

Photosynthesis Review

Write (T) if the statement is true or (F) if the statement is false.

T 1. All life needs energy.

F 2. $C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O$ is the chemical reaction of photosynthesis.
cellular respiration

T 3. Glucose is a carbohydrate that stores chemical energy in a concentrated and stable form.

T 4. Many scientists consider photosynthesis to be the most important life process on Earth.

T 5. Only autotrophs can perform photosynthesis.

T 6. Only four types of organisms — plants, algae, fungi and some bacteria — can make food through photosynthesis.

F 7. ATP is the "energy currency" of the cell, so it makes sense that a molecule of ATP contains much more chemical energy than a molecule of glucose.
ATP contains much less energy than glucose

T 8. Whereas photosynthesis occurs in only some organisms, cellular respiration occurs in the cells of all living things.

F 9. Like matter, energy is also recycled by living organisms.
energy is never recycled!

T 10. Heterotrophs cannot make their own food.

F 11. Because you are able to cook your own food in the microwave oven, you are a producer.

T 12. As mushrooms are fungi, they are heterotrophs.

T 13. A food chain shows how energy and matter flow from consumers to producers.

~~T 14. Photosynthetic animals are autotrophs.~~

T 15. Autotrophs are producers.

T 16. Photosynthesis provides almost all of the energy used by living things on Earth.

T 17. Earth's oxygen comes from photosynthesis.

F 18. All cells have chloroplasts. *→ only plant cells!*

T 19. Photons of sunlight can excite and energize electrons.

F 20. Like photosynthesis, chemosynthesis also relies on sunlight.
→ uses chemicals!

F 21. Both stages of photosynthesis need sunlight to proceed.
→ only the light reactions need light

Cell Transport Review

Write (T) if the statement is true or (F) if the statement is false.

- F 1. Passive transport needs energy.
- T 2. Active transport needs energy.
- T 3. Carrier proteins change shape when they transport substances.
- T 4. Diffusion does not require any help from other molecules.
- F 5. Facilitated diffusion does not require any help from other molecules.
- F 6. Endocytosis removes large molecules from the cell.
- F 7. In diffusion, substances move from an area of lower concentration to an area of higher concentration.
- F 8. The sodium-potassium pump is a type of channel protein.
- T 9. Ions can easily flow through a carrier protein. *→ carrier protein.*
- ~~_____~~ 10. ~~Diffusion is the osmosis of water.~~
- T 11. Endocytosis and exocytosis are types of vesicle transport.
- T 12. Channel proteins form small "holes" in the plasma membrane.
- T 13. Transport of substances across the cell membrane helps maintain homeostasis by keeping the cell's conditions within normal ranges.
- T 14. Channel proteins and carrier proteins are both transport proteins.
- T 15. The plasma membrane controls what enters and leaves the cell.

Fill in the blank with the appropriate term.

1. By moving substances into and out of cells, cell transport, the process of keeping stable conditions inside a cell, is maintained.
2. A carrier protein changes shape as it carries ions or molecules across the membrane.
3. Exocytosis is the type of cell/active transport that moves a substance out of the cell.
4. passive transport is movement across the plasma membrane that does not require an input of energy.
5. The sodium-potassium pump is involved in the active-transport of ions.
6. Facilitated diffusion needs the help of transport proteins
7. Concentration refers to the number of particles of a substance per unit of volume.
8. endocytosis is the type of vesicle transport that moves a substance into the cell.
9. Energy for active transport is supplied by molecules of ATP.
10. osmosis is the diffusion of water.
11. During active transport, a substance is moving from an area of low concentration to an area of high concentration.

(Key)

Quarter 3 Review

Cells

- 1) What is the difference between prokaryotes and eukaryotes?
 Prokaryotes are small, less complex, and do not have a nucleus, while eukaryotes are large, complex, and do have a nucleus.
- 2) Are animal cells prokaryotic or eukaryotic? Do animal cells have a cell wall?
 Animal cells are eukaryotic. Animal cells do not have a cell wall.
- 3) Remember to review all of your vocabulary card for cells.



Lipids

- 1) What is the difference between a saturated fat and an unsaturated fat? Why is the unsaturated fat liquid at room temperature and the saturated fat not?
 Saturated fat does not have double bonds ~~not~~ in its chemical structure, and is a solid at room temp. Unsaturated fats have a double bond, which causes it to be a liquid at room temp.
- 2) List the 3 main kinds of lipids in the human body. Which kind is used for lipid storage?

- ① hormones
- ② Triglycerides → used for lipid storage
- ③ phospholipid bilayers

- 3) What is the name of the bond that connects lipids together?

~~ester~~ Ester bonds

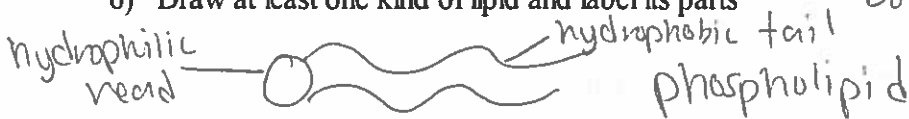
- 4) Why are triglycerides significant to the human body?

They store energy in the human body, which can be used as energy if needed.

- 5) What role do lipids play in the human body (at least 4)?

- ① Provide structure to cells, ② ~~provide~~ are the building block of hormones, ③ store energy ④ cushion organs w/ internal body fat

- 6) Draw at least one kind of lipid and label its parts



- 7) What are the two organic compounds that make up a fatty acid?

A chain of hydrogen; carbon atoms, and a carboxyl group.

Carbohydrates

- 1) What are carbohydrates building blocks?

Glucose molecules!

3) What enzymes break down proteins?

Petidase, pepsin!

4) What enzymes break down lipids?

Lipase!

5) What happens in the stomach?

Chemical and mechanical digestion. Proteins are digested by pepsin -

6) What role do the liver and pancreas play in digestion?

The liver and pancreas secrete important enzymes used in digestion.

7) Where does most of the absorption of nutrients take place in the body?

The small intestine!