Name: Answer Date: _____

Circulatory System: Practice Stencil

1. Fill in the table below:

Chamber of the Heart	Receives blood from…	Sends Blood to…
Left Ventricle	Left Atrium	body, organs, cells through aorta
Right Ventricle	Right Atrium	lungs to get O_2.
Left Atrium	Lungs (oxygenated)	left ventricle.
Right Atrium	Veins / Organs (deoxygenated)	right ventricle.

2. What is the purpose of backflow valves in the heart?
allow blood to pass from one compartment to the next and blocks reflux / backflow.

3. Is blood a compressible or non-compressible fluid? Justify your answer.
Blood is incompressible. Liquid, specific volume, cannot reduce volume under pressure it is moved.

4. Why is the left ventricle thicker than the right ventricle?
more muscular, blood that is sent to entire body leaves left ventricle so needs stronger muscle contraction

5. What happens during the contraction of a ventricle or atrium, when force is exerted on the blood? to push it through
Because blood is incompressible, the contraction forces the blood to pass through the cavity (valve) into the next vessel

6. a) Arteries and arterioles transport blood from heart to organs of body.

b) Veins and venules transport blood from organs to ♡.

c) Capillaries transport blood from arterioles to venules.

7. Why are arteries thicker than veins?
Blood leaves heart into arteries at ↑ pressure so the arteries must be able to support the pressure

8. Paul is a 50 year old who recently suffered a severe heart attack. The coronary blood vessels, which supply the heart with nutrients and oxygen, were blocked. Therefore, his cardiac muscle was deprived of oxygen for some time. Now, certain muscle cells in his heart no longer work. He always feels tired, even when he's at rest, and constantly lacks energy. His heartbeat is also quicker and irregular. Explain what is going on. Coronary vessels give nutrients & O_2 to heart. If some of these get damaged, heart needs to work more.

9. a) What is systolic pressure? (contracted) (↑ # on top)
B.P at max when ventricles contract
Arteries expand under pressure of blood

b) What is diastolic pressure? (relaxed, between contractions)
↓ # on bottom
↓ when ♡ is not contracting.

* Right ventricle ↓ functional.
- Less blood goes to lungs for O_2.
* Left ventricle not pumping a lot of O_2 to cells.
- more work.
* Less energy cause less O_2 to cells + nutrients.
* ♡ pumps faster to compensate.
- more effort, tired & irregular

Systolic Diastolic

10. Patient A has a blood pressure of 125 over 80 mm of Hg. Patient B has a blood pressure of 98 over 55 mm of Hg. If hypotension means having blood pressure lower than 105 over 60 mm of Hg, who's blood pressure is too low?

Patient B - less than 105/80 Normal is 105-130 / 60-85

High is 140/90

11. True or False:

a) Systemic circulation allows blood to be oxygenated F

b) When blood is collecting CO_2, it is undergoing pulmonary circulation F

c) When blood travels from the left ventricle to arteries, arterioles, capillaries, venules and veins in order to return to the right atrium, it has completed systemic circulation T

d) Veins have surrounding muscles which contract in order to help blood flow T

S/D

12. Sylvia went to the doctor. She thinks she is stressed because her systolic blood pressure was 128 mm of Hg and her diastolic was 86 mm of Hg. If normal adult blood pressure is 120 over 80 mm of Hg, should she be worrying? it's a bit high 128/86 - normal is from 105-130 / 60-85

13. When you listen to your heart beat with a stethoscope you hear two distinct beats. What causes these sounds? Opening/closing of valves - valves work 2 at a time. (artery valves from ventricles to arteries & atrium to ventricle).

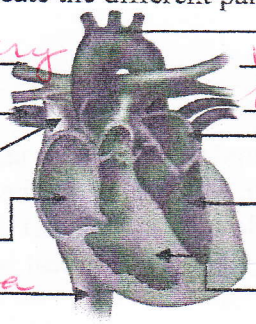
14. What do the capillaries exchange with the other cells and organs?

nutrients + O_2 for CO_2 + waste.

15. At what speed does blood pass through the capillaries? Explain why.

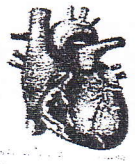
One at a time | Slowly to ensure gas exchange happens

16. Below is an image of a heart. Indicate the different parts of the heart.



aorta
right pulmonary artery
left pulmonary artery
right pulmonary vein
left pulmonary vein
superior vena cava
left atrium
right atrium
left ventricle
inferior vena cava
right ventricle

17. Below is a diagram of blood circulation and the different types of vessels it may pass through. Use the words capillaries, arteries, arterioles, venules and veins to complete the diagram.



Heart

arteries → arterioles → capillaries → venules → veins → Heart

Cells