 12, when bacteria come in contact with salted meat cells, the salt represents a hypertonic environment to the bacteria cells causing them to dehydrate and die.

18. What are three functions of membrane proteins?

Ans. The primary function of membrane proteins is transport (transport proteins, carrier proteins and canal proteins.). Some proteins are bound to sugars (glycoproteins) and play a role in cell identification. Others are bound to enzymes and facilitate the breakdown of nutrients.



Across

- ~~5.~~ Taking in water droplets.
- ~~7.~~ Transport that requires energy.
- ~~9.~~ Environment that results in net movement of water into cell.
- ~~10.~~ Form of active transport out of cell.
- ~~13.~~ Small sac formed by plasma membrane.
- 14. Form of active transport into cell.
- ~~15.~~ Environment that results in net movement of water out of cell.
- ~~16.~~ Diffusion of water.

Down

- ~~1.~~ Concentration of water inside cell = outside cell.
- ~~2.~~ Transport proteins that change shape.
- ~~3.~~ Movement of particles from areas of high to low concentration.
- ~~4.~~ Simple type of transport proteins.
- ~~5.~~ Amoeba feeding technique.
- ~~6.~~ Protein aided passive diffusion.
- ~~8.~~ Transport that does not require energy.
- ~~10.~~ No net movement of particles.
- ~~11.~~ Pressure formed in vacuoles of plant cells.
- 12. Results from dehydration of plant cells.

CELL ENERGY TEST REVIEW

BIO 11

MULTIPLE CHOICE: Select the lettered choice that best fits each question or statement. In each case, there is only one correct choice.

1. Which statement about photosynthesis is correct?
 - a. occurs only in the dark
 - b. will not occur if respiration is taking place
 - c. some stages are interrupted by darkness
 - d. requires no coenzyme similar to NADP in respiration

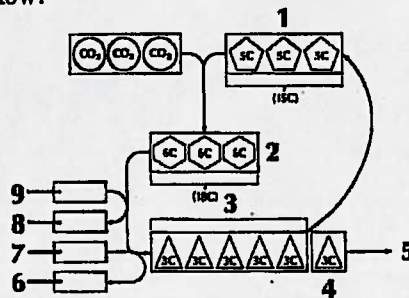
2. What happens during the dark reactions of photosynthesis?
 - a. oxidation of water
 - b. formation of ATP
 - c. reduction of oxygen
 - d. conversion of carbon dioxide into an organic molecule

3. Leaves appear to be green because they
 - a. absorb only green wavelengths of light
 - b. reflect green light while absorbing other wavelengths
 - c. reradiate green light as heat
 - d. reflect all wavelengths of light

4. In addition to chlorophyll, what other pigments do leaves contain?
 - a. phototrophs
 - c. carotenes and xanthophylls
 - b. green proteins
 - d. no other pigments

5. What is the yellow pigment that captures the light energy not absorbed by chlorophyll during photosynthesis?
 - a. chlorophyll a
 - b. Type II chlorophyll
 - c. carotene
 - d. xanthophyll

Questions 6—8 refer to the figure below.



- Skip these three*
6. The reactions shown above comprise the
 - a. light reaction
 - b. Calvin cycle
 - c. Krebs cycle
 - d. glycolysis

 7. The energy to drive the reactions is provided by
 - a. 2 and 3
 - b. 3 and 4
 - c. 6 and 8
 - d. 7 and 9

 8. Which of the following represent PGAL and glucose, respectively?
 - a. 1 and 5
 - b. 4 and 5
 - c. 8 and 6
 - d. 2 and 7

 9. The two reactions used in photosynthesis are known as the
 - a. Calvin and Krebs cycles
 - c. light reactions and Calvin cycle
 - b. glycolysis and Calvin cycle
 - d. glycolysis and Krebs cycle