

Name: \_\_\_\_\_

- On hot, dry days, guard cells often close microscopic openings in plant leaves, conserving water. This is an example of
- A) finite resources acting as selecting agents for evolution  
 B) environmental factors causing gene mutation in plants  
 C) a feedback mechanism for maintaining homeostasis  
 D) differentiation in plants as a result of stimuli
- 2) Plant cells can synthesize energy-rich organic molecules, and later break them down to extract that energy for performing life processes. These activities require direct interaction between the
- A) chloroplasts and vacuoles  
 B) cell walls and ribosomes  
 C) chloroplasts and mitochondria  
 D) ribosomes and mitochondria
- 3) It is recommended that people at risk for serious flu complications be vaccinated so that their bodies will produce
- A) antibodies against the flu virus  
 B) antigens to fight the flu virus  
 C) toxins to ~~fight the~~ infection caused by the flu virus  
 D) antibiotics to reduce symptoms caused by the flu virus
- 4) Why is a mushroom considered a heterotroph?
- A) It manufactures its own food.  
 B) It transforms light energy into chemical energy.  
 C) It divides by mitosis.  
 D) It obtains nutrients from its environment.
- 5) Which one of the following phrases is an example of autotrophic nutrition?
- A) a mushroom digesting a dead log  
 B) an apple tree making its own food  
 C) a cow eating grass in a field  
 D) a tapeworm feeding in the body of a dog
- 6) Some bloodsucking insects insert their mouthparts directly into a blood vessel and withdraw blood. Other bloodsucking insects have mouthparts that cut through the skin and blood vessels and produce a small pool of blood from which they feed. *Both* mouthpart types are specialized for
- A) heterotrophic nutrition  
 B) autotrophic nutrition  
 C) excretion  
 D) regulation
- 7) Maple trees and tulips are classified as autotrophs because they *both* \_\_\_\_\_
- A) are able to obtain complex organic materials from the environment  
 B) produce carbon dioxide and water as metabolic wastes  
 C) produce gametes by the process of mitosis  
 D) are able to synthesize organic molecules from inorganic raw materials
- 8) During the process of photosynthesis, energy from the Sun is converted into
- A) enzymes used to produce organic molecules  
 B) enzymes used to produce inorganic molecules  
 C) chemical energy in the bonds of organic molecules  
 D) chemical energy in the bonds of inorganic molecules
- 9) The temporary storage of energy in ATP molecules is part of which process?
- A) cellular respiration  
 B) DNA replication  
 C) protein synthesis  
 D) cell division
- 10) Identify the specific leaf structures that regulate the opening and closing of stomates.



Name: \_\_\_\_\_

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

**Homework # 3.3**  
**CELLULAR RESPIRATION (25 points)**

1. Describe the process of **RESPIRATION**.

\_\_\_\_\_

\_\_\_\_\_

2. Name the **organelle** for **Respiration**. \_\_\_\_\_

3. Draw a small **mitochondrion**.

4. Draw a stoma, label it. Draw guard cells, label them. Then, label what gas goes into the stoma and label the 2 gases that exit the stoma. (5 points)

4. What are the 2 raw materials of Respiration?

a. \_\_\_\_\_ (sugar)

b. \_\_\_\_\_ (gas)

5. What are the products of Respiration?

a. \_\_\_\_\_ (gas)

b. \_\_\_\_\_ (energy rich molecule)

8. Differentiate **AEROBIC** and **ANAEROBIC** respiration. (2 points)

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\_\_\_\_\_

9. Predict what happens to muscle cells if anaerobic respiration occurs.

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\_\_\_\_\_

10. Differentiate **RESPIRATION** and **PHOTOSYNTHESIS**: (8 points)

	<b>Photosynthesis</b>	<b>Respiration</b>
<b>Organelle:</b>		
<b>Gas needed:</b>		
<b>Gas produced:</b>		
<b>Important Product:</b>		

11. How do **guard cells** maintain **homeostasis**? (2 points)

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