**Biology I Plants Test Review**

*Refer to the following questions and vocabulary to help you to review for the test.*

* Required vocabulary: transpiration, cohesion, adhesion, hydrogen bonding, vascular tissue, stomata, cuticle, guard cells, epidermis, mesophyll, xylem, phloem, osmosis, root hairs, and auxin.
* How do ancient plants differ from current plants?
	+ What challenges are unique to early land plants?
* What organelle is present in plants that is responsible for cellular respiration?
* What organelle is present in plants that is responsible for photosynthesis?
* Examine the picture below and answer the following questions.
	+ Which organism is more closely related to flowering plants?
	+ Which organism is more distantly related to flowering plants?
	+ Which organism(s) contain vascular tissue?
	+ Plants evolved \_\_\_\_\_ after they evolved seeds

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* What are the types of root systems?
	+ How do they differ?
	+ How does this difference serve as an adaptation?
* What is the function of the plant root?
	+ What are adaptations that exist that enable them to function effectively?
* Describe the movement of water in a plant.
	+ How does this process differ from the movement of nutrients?
* What is vascular tissue?
	+ Why is it important?
	+ What structures make up the vascular bundle/tissue?
		- What is the function of each?
		- How do they differ?
		- How are they similar?
* What is the direction of transport in each vascular structure?
	+ How is each structure specialized for their function?
* What are adaptations of leaves that enable them to be efficient in photosynthesis?
* What is transpiration?
	+ How is the leaf adapted to reduce its effects?
* How do differences in the proportion of chloroplasts relate to its ability to photosynthesize?
* Draw a cross-section of a leaf.
	+ Label the parts and briefly summarize the function of each structure.
	+ What is the role of the cuticle?
	+ Which part of the leaf is responsible for photosynthesis?
* What are guard cells?
	+ Where are they located?
	+ How do these guard cells maintain homeostasis in the plant?
* What are possible explanations for why leaves on a tree differ in size and appearance?
	+ How does this difference relate to its genes?
	+ What is the effect of the environment on plant genes?
* What are adaptations that enable plants to survive in extreme environments, such as deserts, salty marshes, and anaerobic environments?
* What are tropisms?
	+ What are the types of tropisms that exist?
	+ What is positive and negative tropism?
	+ Explain how they are collectively similar and different.
	+ What is the role of auxins in tropisms?
		- Explain how each tropism is beneficial to the plant.
		- The behavior of the Venus flytrap is an example of which?
			* Why?
* How do gymnosperms and angiosperms differ?
	+ What adaptations have enabled angiosperms to be more successful?
		- Explain why.
* What are the reproductive structures in gymnosperms and angiosperms?
	+ How do they differ?
	+ How are they similar?
	+ How does this difference provide an evolutionary advantage?
		- Give an example of each.
* What is the function of a flower?
	+ For the cross-section of a flower below, label its parts and specify the function of each.



* What adaptations would seeds possess for dispersal by wind?
	+ Animal?
		- State 2
	+ Or water?
		- State 2
* What is the role of hormones in the plant?
	+ What system produces these hormones?
	+ Give an example of the effect of hormones and it’s interaction with another system.
* Are carrots examples of modified roots, stems, or leaves?
	+ Explain why.
	+ Are onions examples of modified roots, stems, or leaves?
		- Explain why.
* Nitrogen fixing bacteria have a mutualistic relationship with the plant kingdom.
	+ Explain why.
	+ How does this role relate to the macromolecules/biomolecules- protein and nucleic acids?
	+ What is a mutualistic relationship?
		- How does this differ from commensalism, and parasitism?
* What is the apical meristem?
	+ What is the importance of the apical meristem in plants?
	+ What process takes place here?