

Total: 38

Name: _____

Teacher

Date: _____

May 09

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Circulatory System + Blood Review

1. Complete the following sentences using the following words: lungs, cells, carbon dioxide(2), oxygen(2). (3 marks)

- a) In the pulmonary circulation, the blood rich in CO₂ will become rich in O₂ after the gas exchange occurs in the capillaries surrounding the alveoli.
- b) In the systemic circulation, the blood rich in O₂ will become rich in CO₂ after the gas exchanges that occur in the capillaries surrounding the body.

2. List 2 differences between veins and arteries? (2 marks)

veins: thin walls, ↓ pressure
arteries: thick walls, ↑ pressure

3. The antigens present at the surface of the red blood cells determine the blood type of a person. With the ABO and Rhesus systems, what are the eight possible blood types? (2 marks) A⁺ A⁻ B⁺ B⁻ AB⁺ AB⁻ O⁺ O⁻

4. Which blood type is the universal donor? Explain why. Use words like antigens and antibodies. (2 marks)

O⁻ has no antigens, no antibodies against it

5. If a person has AB+ blood type, what antigens do they have on their red blood cells? Which blood type can they give to and why? (2 marks)

A, B, Rhesus, AB⁺ only - other blood types will have antibodies

6. Jack has a blood pressure of 150/98 mm of Hg. What does this mean? Is Jack suffering from hypotension or hypertension? What can Jack do to bring his blood pressure back to normal? (3 marks)

↑, hypertension, exercise, diet, ↓ alcohol / smoking

7. What is the role of plasma? (1 mark)

transports r/w b/c, platelets, nutrients, antibodies, hormones, waste, clotting factor, liquid flow

8. Which blood type is the universal recipient? Explain why. Use words like antigens and antibodies. (2 marks)

AB⁺, has all antigens = no antibodies

9. Imagine you are a red blood cell. Describe the path you will take through the body starting with the left atrium. Include a description of what will be added or taken out of the blood at the appropriate points. (3 marks)

left atrium, left ventricle, aorta, arteries, arterioles, capillaries (diffuse O₂ - cells, CO₂ to blood), venules, veins inf/sup vena cava, right atrium

10. A woman is in a massive car accident. She is taken to the hospital where they find that she needs a blood transfusion. The nurse tests her blood, she is type AB⁻. What blood types can she be safely given? Why can she not be given the other blood types? Explain fully. (3 marks)

A⁻ B⁻ O⁻ AB⁻ - Rhesus antibodies

11. Blood components present different characteristics and functions. Complete the following sentences by writing the name of the constituent described. (3 marks)

Platelets

Red blood cells

White blood cells

- a. The only blood cells that have a nucleus are the white.
- b. The platelets are important for the coagulation of blood.
- c. The red are responsible for the transportation of oxygen and carbon dioxide.

12. What is the function of a valve? (1 mark)

back flow

13. Blood is ejected from the heart with great pressure and travels through the arteries. When it reaches the capillaries, it travels in a very slow motion and when it reaches the veins, the pressure is very low. How does the blood make its way back to the heart? (2 marks)

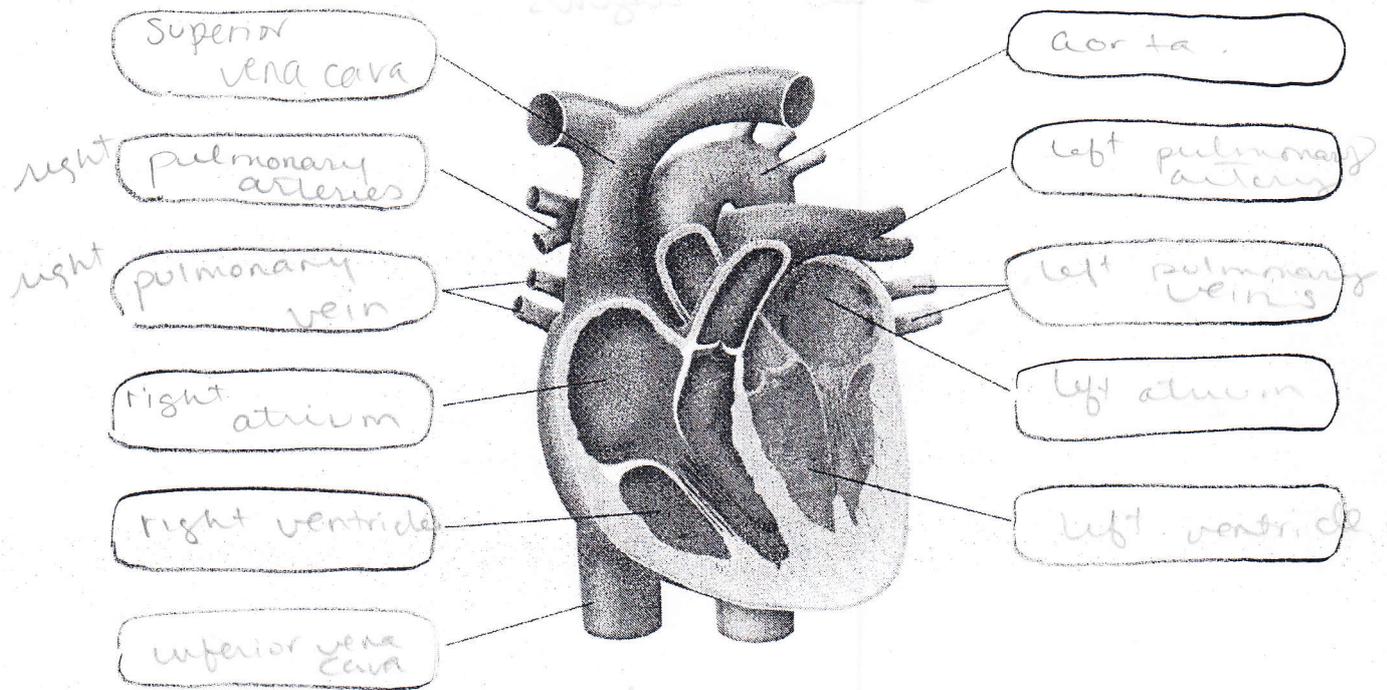
Muscle contractions

14. What is the protein present in red blood cells that allows for the transport of oxygen and carbon dioxide? (1 mark)

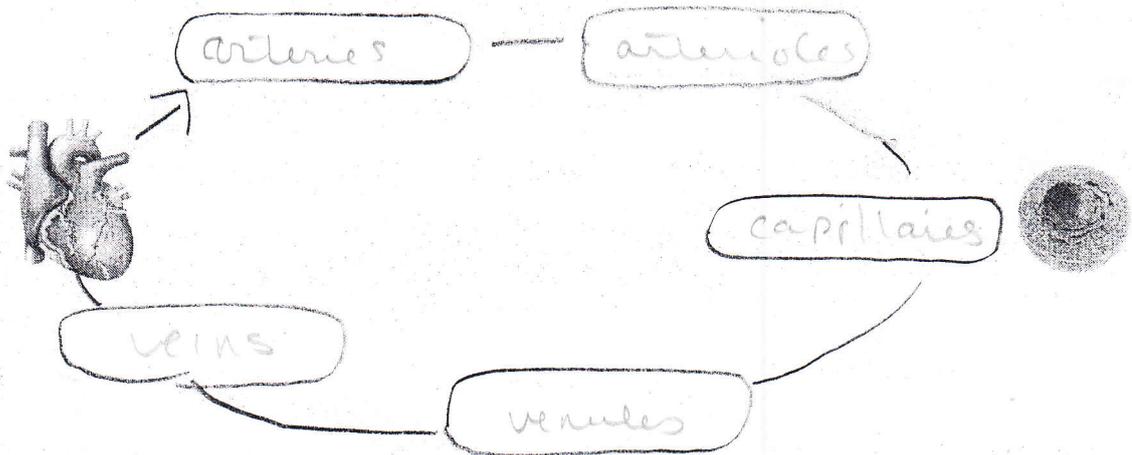
hemoglobin

Diagrams = 8 marks total

15. Complete the following schema.



16. Complete the following schema of the different blood vessels taken by the blood to go through the body.



Bonus: 2 marks

What is the name of the device with which you can listen to your heart beat?

stethoscope