

## BSCS Chapter 7 Study Guide

Know:

1. The adaptations required for the evolution of tall vascular plants.
2. The names of land plants in which xylem and phloem are found.
3. The advantages of plant's having root hairs.
4. The name(s) of plant(s) that would be affected by a disease which prevents the synthesis of lignin.
5. Whether plants that have a vascular system have variation.
6. The purpose of a transport system.
7. What part of a land plants is needed for these plants to acquire gases for photosynthesis and cell respiration.

8. The evolution of the development of xylem tissues in land plants was the answer to what problem
  
9. Is the movement of water through the xylem tissue carried out by active or passive transport?
  
10. What mycorrhizae on plant root systems enhances.
  
11. What explains how water and its dissolved nutrients reach the top of a tall tree.
  
12. If someone cuts down a tall tree, why water doesn't well up on the surface of the trunk which was cut, even if the soil is very wet.
  
13. Explain the cohesion-tension theory.
  
14. The methods used by vascular plants to transport water to their leaves.
  
15. Whether the root pressure in a plant can by itself account for the rise of water in tall trees and plants.

16. How would you explain the pressure-flow hypothesis?

17. Refer to the figure below.

- a. What must happen to the water in the bulb to produce an upward movement of water in the tube?
- b. If the cohesion-tension theory of water transport and the diagram represents a tall tree what would the system require?
- c. What does the glass tube structure represent?

d. What do the pores in the bulb represent?

18. Name the theory which would explain why trees 30 + meters in height bring water from the soil to their uppermost leaves..

19. Name the theory which explains why sap moves upward in some trees before spring leaves come out.

20. What do the phloem cells in stems transport?

21. What is the function of the vascular system?

22. How are nutrients transported from one side of the cambium to the other?

23. Refer to the figure below.

There will be 5 questions associated with this diagram. Once example is as follows:

24. How are an insect's digested nutrients transported?

25. What is the difference between a closed and open circulatory system.

26. Why do hydras lack a special transport system and grasshoppers can't survive without one?

27. Define: capillaries. Where would capillaries be found in the human body?

28. Describe the difference between arteries and veins.

29. Having a four chambered heart separate blood from the lungs and blood from of the rest of the body increases the efficiency of what exchange in the human body?

30. Please refer to the diagram below. This figure represents a four chambered heart and blood flow to and from the body.

There will be 5 questions associated with this diagram.

31. What would be the most muscular chamber in a four chamber heart?

32. List the correct order of blood flow through heart in mammals.

33. Why would a three chamber heart be a disadvantage?

34. Describe the cardiac cycle.
35. Name the cells that are specialized muscle tissue located high in the inner wall of the right atrium and what their role is in the human heart.
36. When you look at a slide of the heart muscle under a microscope why do you see stripes?
37. Refer to the diagram below. You will have four questions associated with the figure.
- Which is the control?
  - Which treatment reduces capillary circulation (the most)?
  - Which treatment caused the (greatest) change from normal blood flow?
  - What did the reduction in temperature most likely cause?

38. Do arteries or veins have valves?
39. What role does hemoglobin in red blood cells play in the composition of blood?
40. What is plasma and what role does it play?
41. Erythrocyte production is located in what part of the mammal body part?
42. If an individual has a low red blood count what might the blood have difficulty doing?
43. If a doctor asks for a blood test to check abnormal chemicals in the blood what part of the blood would the chemical show up in?
44. Where does the intercellular fluid found in the lymphatic system come from?
45. What does lymph fluid contain?
46. How does the majority of fluid which leaks into body tissues return to the circulatory system?



47. Name the elements in blood which are responsible for clotting.
48. What helps the protein in blood form a blood clot?
49. A person is diagnosed with hemophilia. What is hemophilia?
50. What are some of the functions of the circulatory system?
51. How does the human circulatory system help to maintain homeostasis?
52. Refer to the diagram below. There will be four questions associated with the figure. Questions will be discussed in class.