Test date: 3/8

BAT list – Regular Biology
Botany: Photosynthesis and Respiration:
Chapter 4

Name: KEY

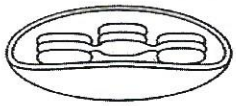
Vocabulary: Cell Energy				
Cellular respiration	ATP	Aerobic	Anaerobic	Chloroplast
Product	Reactant	Photosynthesis	Pigment	Chlorophyll

Chapter 4.2-4.3 Photosynthesis (pg 101-110)

1. Write out the balanced equation for photosynthesis. CIRCLE the products and BOX the reactants

Radiant Energy : $\boxed{6CO_2 + 6H_2O} \rightarrow (C_6H_{12}O_6 + 6O_2)$

2. What is this a diagram of?



Chloroplast

3. What is the pigment that absorbs light energy called?

Chlorophyll

4. Which product of photosynthesis is a starch?

Glucose

5. What are some ways the amount of starch (glucose) produced could be increased?

Increase Reactants - CO_2 or H_2O or Light

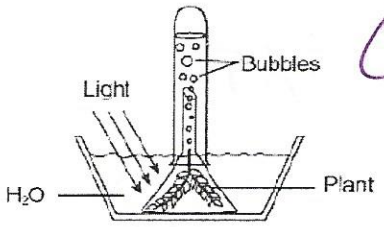
6. Why are athletes told to eat a meal high in carbohydrates before a big game?

Carbs are for Quick Energy

7. What factors affect the rate of photosynthesis and how (think about your labs)?

Reactants (CO_2 + Light) more reactants = more/Faster rate

8. Look at the experimental set up below. Based on this experiment and what you know about cell processes, what gas must the bubbles be made up of? Justify your response.



O_2 → Photosynthesis of Plant produces Oxygen

Chapter 4.4-4.6 Cell Respiration (pg 112-123)

9. Write out the balanced equation for cell respiration. CIRCLE the products and BOX the reactants

$\boxed{C_6H_{12}O_6 + 6O_2} \rightarrow (6CO_2 + 6H_2O + ATP)$

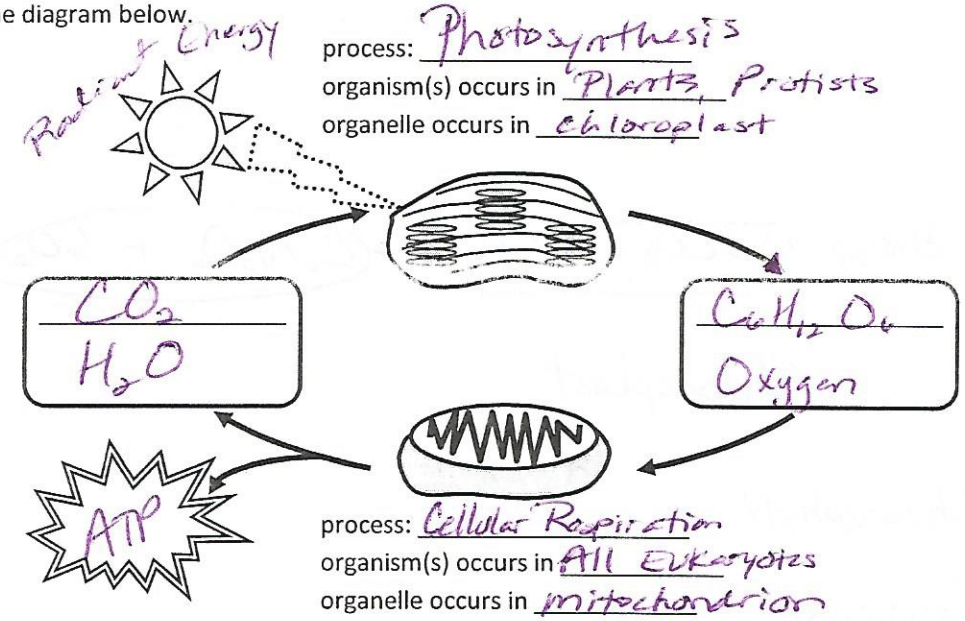
10. Identify the organelle that carries out cell respiration. What organisms cellular respirate?

Mitochondrion all organisms with nucleus - NOT bacteria

11. Explain how photosynthesis and cell respiration are dependent on each other.

The products of Photosynthesis are the reactants of cellular Respiration. The products of cellular respiration are the Reactants of photosynthesis.

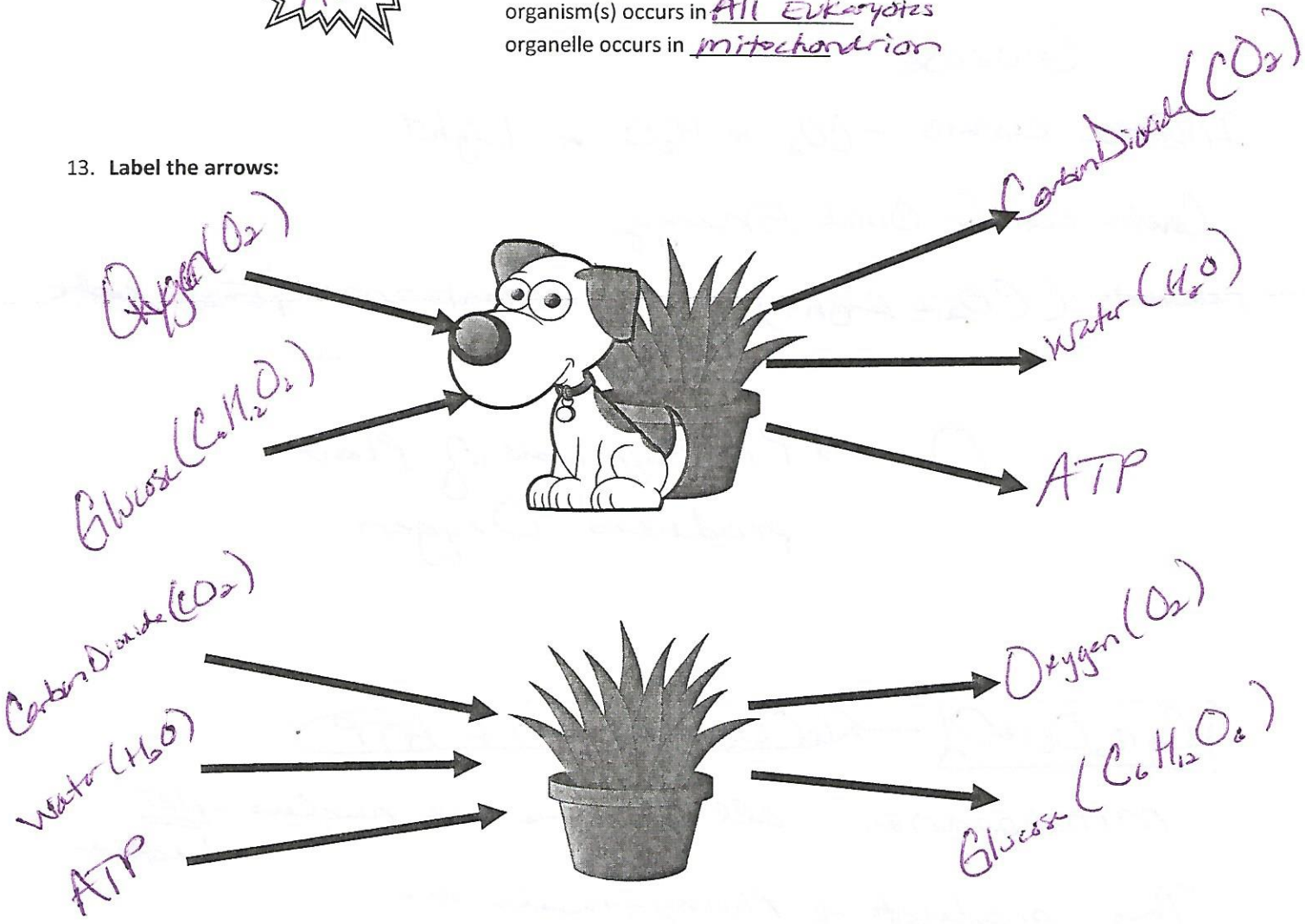
12. Complete the diagram below.



process: Photosynthesis
organism(s) occurs in Plants, Protists
organelle occurs in chloroplast

process: Cellular Respiration
organism(s) occurs in All Eukaryotes
organelle occurs in mitochondrion

13. **Label the arrows:**



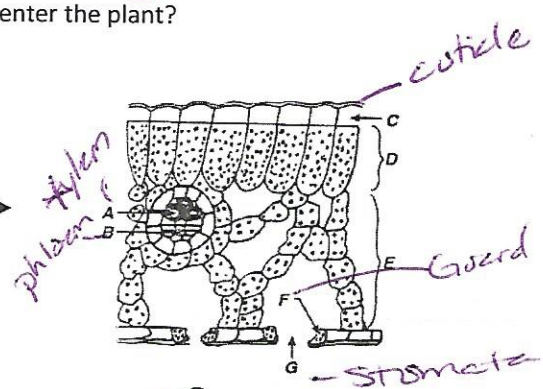
Botany: Plant Structures and Functions

Chapters 20-22

Botany Unit Vocabulary						
Phloem	Xylem	Vascular bundle	Stoma	Cuticle	Pollen	Thigmotropism
Stamen	Filament	Anther	Pistil	Stigma	Style	Hydrotropism
Root	Stem	Leaf	Guard cell	Tropism	Phototropism	Geo/Gravitropism

Ch 21 Plant Structure and Function (pg 618-633)

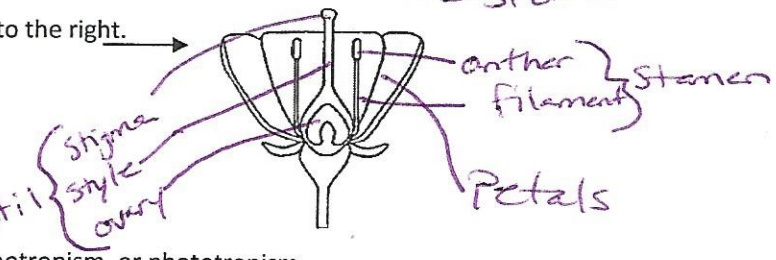
1. Identify the 3 major organs of a plant.
   Roots, Stems, Leaves
2. Xylem is used to primarily transport what substances in a plant? What direction are the materials transported in?
   Water up
3. Phloem is used to primarily transport what substances in a plant? What direction are the materials transported in?
   Food
4. What can xylem and phloem be compared to in animal systems?
   Arteries, Veins - Circulatory System
5. If a plant doesn't have a vascular system (no roots, stem, xylem or phloem) where could it store water?
   In thick Leaves
6. What is the function of the cuticle?
   Waxy coating that prevents/slows dehydration
7. What is the function of the guard cell and stomata?
   Guard cells open & close stomata Allowing O_2 & CO_2 in + out + H_2O out
8. How does the leaf get carbon dioxide for photosynthesis – where does it enter the plant?
   Through Stomata
9. Why do stoma typically close?
   To Retain (keep) water in
10. How can a plant slow dehydration?
    close stomata
11. Label structures A, B, F, and G of the leaf in this leaf cross section. →



12. Identify three major functions of roots.
    ① Absorb water ③ Support plant
    ② Store nutrients

Ch 22 Plant Growth, Reproduction, and Response (pg 640-659)

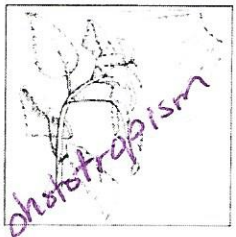
13. Label and identify the stamen, pistil and petals on the flower to the right. →

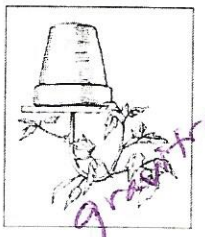


14. What two places does meiosis occur in the flower?
    Anther & Ovary
15. How does the sperm get to the ovules in the ovary?
    Pollen tube grows through style to ovary

16. Identify the images below as gravitropism (geotropism), thigmotropism, or phototropism.


thigmotropism


phototropism


gravitropism

17. What type of tropism causes a tree on the side of a hill to still grow upright rather than lean with the hill?
    gravitropism