Test date: _____ Name:_____

BAT list
Botany: Photosynthesis and Respiration:
Chapter 4

Vocabulary: Cell Energy				
Cellular respiration	ATP and ADP	Aerobic	Anaerobic	Glycolysis
Product	Reactant	Photosynthesis	Pigment	Chlorophyll
Thylakoid	Chloroplast	Stroma	Lactic acid	fermentation

Chapter 4.1 Chemical Energy and ATP (pg 98-100)

1. How are ATP and ADP related?

2. Explain how energy is stored in and obtained from ATP.

Chapter 4.2-4.3 Photosynthesis (pg 101-110)

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

4. Label the thylakoid and stroma in a chloroplast on the diagram below.

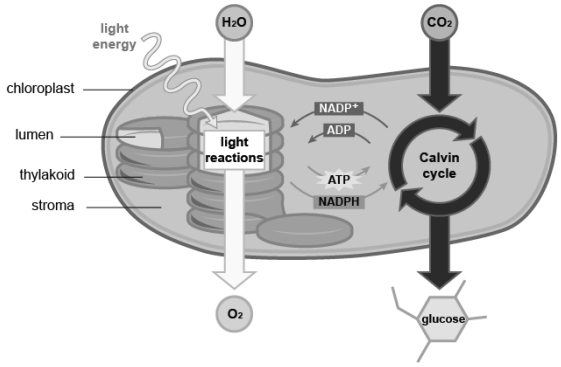
5. What is the pigment that absorbs light energy called?

6. Where does photosynthesis not occur in a plant and why?

7. Compare the light dependent and light independent reactions, include: location and general products/reactants

Light dependent:
_____ and light energy is used to produce _____ (a waste product) during the light reactions. This occurs in the _____ of the chloroplast.

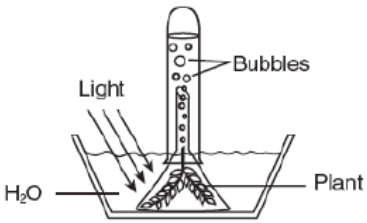
Light dependent **Light independent**



Light independent:
_____ is used to produce _____ (a stored product) during the Calvin Cycle. This occurs in the stroma of the _____.

8. What factors affect the rate of photosynthesis and how?

9. 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.



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

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

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

12. Compare lactic acid fermentation with alcoholic fermentation:

Lactic Acid Pathway:
GLUCOSE → pyruvic acid → lactic acid + 2 ATP

Alcohol Pathway:
GLUCOSE → pyruvic acid → CO_2 + Ethyl alcohol + 2 ATP

How many ATP molecules produced in each?

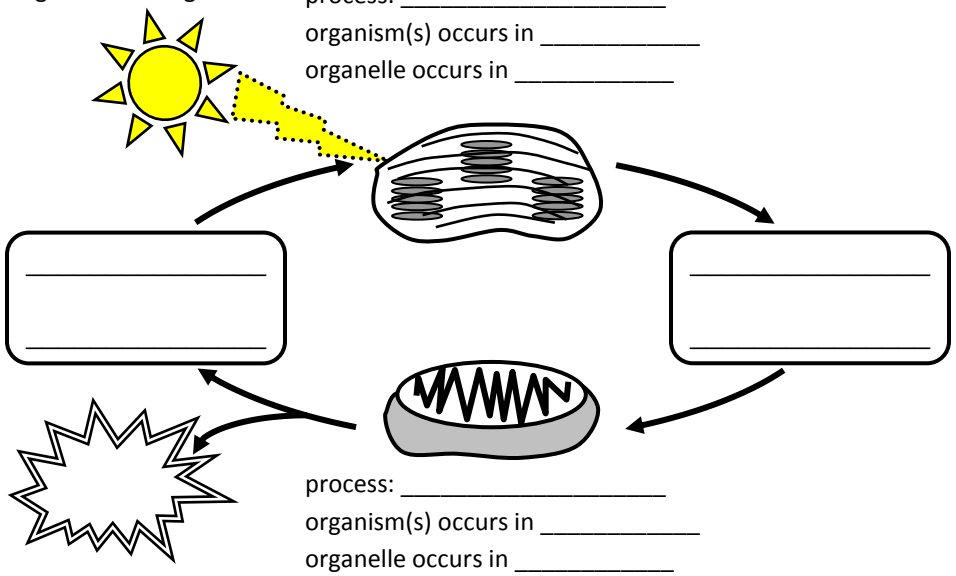
What gas is used in alcoholic fermentation?

Which uses glucose?

13. Explain why oxygen consumption can be used to measure the rate of respiration.

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

15. Complete the diagram to the right.



Botany: Plant Structures and Functions

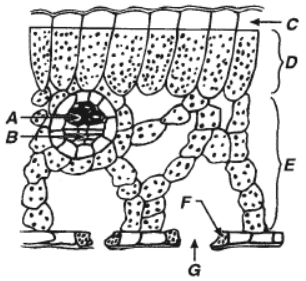
Chapters 20-22

Botany Unit Vocabulary

Phloem	Xylem	Vascular bundle	Stoma	Cuticle	Pollen	Monocotyledon	Dicotyledon
Stamen	Filament	Anther	Fruit	Vegetable	Cellulose	Cotyledon	Seed
Pollination	Pistil	Stigma	Style	Root	Stem	Leaf	Transpiration
Auxins	Hormones	Mesophyll	Guard cell	Tropism	Phototropism	Thigmotropism	Geo/Gravitropism

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

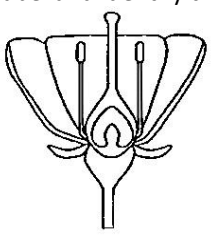
1. Identify the 3 major organs of a plant.
2. What part(s) of a plant would be made up of dermal tissue?
3. What part(s) of a plant would be made up of vascular tissue?
4. Xylem is used to primarily transport what substances in a plant? What direction are the materials transported in?
5. Phloem is used to primarily transport what substances in a plant? What direction are the materials transported in?
6. For a plant to retain turgor pressure, a vacuole full of water, what type of solution must the plant cell be in?
7. What type of solution will make a plant cell lose water and dehydrate (plasmolyze)?
8. If a plant doesn't have a vascular system (no roots, stem, xylem or phloem) where could it store water?
9. What is the function of the cuticle?
10. What is the function of the guard cell and stomata?
11. How does the leaf get carbon dioxide for photosynthesis?
12. Label structures A, B, F, G and identify the waxy covering of the leaf in this lead cross section.



13. Identify three major functions of roots. Explain why each function is important to the plant.
14. Identify the mutualistic relationship between roots and fungi. How does this relationship benefit the plant?

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

15. Label and identify the stamen, pistil and petals found on most flowers.



16. What two places does meiosis occur in the flower?

17. What are three ways that seeds of flowering plants can be dispersed?
18. How can seeds in fruit be dispersed?

19. How can a combinations of sexual and asexual reproduction be beneficial for plant populations?

20. What is a hormone and what does it do?

21. Describe the function of auxins.

22. Identify the images below as gravitropism (geotropism), thigmotropism, or phototropism; then explain how each of these can help a plant maintain homeostasis