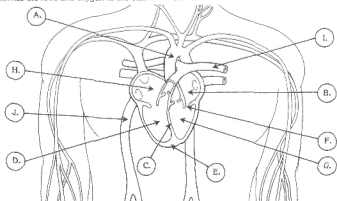


The Circulatory System

The circulatory system provides the force and channels for the distribution of the blood, which carries the food and oxygen to the cells and removes wastes.



Identify the part indicated by each letter.

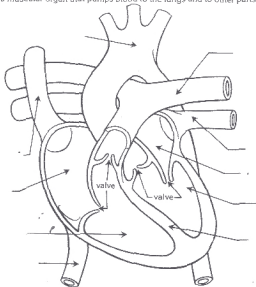
- | | |
|------------|------------|
| A. → _____ | F. → _____ |
| B. → _____ | G. → _____ |
| C. → _____ | H. → _____ |
| D. → _____ | I. → _____ |
| E. → _____ | J. → _____ |

Complete each sentence with a word or words that will make the sentence a true statement.

1. Veins carry blood → _____ the heart; arteries carry blood → _____ the heart.
2. Tiny blood vessels are called _____.
3. The main organ of the circulatory system is the _____.
4. The fluid part of the circulatory system is called _____.
5. In your own words, tell how blood flows through the heart and to other parts of the body.

The Heart

The heart is a muscular organ that pumps blood to the lungs and to other parts of the body.



1. Which is the largest and the main artery of the circulatory system? _____
2. Name the blood vessels that carry blood from the upper and lower parts of the body.

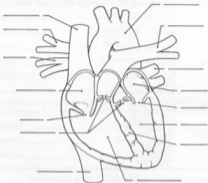
3. What separates the left and right side of the heart? _____
4. Name the blood vessels that carry blood to and from the lungs.
_____ and _____
5. Name the four chambers of the heart. _____
6. What keeps blood from flowing back into a chamber of the heart? _____
7. In the diagram of the heart at the top of this page, draw arrows showing the flow of blood through the heart.

STRUCTURE OF THE HEART

Name _____

Label the following parts of the human heart on the diagram below.

- a. aorta
- b. left pulmonary artery
- c. left pulmonary vein
- d. left atrium
- e. bicuspid valve (mitral valve)
- f. left ventricle
- g. septum
- h. right ventricle
- i. inferior vena cava
- j. semilunar valves
- k. tricuspid valve
- l. right atrium
- m. right pulmonary vein
- n. right pulmonary artery
- o. superior vena cava



Heartbeat

Fill in the blanks with the correct answers.
Then, label the nodes in the diagram to the right.

The heart beats regularly because it has its own pacemaker. The pacemaker is a small region of muscle called the sinoatrial, or SA, node. It is in the upper back wall of the right _____.

The _____ node triggers an impulse that causes both atria to _____.

Very quickly, the impulse reaches the atrioventricular, or AV, node at the bottom of the _____ atrium. Immediately, the _____ node triggers an impulse that causes both _____ to contract.



HUMAN CIRCULATORY SYSTEM

Name _____

Starting from and ending with the right atrium, trace the flow of blood through the heart and body by numbering the following in the correct order.

- | | |
|------------------------|-----------------------|
| _____ right atrium | _____ lungs |
| _____ left atrium | _____ right ventricle |
| _____ pulmonary artery | _____ left ventricle |
| _____ vena cava | _____ body cells |
| _____ aorta | _____ pulmonary veins |

Starting from and ending with the heart, trace the blood flow through the human circulatory system by numbering the following in the correct order.

- | | |
|------------------|-------------------|
| _____ heart | _____ capillaries |
| _____ veins | _____ arteries |
| _____ arterioles | _____ venules |

What term best fits each of the following descriptions?

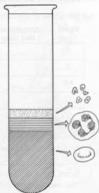
1. vessels which carry blood away from the heart _____
2. vessels which carry blood toward the heart _____
3. tiny blood vessels with walls that are only one cell thick _____
4. thick wall that divides the heart into two sides _____
5. upper chambers of the heart that receive blood _____
6. lower chambers of the heart that pump blood out of the heart _____
7. valve between right atrium and right ventricle _____
8. valve between left atrium and left ventricle _____
9. valves found between the ventricles and blood vessels _____
10. membrane around the heart _____
11. the only artery in the body rich in carbon dioxide _____
12. the only vein in the body rich in oxygen _____

THE BLOOD

Name _____

Label the following parts on the diagram of the right.

- white blood cell
- red blood cell
- platelet



Answer the questions below.

- What is the role of platelets? _____

- What are sickle cells? _____

- Why are they important? _____

Match the description in Column I with the correct term in Column II.

Column I

- iron-containing molecule in red blood cells
- white blood cells which produce antibodies
- liquid part of the blood
- returns tissue fluid to the blood
- cell fragments involved in clotting
- foreign molecules in the body
- cancer of the bone marrow
- condition in which the blood cannot carry sufficient oxygen
- strands of protein involved in clotting
- react with antigens and inactivates them

Column II

- _____ plasma
- _____ platelets
- _____ lymphocytes
- _____ antigens
- _____ fibrin
- _____ hemoglobin
- _____ antibodies
- _____ anemia
- _____ leukemia
- _____ lymphatic system

BLOOD TYPES AND TRANSFUSIONS

Name _____

Fill in the blanks on the table below. Then answer the questions.

Blood Type	Antigens on Red Cells	Antibodies in Plasma	May Donate To	May Receive From
A				
B				
AB				
O				

1. Why are individuals with blood type O considered universal donors? _____

2. Why are individuals with blood type AB considered universal recipients? _____

3. Today, some people who know they must undergo surgery in the near future give their own blood at the blood bank earlier. Then, they use it during surgery. Why?

The distribution of blood types around the world varies. For example, you would find it different in Japan, and among Basque people in northern Spain.

POPULATION	A	B	AB	O
U.S. Whites	39.7%	10.6%	3.4%	46.3%
U.S. Blacks	26.5%	20.1%	4.3%	49.1%
Native Americans	30.6%	0.2%	0.00%	69.1%

On the basis of the table, answer the following questions.

1. In the U.S., what is the most frequent blood type? _____
2. If you are an African American, what are the chances that your blood is type A?

3. What is the only population that has no representative with one blood type?

4. What blood type is this? _____
5. Compare the frequency of type B blood between white and black Americans.
