# Answers to Questions in the Workbook, Chapter 32, The Cardiovascular System

**Activity A MATCHING**

* 1. c. The plasma and the blood cells
  2. b. The liquid part of the blood
  3. a. Because hemoglobin turns bright red when combined with oxygen
  4. c. 5,000 to 10,000 white blood cells
  5. b. The process that stops the flow of blood from the circulatory system by forming a clot
  6. a. The tunica intima
  7. a. Masses of lymphatic tissue that “clean” the lymph by removing bacteria and other large particles
  8. c. A condition that occurs when damaged valves are unable to create a seal when they close, allowing blood to flow “backward”

**Activity B MATCHING**

1. c

2. f

3. a

4. e

5. d

6. b

**Activity C TRUE OR FALSE**

1. F. *Cardio* means “heart,” and *vascular* means “vessels.”

2. F. As the blood travels through capillary beds, giving off oxygen and taking on carbon dioxide, the number of oxygen molecules on the hemoglobin molecule decreases, and the blood becomes darker red in color.

3. T

4. F. The tunica intima is the smooth LINING of the blood vessel.

5. T

6. F. The SPLEEN helps to filter blood and break down worn-out red blood cells.

7. F. Because the VENTRICLES must send the blood much further with each contraction, they are larger than the atria, and have thicker, more muscular walls.

**Activity D JUMBLED WORDS**

1. Hemoglobin

2. Arterioles

3. Myocardium

**Activity E SPECIFY THE FUNCTION**

1. Albumin plays a role in moving fluid in and out of the bloodstream.

2. Fibrinogen is used as part of the blood-clotting process.

3. Some globulins help to fight infection.

4. Erythrocytes carry oxygen.

5. Leukocytes fight infection.

6. Platelets are responsible for clotting of the blood.

7. The lymphatic system helps to return the fluid that leaks into the tissues back into the bloodstream.

**Activity F IDENTIFY THE STATEMENT**

1. V

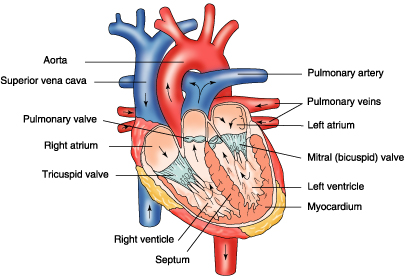
2. A

3. A

4. V

5. A

6. V

**Activity G LABEL THE FIGURE**  


**Activity H FILL IN THE BLANKS**

1. Valves are flaps of tissue that snap shut after the blood passes through to prevent backflow.

2. The tricuspid valve separates the right atrium from the right ventricle.

3. The mitral valve separates the left atrium from the left ventricle.

4. The pulmonary valve is located where the pulmonary artery leaves the right ventricle.

5. The aortic valve is located where the aorta leaves the left ventricle.

6. A type of infection called rheumatic fever can cause the valves to become thickened and scarred.

7. The electrical impulse travels through the myocardium via a special pathway called the conduction system.

**Activity I SHORT ANSWER**

Three major functions of the cardiovascular system are:

1. Transport: The cardiovascular system circulates oxygen, nutrients, and other necessary substances to the cells and takes waste materials away from them.

2. Temperature regulation: When a person gets too warm, the blood vessels in the dermis of the skin dilate, allowing more blood to flow close to the surface of the skin, cooling the body. When a person is too cold, the blood vessels in the dermis of the skin constrict, limiting the amount of blood that passes close to the surface of the skin, thereby helping to keep the body warm.

3. Protection: The blood contains white blood cells, which help to protect the body from infection. In addition, the blood has the ability to form a clot when injury to the skin occurs. The clot helps to protect us against excessive blood loss. It also helps to prevent microbes from gaining access to the body.

**Activity J MATCHING**

1. c

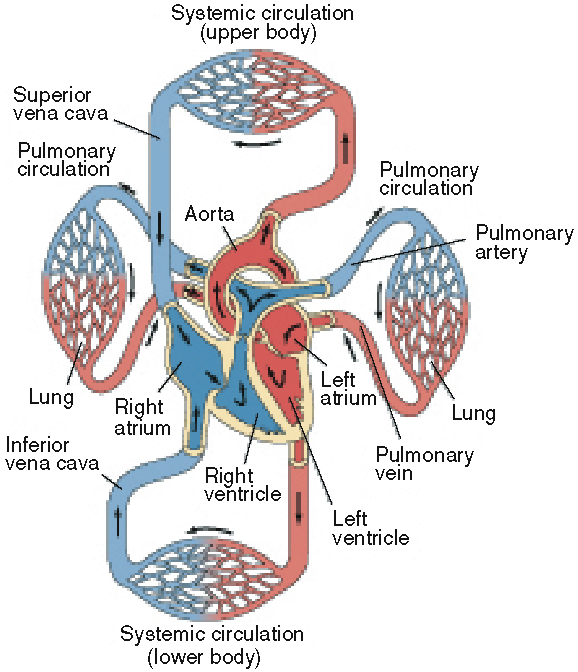
2. e

3. f

4. a

5. d

6. b

**Activity K MARK THE FIGURE**   


**Activity L TRUE OR FALSE**

1. T

2. F. While taking an apical pulse with a stethoscope, the first sound (“lubb”) is the sound of the tricuspid and MITRAL valves closing during ventricular systole.

3. T

4. F. The process of hemostasis helps to prevent microbes from gaining access to the body.

Activity M

Four factors that may cause the cardiovascular system to age faster are (1) smoking; (2) poor dietary habits; (3) lack of exercise; and (4) common chronic medical problems, such as obesity, hypertension, and diabetes.

**Activity N MULTIPLE CHOICE**

1. c. Smoking causes the arterioles and capillaries to constrict, depriving tissues of vital blood flow.

2. a. Changes in the tissues of the heart, such as a loss of muscle tone and a loss of elasticity

**Activity O SHORT ANSWER**

As we age, the walls of the blood vessels lose some of their elasticity. The loss of elasticity in the muscle layer of the arteries decreases the body’s ability to control blood pressure and flow. Since Mr. Clark is 65 years old and has a history of cardiovascular disease, his arteries might be losing elasticity. Without elastic vessels, his body cannot sense (and compensate for) the decrease in blood pressure that happens when he stands up. When the body does not react quickly enough to maintain adequate blood flow to the brain, the person may feel dizzy or lightheaded.

**Activity P CHOOSE THE RIGHT ANSWER**

1. X

2. X

3.

4. X

**Activity Q MULTIPLE CHOICE**

1. a. A clot can form in a small blood vessel causing the flow of blood to be impaired, depriving the tissues of oxygen and nutrients

2. c. To widen a narrowed portion of an artery to improve blood flow

3. a. The blood backs up in the lungs because the left ventricle’s ability to pump the blood into the systemic circulation is impaired.

4. b. By implanting a pacemaker, an electrical device that stimulates the heart to contract

**Activity R TRUE OR FALSE**

1. T

2. F. Leukemia can result from cancer of the bone marrow or cancer of the lymphatic tissue.

3. F. Smoking, eating a diet high in cholesterol and saturated fat, and a lack of physical activity can increase a person’s chances of developing atherosclerosis.

4. F. Disorders that cause the ventricles to lose muscle tone and become large and flabby can cause heart failure.

5. F. Heart BLOCK is a common type of dysrhythmia.

**Activity S MATCHING**

1. b

2. f

3. a

4. d

5. g

6. c

7. e

**Activity T FILL IN THE BLANKS**

1. A disorder that affects the bone marrow, where blood cells are made, can cause a decrease in the number of circulating red blood cells, leading to anemia.

2. The body needs iron in order to make hemoglobin.

3. Blood clots, called thrombi, can also break loose and travel to other parts of the body such as the brain, lungs, or heart.

4. People who have blood that clots too easily may need to take drugs called anticoagulants or “blood thinners” to help keep clots from forming where they are not needed.

5. Pain and cramping in the legs, called claudication, occurs because the muscles are not receiving enough oxygen.

6. Most heart disorders in children are congenital, which means that they were “present at birth.”

7. Heart failure occurs when the heart is unable to pump enough blood to meet the body’s needs.

**Activity U SHORT ANSWER**

1. A stroke

2. Myocardial infarction

3. Kidney (renal) failure

4. Peripheral vascular disease

**Activity V CHOOSE THE RIGHT ANSWER**

1.

2. X

3.

4.

5. X

6. X

7.

8. X

**Activity W MATCHING**

1. c

2. a

3. e

4. b

5. d

**Activity X CROSSWORD**

