

Worksheet - Cardiovascular System

1. BE SURE TO KNOW THE CARDIAC ANATOMY FROM YOUR LAB EXERCISE.
2. Blood pH must be maintained in a range from a low of _____ to a high of _____.
3. The formed elements of the blood include _____, **white blood cells**, and _____, which are cell fragments.
4. The main function of RBCs is _____ transport. This is accomplished by _____, the iron-containing pigment that makes the cells red.
5. The function of WBCs is to _____.
6. The function of platelets is _____. The technical term for this is **hemostasis**.
7. The cardiovascular system includes the _____ to pump blood and the **vessels**.
8. _____ carry blood TO the tissues, and _____ carry blood AWAY from the tissues.
9. The serous membrane of the heart is the _____, with a _____ layer covering the heart and a _____ layer lining the pericardial sac.
10. The 3 layers of the heart wall include the inner lining, called the _____, the thick muscular _____, and the outer _____, which is the same as the visceral pericardium.
11. The heart has 4 chambers, 2 upper _____ and 2 lower _____.
12. Between each upper and lower chamber on the left side of the heart is a valve called the _____ valve (also called the **mitral** valve). The one between the chambers on the right is the _____ valve.
13. Between the right ventricle and its artery is the _____ valve; on the left is the _____ valve.

14. All four valves function to prevent _____ of blood.

15. Match the vessels that connect each chamber:

16. Right atrium

a) aorta

17. Left atrium

b) pulmonary arteries

18. Right ventricle

c) pulmonary veins

19. Left ventricle

d) superior and inferior vena cavae

20. The _____ provide the heart itself with blood. The _____ veins drain blood back to the right atrium from the heart.

21. The _____ **circuit** takes deoxygenated blood to the lungs; its pumping chamber is located on the _____ side of the heart..

22. The _____ **circuit** takes oxygenated blood and distributes it to the entire body; its pumping chamber is located on the _____ side of the heart.

23. The conduction system of the heart controls the contraction sequence. It starts at the _____ node, which is the pacemaker of the heart. From there, the impulses go to the _____, then the _____, the _____, and the _____.

24. The term _____ means the cells set their own rhythm.

25. Atria contract, then as they relax, ventricles contract. Contraction is called _____ and relaxation is called _____. When the ventricles finish contracting, the entire heart remains relaxed so it can fill with blood before contracting again.

26. The term for one complete contraction/relaxation is the _____.

27. The amount of blood pumped by the heart each minute is called the _____. It is determined by heart rate and _____, which is the term for the amount of blood pumped in a single contraction.
28. The _____ nervous system increases heart rate, as do the hormones _____ and thyroxine. The _____ nervous system decreases heart rate.
29. The vessel type with the thickest walls is the _____, veins have a larger _____, meaning their diameter is wider than the corresponding artery.
30. The special circulation of the brain, the _____, includes blood vessels that can supply adequate blood volume if one or more of the other vessels is blocked.
31. Fetal circulation is somewhat backward. Since fetal organ systems are not yet functional, all oxygen and nutrient supplies come from the _____.
32. The walls of capillaries are only _____ cell layer thick, to allow for easy exchange of nutrients (including oxygen) and wastes (including carbon dioxide).
33. Since veins have thin walls and _____ pressure, flow is helped along by contraction of _____.
34. True _____ are arranged in beds.
35. When a capillary bed is closed off by precapillary sphincters, blood doesn't just stop. It reaches the venous side of the capillary bed by way of a _____.
36. The pressure wave in blood is the _____.
37. One renal factor that affects BP (by _____ it) is _____.
38. Temperature exerts control over BP; cold temperatures _____, while warm temperatures _____.

39. Label this heart with correct chambers, valves, major blood vessels, and the conduction pathway.



40. The formula for blood pressure is _____.