Biology Review Day 4: Unit 3 Cellular Energy, Ch 8 & 9

Answer your questions on your own paper! These are LONG answer questions!

1. How are cells, tissues, and organs organized into systems?
2. What are the essential reactants and products of photosynthesis?
3. What is the chemical reaction of photosynthesis?
4. What are the essential reactants and products of aerobic and anaerobic respiration?
5. What is the chemical reaction for cellular respiration?
6. How do cells obtain and transform the energy required for biological processes?
7. How are photosynthesis and cellular respiration related?
8. How do plant gain and use energy (include photosynthesis and cellular respiration)?

Cellular respiration and photosynthesis can be thought of as opposite processes. Energy flows in opposite directions in the two processes.

1. Complete the table using the words below. Some words may be used more than once. You will use more than one term in some of the spaces.

**carbon dioxide energy release mitochondria water**

|  |  |  |
| --- | --- | --- |
|  | **Photosynthesis** | **Cellular Respiration** |
| Function | ***energy capture*** |  |
| Location | ***chloroplasts*** |  |
| Reactants |  | ***glucose and oxygen*** |
| Products | ***oxygen and glucose*** |  |

**10.** Circle the correct answer. For which reaction is 6CO2 + 6H2O → C6H12O6 + 6O2 the correct equation?

cellular respiration photosynthesis

**11.**  What are the reactants of the photosynthesis reaction?

**A.**  chlorophyll and light **C.**  carbohydrates and oxygen

**B.**  carbon dioxide and water **D.**  high-energy electrons and air

**12.** What are the products of the photosynthesis reaction?

**A.**  chloroplasts and light **C.** oxygen and ATP

**B.**  proteins and lipids **D.** oxygen and sugars

**13.** Organisms, such as plants, that make their own food are called

**a.** autotrophs. **c.** thylakoids.

**b.** heterotrophs. **d.** pigments.

**14.** Photosynthesis uses sunlight to convert water and carbon dioxide into

**a.** oxygen and carbon.

**b.** high-energy sugars and proteins.

**c.** ATP and oxygen.

**d.** oxygen and high-energy sugars.

**15.** How do organisms get the energy they need?

**a.** by burning food molecules and releasing their energy as heat

**b.** by breathing oxygen into the lungs and combining it with carbon dioxide

**c.** by breaking down food molecules gradually and capturing their chemical energy

**d.** by using the sun’s energy to break down food molecules and form chemicals

**16.** Cellular respiration is called an aerobic process because it requires

**a.** light. **c.** oxygen.

**b.** exercise. **d.** glucose.

**17.** The products of photosynthesis are the

**a.** products of cellular respiration.

**b.** reactants of cellular respiration.

**c.** products of glycolysis.

**d.** reactants of fermentation.