***Name*_____ *Period*_____ *Date*_____**

AP BIOLOGY – PARADE THOUGH THE PLANTS

Complete the questions using the chapters of your textbook.

CHAPTERS 29 & 30- Plant Diversity

1. Chart the four phyla of the plant kingdom. Include the common names of each, the approximate number of extant species, and the major characteristics.

a._____

_____

_____

b._____

_____

_____

c._____

_____

_____

d._____

_____

_____

2. Why are Charophyceans thought to be ancestors of land plants?

_____

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_____

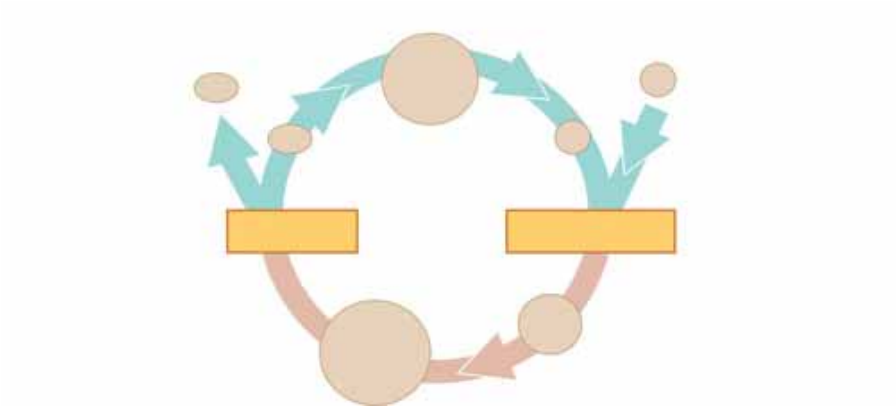
3. List several adaptations of land plants significant for terrestrial survival.

_____

_____

_____

4. Label the generic diagram to explain Alternation of Generations



5. Describe a few features common to Bryophytes.

_____

_____

_____

6. What is the dominate phase of the moss life cycle?

_____

_____

_____

7. List a couple of adaptations of Pteridophytes (ferns) not seen in Bryophytes.

_____

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_____

8. What is the dominate phase pf the fern life cycle?

_____

_____

_____

9. How is the reduced gametophyte an adaptation for seeded plants?

_____

_____

_____

10. What is the significance of the seed?

_____

_____

_____

11. What is the advantage of pollen?

_____

_____

_____

12. List the four phyla of gymnosperms. Which is the most common?

_____

_____

_____

13. Identify five differences between monocots and dicots.

_____

_____

_____

_____

_____

_____

_____

_____

14. What is the adaptive value of the flower to plants?

_____

_____

_____

15. Describe the role of ovaries and ovules in the flowering plants.

_____

_____

_____

16. List several features of angiosperms that aid in seed dispersal.

_____

_____

_____

CHAPTER 35- Plant Structure and Growth

1. List the basic plant organs with their functions.

_____

_____

_____

2. What is the adaptive value of root hairs?

_____

_____

_____

3. List several types of leaves and examples of their functions.

_____

_____

_____

4. List and indicate functions of several organelles unique to plant tissues.

_____

_____

_____

5. Give a brief description and example of the following plant tissues.
    a. Xylem_____

    _____

    _____

    b. Phloem_____

    _____

    _____

    c. Parenchyma_____

    _____

    _____

    d. Collenchyma_____

    _____

    _____

e. Sclerechyma_____

_____

_____

f. Epidermis/Protective_____

_____

_____

6. List and describe the three primary growth tissues.

_____

_____

_____

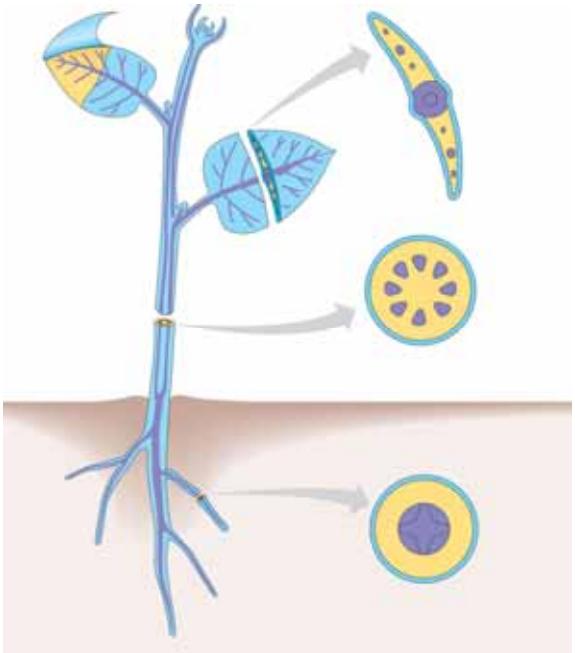
_____

_____

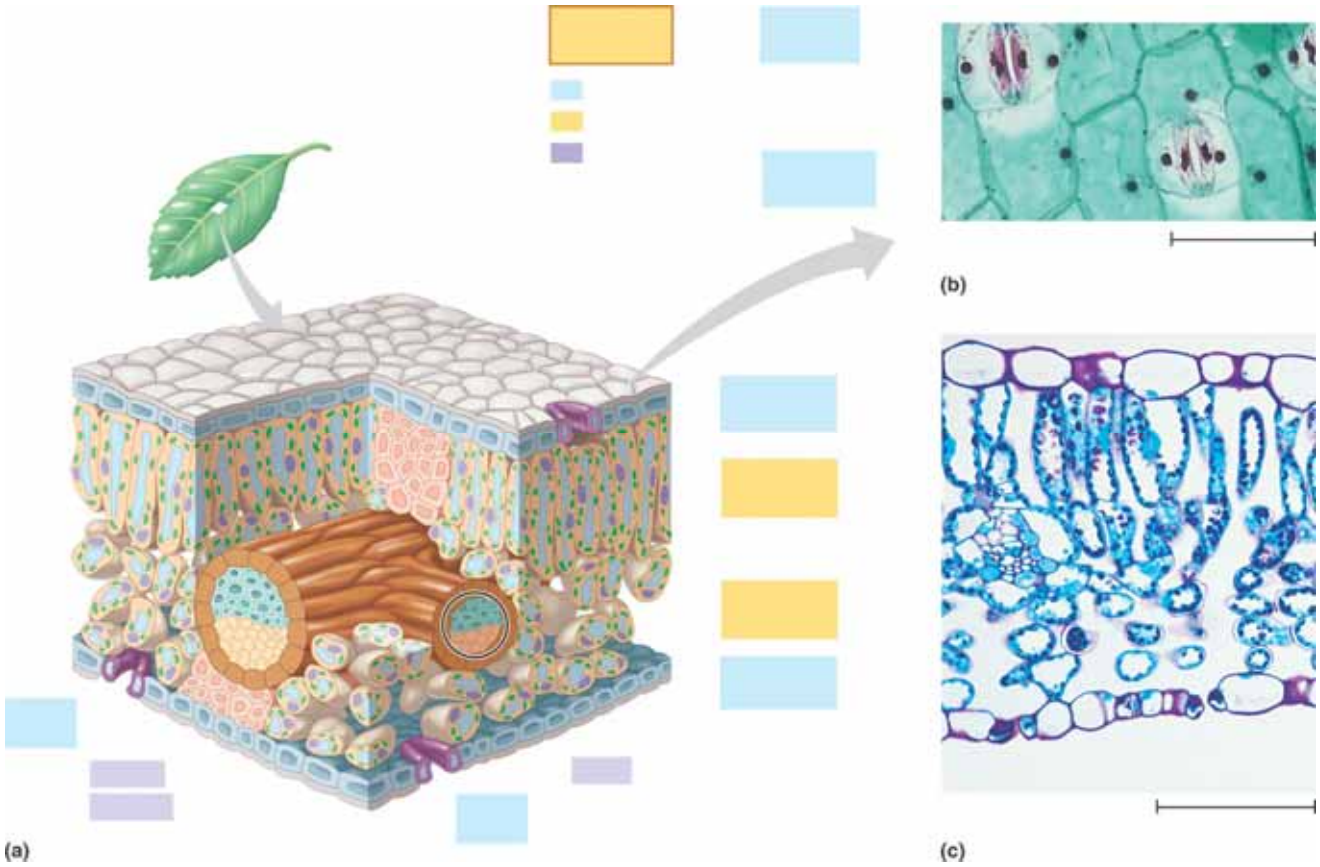
_____

_____

7. Label the diagrams of the stems and indicate the functions of the tissues.



8. Label the Diagram of the leaf and indicate the function of the tissues.



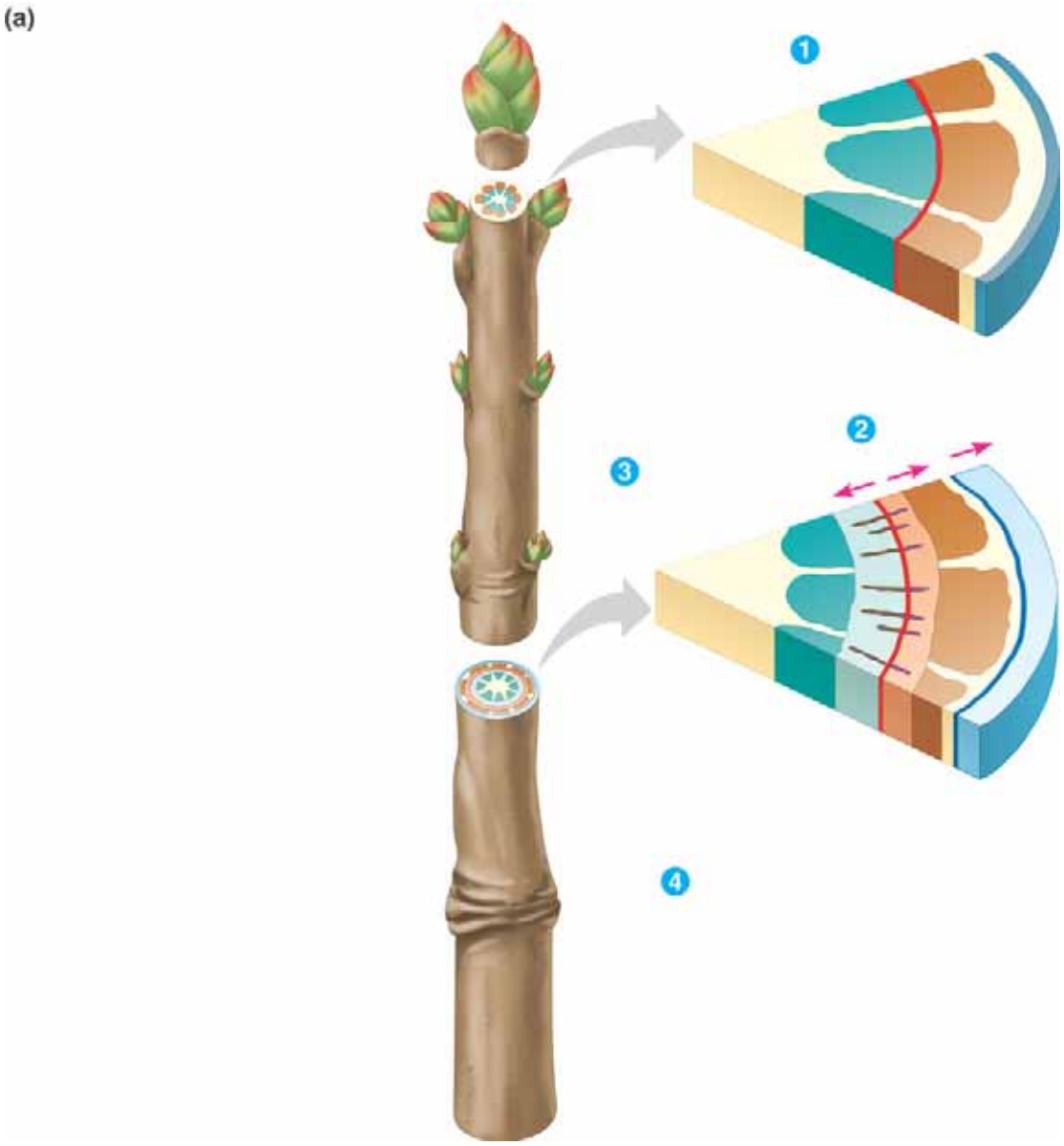
9. What is the role of the stomata?

_____

_____

_____

10. Label the diagram of a cross section through a woody stem and indicate the functions of the tissues.



CHAPTER 36- Transport in Plants

1. What is the role of each of the following in plant transport?
    a. Transpiration_____
    _____
    _____
    b. Xylem_____
    _____
    _____
    c. Phloem_____
    _____
    _____

2. What is the trend in atmospheric CO_2 seasonally and over the past 50 years?

_____
_____
_____

3. How does chemiosmosis bring the following into the plant cell?
    a. Cations_____
    _____
    _____
    b. Anions_____
    _____
    _____
    c. Sucrose_____
    _____
    _____

4. What is the mechanism that creates the gradient in chemiosmosis?

_____
_____
_____

5. What is believed to be responsible for the rapid water exchange in plant cells?

_____

_____

_____

6. Define the following methods of lateral transport.
    a. Transmembrane_____

        _____

        _____

    b. Symplastic_____

        _____

        _____

    c. Apoplastic_____

        _____

        _____

7. What is the role of the epidermis in the root?

_____

_____

_____

8. How do mycorrhizae help plants?

_____

_____

_____

9. Describe the mechanisms of water transport.
    a. Transpiration_____

        _____

        _____

b. Cohesion and Adhesion

_____

_____

_____

c. Root pressure

_____

_____

_____

10. What mechanism causes stoma to open when the guard cells are in “good conditions”?

_____

_____

_____

11. Describe the pressure flow mechanism of sugar transport.

_____

_____

_____

CHAPTER 37- Plant Nutrition

1. How do nutrients enter plants?

_____

_____

_____

2. What is the difference between macronutrients and micronutrients?

_____

_____

_____

3. Why is magnesium important to plants?

_____

_____

_____

4. How do plants absorb cations from the soil?

_____

_____

_____

5. Why are root hairs important to plants?

_____

_____

_____

6. Describe the path of nitrogen from the atmosphere to plant protein. Include the role of each of the following.
    a. Nitrogen-fixing bacteria

    _____

    _____

    _____

    b. Ammonifying bacteria

    _____

    _____

    _____

    c. Nitrifying bacteria

    _____

    _____

    _____

    d. Denitrifying bacteria

    _____

    _____

    _____

7. Describe the following unique nutritional relationships.
    a. Rhizobium bacteria & legumes

    _____

    _____

    _____

    b. Mycorrhizae_____

    _____

    _____

    c. Parasitic plants

    _____

    _____

    _____

d. Carnivorous plants

_____

_____

_____

CHAPTER 38- Plant Reproduction

1. When does the sporophyte and gametophyte generation begin in the typical angiosperm?

_____

2. Identify the general functions of the parts of a complete flower.
    a. Sepal_____
    _____
    _____
    b. Petals_____
    _____
    _____
    c. Stamen_____
    _____
    _____
    d. Carpel_____
    _____
    _____

3. Describe the two processes that produce the angiosperm's gametophyte.
    a. Male_____
    _____
    _____
    b. Female_____
    _____
    _____

4. What is meant by double fertilization?

_____
_____
_____

5. How is the seed embryo nourished?

_____

_____

_____

6. Sketch and label a dicot and monocot seed. Include the functions.

7. What does a seed need to germinate?

_____

_____

_____

8. Identify some asexual mechanisms for plan reproduction.

_____

_____

_____

9. Label the diagram of an idealized flower.

CHAPTER 39- Control Systems in Plants

1. How does light influence sprouting plants?

_____

_____

_____

2. Describe the steps of the signal transduction pathway.
    a. Reception_____

    _____

    _____

    b. Transduction_____

    _____

    _____

    c. Response_____

    _____

    _____

3. What did early experiments on photoperiodism demonstrate?

_____

_____

_____

4. What does auxin do in plant cells that cause elongation?

_____

_____

_____

5. Define apical dominance.

_____

_____

_____

6. Identify the two functions of gibberellins.

_____

_____

_____

7. Identify a few plant responses to ethylene.

_____

_____

_____

8. Are all wavelengths of light equal when it comes to phototrophism? Explain.

_____

_____

_____

9. What are the two forms of phytochrome and how are they switched?

_____

_____

_____

10. When do short day plants flower?

_____

_____

_____

11. What happens when short day plants receive flashes of light?

_____

_____

_____

12. When do long day plants flower?

_____

_____

_____

13. What happens when long-day plants receive flashes of light?

_____

_____

_____

14. What may be a cause of root gravitropism?

_____

_____

_____

15. What is the mechanism that causes Mimosa leaves to close?

_____

_____

_____