

## Study guide for Bio 4 Hoffman Chapter 20-21--Heart and Blood Vessels

This guide is intended to help you direct your attention to material covered in class. If by error I have failed to include something on this guide that was covered in lecture, it does not mean it will not be on the test. All material on your Powerpoint handouts may be on your test. I have intended to make this guide comprehensive but it is NOT a *guide* to the questions on the test. Use it wisely.

1. Where is the heart located? What are the base and apex of the heart? Define mediastinum.
2. Name the coverings of the heart from inside to outside.
3. Describe the heart in terms of its chambers, valves, septums, and blood flow.
4. What is the inside lining of the heart called? What are the chordae tendineae?
5. What is systole? What is diastole? What causes the first heart sound ("lub")? What causes the second heart sound ("dub")? Describe the cardiac cycle in terms of when the chambers contract and how that corresponds to the heart sounds. Think about what is happening during each step of the cardiac cycle.
6. Trace the path of an erythrocyte beginning at the aorta, throughout the cardiovascular system, and back to your starting point at the aorta. Note all valves and valve types, vessel types, chambers, and important structures along the way. Describe which portion is systemic circulation and which portion is pulmonary circulation. It may help to draw and label this path.
7. Along the route you traced in the question above, note where the blood is oxygenated and where it is deoxygenated. What is the function of the erythrocytes in the capillaries in the alveoli? In the capillary beds of distal body tissues?
8. Describe heart contractions in terms of electrical conduction. Where does this conduction begin? Trace the path of conduction through the heart, and note each conduction structure. What does it mean for a heart cell to depolarize? To repolarize?
9. What is a heart murmur? What is a myocardial infarction? What is angina pectoris? What is bradycardia? Tachycardia? Fibrillation?
10. Define artery, arteriole, capillary, venule, and vein. Why do some veins contain valves? Why are arteries thicker than other vessels? What are the names of the layers of the vessels? What types of tissue does each layer contain?
11. What are elastic arteries, and why are they elastic? What are muscular arteries, and what is their function? What causes vasoconstriction? What causes vasodilation?
12. What is a precapillary sphincter?
13. What happens to blood pressure as blood travels through the cardiovascular system? What is the skeletal muscle pump?
14. What causes varicose veins. What is an aneurysm?