

# Unit 3

# Study Guide

Name

Date

Period

Directions: There are 3 major sections for this unit. Fill in the following information below as a study guide for your unit 3 exam. You will receive 5 extra credit points on your test if you turn this in 100% completed on the day of the exam. Your responses need to be **close to the real answer** and **all questions must be answered** to receive credit.

## SECTION 1: PHOTOSYNTHESIS (LESSON 3.1, 3.2, AND 3.8)

You will need to know the following for this section: recognize the organisms that perform photosynthesis, know the organelle responsible for photosynthesis, describe the reactants and products of photosynthesis, know the stages of photosynthesis, identify the purpose of photosynthesis, know the difference between autotrophs and heterotrophs, the purpose of bromothymol blue and what the colors represent.

1. What is the difference between an autotroph and a heterotroph?
2. Which types of organisms perform photosynthesis?
3. Which organelle is responsible for this process?
4. What special pigment does the organelle in #3 contain?
5. Write the overall equation for photosynthesis. Identify the reactants and products in the equation.
6. Summarize the light and dark stages of photosynthesis (include where each occurs, what goes in, and what goes out).
7. Overall, what is the main purpose of photosynthesis?
8. Describe the purpose of a control.
9. What is bromothymol blue?
10. Why is bromothymol blue used and what do the colors indicate?

## SECTION 2: CELLULAR RESPIRATION (LESSONS 3.6 AND 3.8)

You will need to know the following concepts; the definitions of aerobic and anaerobic, know the names of each stage of cellular respiration, know the location of each stage, identify the reactants and products of each stage, determine the overall purpose of cellular respiration

1. Define aerobic.
2. Define anaerobic.

3. Summarize the first stage of cellular respiration. Include the location, the reactants and the products.
4. Summarize the second stage of cellular respiration. Include the location, the reactants and the products.
5. Summarize the third stage of cellular respiration. Include the location, the reactants and the products.
6. Overall, what is the purpose of cellular respiration?
7. Where is the energy stored in a molecule of glucose?
8. Explain why glucose is useful to organisms.
9. Do plants perform cellular respiration? Explain your answer.
10. Define calorimetry.

### **SECTION 3: ANAEROBIC RESPIRATION (LESSON 3.7 AND 3.8)**

You will need to know the following for this section; the reason organisms undergo anaerobic respiration, identify the 2 types of fermentation, and summarize the reactants and the products of each type of fermentation.

1. List 2 differences between aerobic and anaerobic respiration.
2. Why do organisms perform anaerobic respiration?
3. What are the two types of anaerobic respiration?
4. Summarize the reactants and products of each type of fermentation.