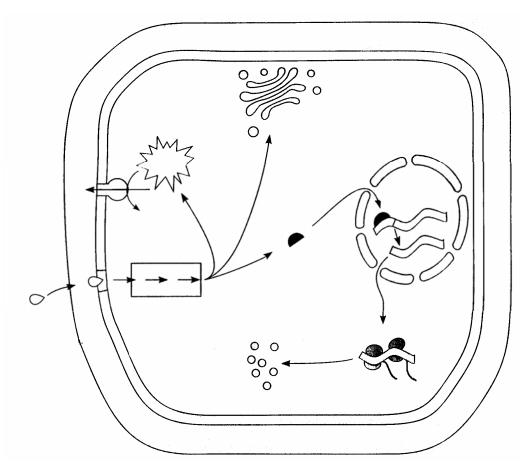
AP BIOLOGY PLANTS FORM & FUNCTION ACTIVITY #5 NAME_____

DATE_____HOUR____

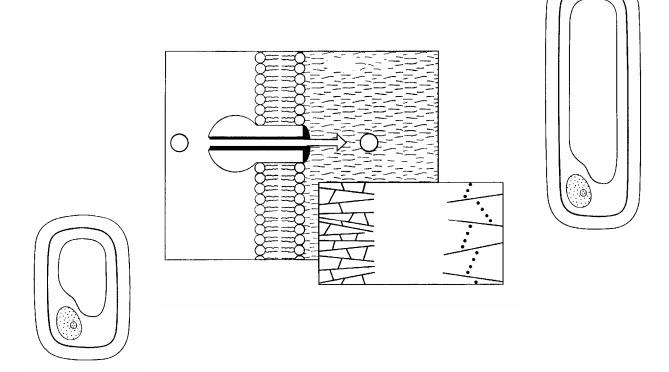
CONTROL SYSTEMS IN PLANTS

HORMONES

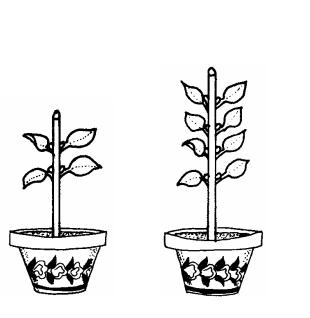
MECHANISM FOR HORMONE ACTION

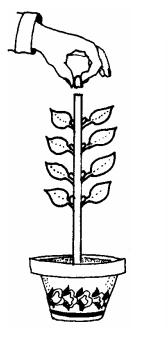


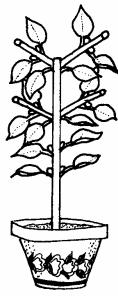
CONTROL OF CELL ELONGATION



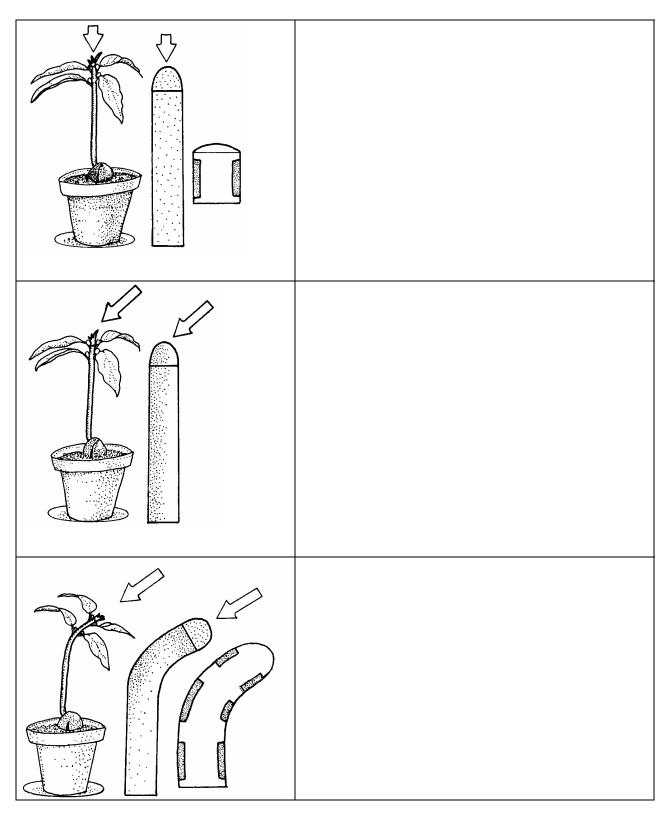
CONTROL OF APICAL DOMINANCE



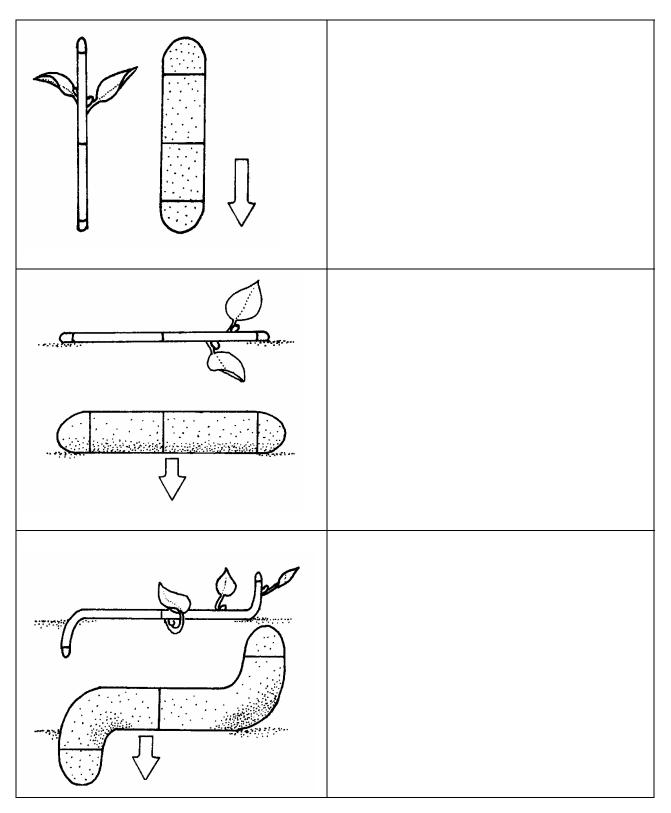


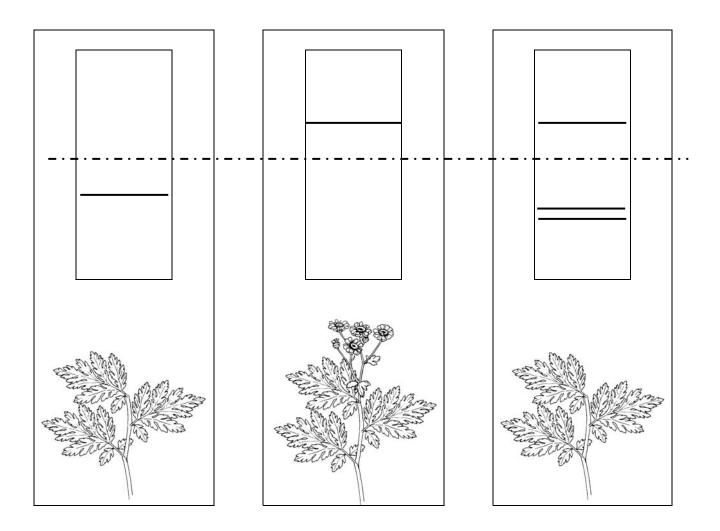


PHOTOTROPISM

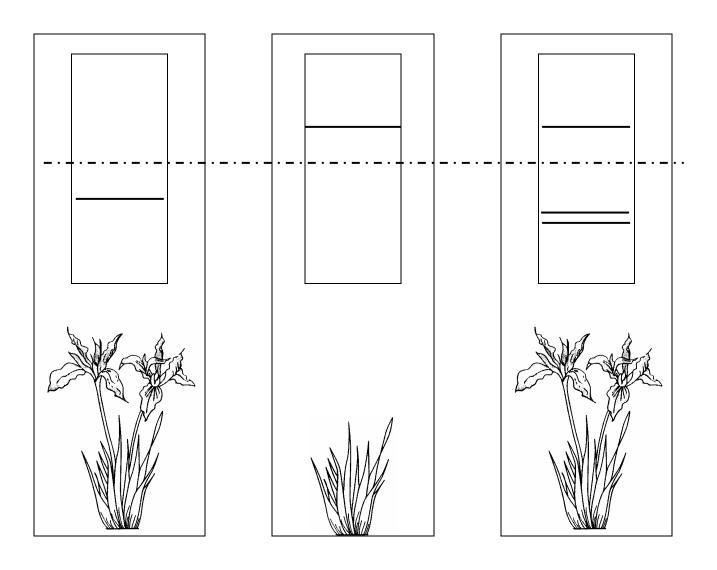


GRAVITROPISM





CONTROL OF FLOWERING: SHORT-DAY PLANTS



CONTROL OF FLOWERING: LONG-DAY PLANTS

QUESTIONS:

1. Listed below are the production sites and effects of the seven classes of plant hormones. Identify the hormone described. Use the key provided to indicate your answers.

ABA =Abscisic acidB =BrassinosteroidsC =CytokininsE =Ethylene	~	Auxin Gibberellins Oligosaccharins					
Produced by cells in the apical meristem of the shoot, embryo of the seed, and young leaves seed, and young leaves Produced by actively growing tissues in roots, embryos, and fruits							
Produced by cells in meristems of apical buds and roots, young leaves, embryos Produced by cells in leaves, stems, roots, green fruit							
Produced by tissues of ripening fruits, nodes of stems, aging leaves, and flowers Found in cell walls							
Produced by cells in seeds, fruits, shoots, leaves, and floral buds							
Required for normal growth and development							
Trigger defense responses against pathogens; regulate growth, cell differentiation and flowering Inhibits cell division							
Helps prepare plant for winter; stimulates leaf primordial to form scales Stimulates the onset of seed dormancy							
Causes stomata to close when plant begins to wilt							
Causes fruit to ripen							
Inhibits growth when auxin levels are high							
May stimulate aging in plants							
Stimulates formation of abscission	Stimulates formation of abscission layer that leads to loss of leaves						
Causes Thompson grapes to grow larger and farther apart							
When applied to dwarf plant, causes plant to grow to normal heig							

- _____ Causes bolting in plants
- _____ Stimulates flowering and fruit development
- _____ Promote seed and bud germination
- _____ Anti-aging hormone
- _____ Inhibits branching in roots
- _____ Stimulates growth of axillary buds
- _____ Stimulates cell division
- _____ Promotes growth of fruit
- Promotes formation of adventitious roots
- _____ Promotes cell division in vascular cambium

_____ Stimulates cell elongation

2. Cytokinins work with auxin. Varying the ratio of auxin to cytokinins in tissue culture produces different effects. Describe the effect on plant growth in each of the following.

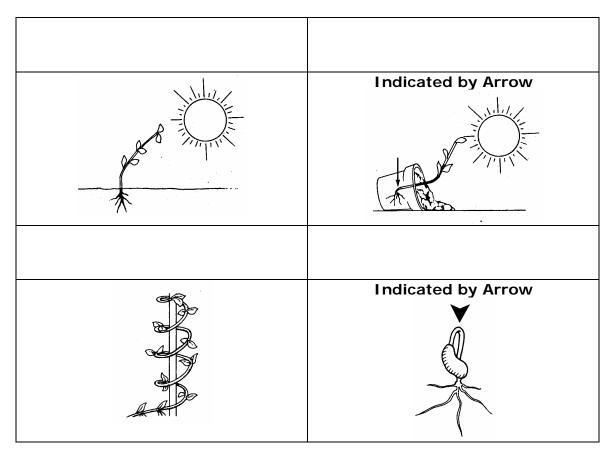
RATIO	EFFECT ON PLANT GROWTH
Only auxin	
Only cytokinins	
Equal concentration of auxin and cytokinins	
More auxin than cytokinins	
More cytokinins than auxin	

3. What must happen to the levels of ABA and gibberellin in a seed in order for it to germinate?

- 4. What are tropisms?
- 5. If a plant part exhibits a positive tropism, it curves ______ the stimulus.

If a plant part exhibits a negative tropism, it curves ______ from the stimulus.

6. What type of tropism is shown in each picture below? Be sure to indicate if the tropism is positive or negative.



7. Why do cells on the shaded side of a stem have a higher rate of cell elongation that the cells on the sunny side?

- 8. Explain why tendrils curl around an object.
- 9. Describe the rapid leaf movement in the Mimosa plant.

Explain how this occurs.

10. Define the following terms.

Circadian rhythms	
Photoperiodism	

11. Under what photoperiod conditions will:

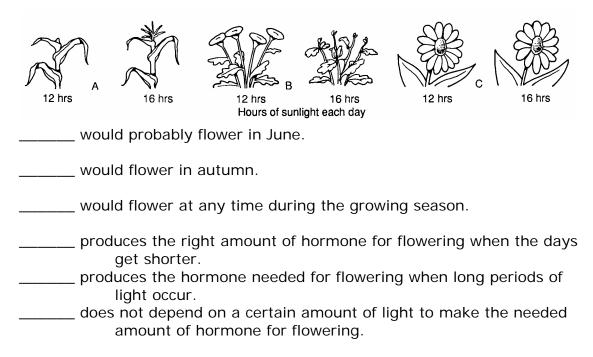
Short-day plants flower? _____

Long-day plants flower?

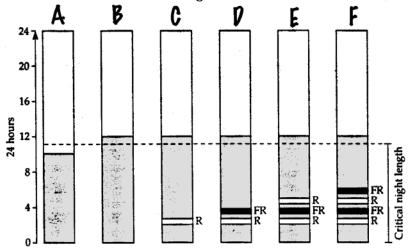
12. What is phytochrome?

What is its role in triggering plant responses?

13. Use the drawings below to complete the statements that follow.



14. On the diagram below, indicate whether a short-day or a long-day plant would flower under each of the light conditions shown.



Condition	Would short-day plants flower?	Would long-day plants flower?	Condition	Would short-day plants flower?	Would long-day plants flower?
А			D		
В			E		
С			F		