

ASSIGNMENT SHEET**CHAPTER 11: ANATOMY AND PHYSIOLOGY OF THE HUMAN BODY****Unit 8: The Circulatory System****WORDS TO KNOW CHALLENGE****A. Word Search: Find the following words hidden in the puzzle.**

ADENITIS
 AMBULATE
 ANEMIA
 ANGINA
 AORTA
 ARTERIOLES
 ARTERY
 ATRIAL
 ATRIUM
 BICUSPID
 CAPILLARY

CARDIAC
 CORONARY
 DIASTOLE
 EXUDATE
 HEART
 HEMOGLOBIN
 INFARCT
 ISCHEMIA
 LEUKEMIA
 LYMPH
 MITRAL

MURMUR
 NODES
 PLASMA
 SPLEEN
 SYSTOLE
 TACHYCARDIA
 VAGUS
 VALVE
 VENTRICLE
 VENULE

A L E U K E M I A V E N U L E
 V N H E M O G L O B I N I W V
 A D E N I T I S C H E M I A E
 G N A M B U L A T E C T G C N
 U E R I I A T I N F A R C T T
 S X T T C A T C N G D N E S R
 S U O R A R O A T R I U M Y I
 C D O A R T E R Y D A N X S C
 O A T L E E R D T L S R A T L
 R T P Q B R V I C A T X R O E
 O E S I E I D A A H O P M L P
 N L U P L O C C L L L A U E A
 A O D Y L L R U P V E Y R Y R
 R E D A X E A R S C E P M E P
 Y L U E D S E R T P O A U P A
 P P L A S M A N Y H I R R Y H
 R E L T A C H Y C A R D I A P

B. Spelling: Each line contains four different spellings of a word. Underline the correctly spelled word.

- | | | | |
|----------------|-------------|-------------|-------------|
| 1. excelerator | axcelerater | accelerator | accelerater |
| 2. aneurysm | aneruism | anuryism | anurism |
| 3. bradycardia | bradycardea | bradecardia | bradycardia |
| 4. endecardium | endocardium | endocardeum | endecardeum |
| 5. erythrocyte | erithrocyte | erythrocite | erithrocite |
| 6. hemaglobin | hemoglobin | hemogloben | hemagloben |
| 7. eschemea | eschemia | ischemea | ischemia |
| 8. murmer | murrmur | murmur | murrmur |
| 9. myocardium | myocardeum | myacardium | myacardeum |

- | | | | |
|-----------------|-------------|-------------|-------------|
| 10. phlebitis | phlebitis | phlebitus | phlebitis |
| 11. tachycardea | tachycardia | tachicardia | tachicardea |
| 12. varecose | varicose | veracose | vericose |
| 13. arrhythmea | arrhythmia | arrhthmia | arrhthmya |

UNIT REVIEW

A. Short Answer

1. List the four major parts of the circulatory system.

- a. _____
- b. _____
- c. _____
- d. _____

2. What is the difference between pulmonary and systemic circulation? _____

3. Describe the heart sounds and what heart action causes the sound. Identify where the sounds may be auscultated.

Sound	Caused by	Where auscultated

4. Describe the location and action of the pacemaker. _____

5. Explain how the action of the pacemaker is related to the symptoms of heart block and fibrillation. _____

6. What is the basic cause of arrhythmia? _____

7. What purpose does an artificial pacemaker serve and how does it function? _____

8. Explain how the rate of the heartbeat is basically controlled. _____

9. How does a capillary bed function? _____

10. Trace the pathway of blood through the pulmonary and systemic circulation beginning at the vena cava, going to a capillary of the body, and returning to the atrium of the heart. Name the structures of the heart and lungs, and the major vessels. _____

11. From where does the blood in the portal circulation come? Where does it go, and why? _____

12. Name five things that blood transports through the body.
a. _____
b. _____
c. _____
d. _____
e. _____

13. What is plasma? List 17 things that can be found circulating in plasma. _____

a. _____ g. _____ m. _____
b. _____ h. _____ n. _____
c. _____ i. _____ o. _____
d. _____ j. _____ p. _____
e. _____ k. _____ q. _____
f. _____ l. _____

14. List the three types of blood cells, describing the basic function of each.
a. _____
b. _____
c. _____

15. Why is blood typed and crossmatched before being given to a patient? _____

16. Why is the Rh factor especially important with a pregnancy or a transfusion? _____

B. Matching

1. Match the cardiovascular tests in column I with the appropriate purpose for conducting it in column II.

COLUMN I	COLUMN II
_____ 1. Arteriograph	a. To evaluate cardiac function and structure, and to detect defects by means of sound waves
_____ 2. Cardiac catheterization	b. To detect irregularly occurring symptoms or evaluate status of a recovering cardiac patient
_____ 3. Doppler ultrasonography	c. Detects condition of deep veins of the legs, especially deep vein thrombosis
_____ 4. Echocardiograph	d. Injecting dye to indicate the status of blood flow, malformed vessels, aneurysm, or hemorrhage
_____ 5. Electrocardiograph	e. To evaluate major blood vessels to determine deep vein thrombosis, peripheral aneurysms, and occluded carotid arteries
_____ 6. Holter monitor	f. To identify heart rhythm, electrolyte imbalance, and conduction abnormalities
_____ 7. Venogram	g. To visualize by fluoroscope the internal heart structure and activity and to visualize the coronary arteries
_____ 8. MUGA scan	h. To determine condition of myocardium

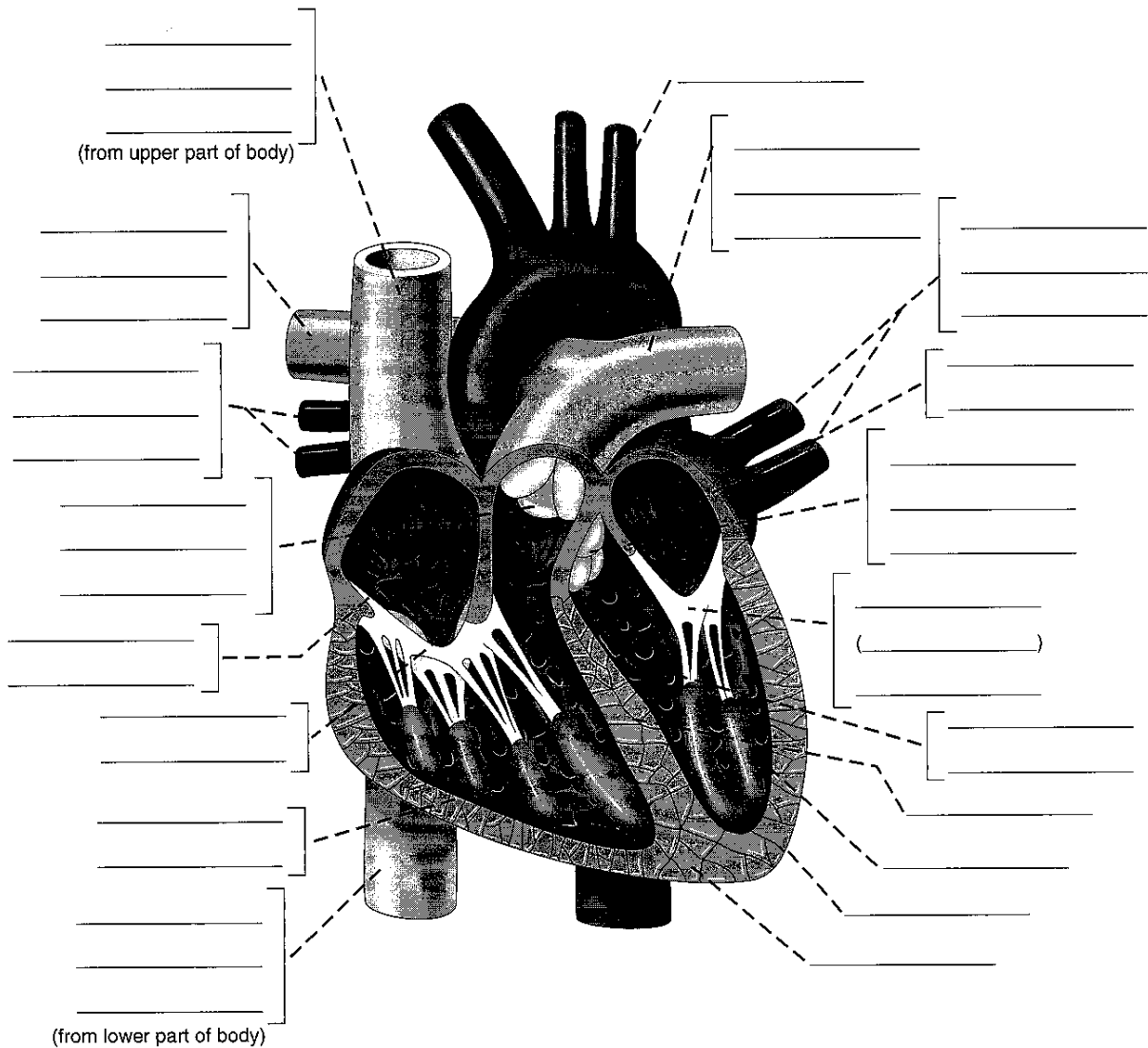
2. Match the major symptom or description in column II with the disease or disorder in column I.

COLUMN I	COLUMN II
_____ 1. Anemia	a. Sharp, sudden pain at sternum radiating to back of shoulders and arms; decreases when erect or leaning forward
_____ 2. Aneurysm	b. A circulating foreign substance in a blood vessel
_____ 3. Angina	c. Irregular heart rhythm
_____ 4. Arrest	d. Fatty deposits on the lining of blood vessels
_____ 5. Arrhythmia	e. Severe chest pain from a coronary artery spasm
_____ 6. Arteriosclerosis	f. Pounding heartbeats after exercise, enlarged heart, slow pulse
_____ 7. Atherosclerosis	g. Blood pressure consistently above normal
_____ 8. Athletic heart syndrome	h. Congestion of blood in the circulatory system; edema of extremities and lungs
_____ 9. CVA	i. Tightness of chest, substernal chest pain radiating down left arm, nausea and vomiting, perspiration, fainting
_____ 10. CHF	j. Lack of red blood cells and/or hemoglobin
_____ 11. Coronary artery disease	k. Rigid arterial walls; causes hypertension
_____ 12. Embolus	l. Confusion, weakness of one side, visual changes, paralysis, personality change
_____ 13. Endocarditis	m. A bulging arterial wall that may produce palpitations or tear
_____ 14. Hypertension	n. Complete and sudden cessation of heart action
_____ 15. Hypotension	o. Mild chest soreness, fever, dyspnea, palpitations, feeling of pressure
_____ 16. Leukemia	p. Vegetative growths or inflammation of inner heart structures
_____ 17. Murmur	q. Abnormally shaped red blood cells, enlarged liver, pallor, painful crisis periods
_____ 18. MI	r. Skin breakdown from inadequate circulation
_____ 19. Myocarditis	
_____ 20. Pericarditis	
_____ 21. Phlebitis	
_____ 22. Sickle cell anemia	
_____ 23. Stasis ulcer	
_____ 24. Thrombophlebitis	
_____ 25. Varicosities	

- s. Excessive WBCs, bruising, fatigue, painful lymph nodes
- t. Inflamed vein lining with thrombus formation, severe pain, fever, chills, and discoloration of involved extremity
- u. Dilated, twisted veins, inefficient valves, leg cramps
- v. A gurgling or swishing sound heard upon auscultation of the heart
- w. Localized inflammation of a vein
- x. Severe, crushing pain radiating through chest to neck and jaw and down left arm; nausea, dyspnea
- y. Consistently low blood pressure

C. Label the Illustration

Label the following structures of the heart on the illustration below: apex, right atrium (auricle), left atrium (auricle), right ventricle, left ventricle, aorta, pulmonary semilunar valve, tricuspid valve, inferior vena cava, septum, bicuspid (mitral) valve, aortic semilunar valve, right pulmonary artery, left pulmonary artery, right pulmonary veins, left pulmonary veins, superior vena cava, endocardium, and myocardium. Refer to Figure 11-120 in the textbook.



D. Fill in the Blank

The lymphatic system consists of lymph vessels, which are located throughout the body. Lymph capillaries absorb _____ and other substances and return them to the circulatory system. The system is a(n) _____ system; there are no vessels bringing _____ to the _____. The capillaries join to become _____, which in turn become larger vessels called _____. The lymphatics eventually form two main _____, a _____ duct and a _____ duct. _____ are located along lymph vessels at various places in the body. During an infection, the nodes become _____ and _____ because of the collection of lymphocytes.

E. Make a table of blood vessels in the order in which blood would flow from the heart and back. List the five types of blood vessels, describing the structure and explaining the function of each type.

TYPE	STRUCTURE	FUNCTION
a. _____	_____	_____
b. _____	_____	_____
c. _____	_____	_____ _____ _____
d. _____	_____	_____
e. _____	_____	_____ _____ _____

CASE STUDIES

Scenario 1

A male patient who has angina calls to report that he has been experiencing fairly severe chest pains off and on for the past few hours. He says he is perspiring and has had constant pain for the last 20 minutes, which has not been relieved by the three nitroglycerin tablets he has taken. Unfortunately, the physician is not in right now so you need to decide what to do.

Critical Thinking Questions

1. Why should you determine if he is home alone? _____

2. How can you tell him what you expect may be happening? _____

3. Why should you call for emergency services? _____

Scenario 2

A female patient has been under treatment for two years for hypertension. She has lost 50 pounds and is getting regular exercise as well as watching her diet. Last time she was in the office, about three months ago, her blood pressure was normal and had been for about six months. Today it is elevated again, she has gained 15 pounds, and the patient states that she thought she was cured.

Critical Thinking Questions

1. Why could maintaining her weight be a factor? _____

2. Why would determining if she is continuing to watch her intake of fats and sodium be important? _____

3. What else could cause an elevation in her blood pressure? _____

UNIT APPLICATION

Terminology practice and blood flow observation

- A. Learn the terminology. Choose a lab partner. Each of you choose 10 words to use to play hangman. Alternate turns and do not repeat terms; select additional words as needed.
- B. Observe blood flow. With a partner, observe the back of your hands or the inner surface of your wrist for visible blood vessels. Observe male students in the class as often the inner surface of the forearm is a great site in men. You are going to be observing blood flow and deciding if the vessel is an artery or a vein. You will also look for branching vessels that allow blood to flow to a nearby vessel when you obstruct flow.
1. Using your partner's hand, wrist, or forearm, put pressure on the proximal ends of the visible blood vessels. With the fingers of the other hand, press and slide the fingers distal to the point where the blood flow is shut off.
 - a. Observe and explain what happens and why.
 2. Now put pressure at the distal end and slide the fingers toward the body.
 - a. Observe and explain what happens and why
 - b. Did you detect branching vessels? What happened to maintain blood flow?

3. Why did the vessels stay empty when you did exercise 2? Were they arteries or veins?
4. What happens when you release the pressure?

CERTIFICATION AND REGISTRATION PREPARATION

- _____ 1. Cholesterol is:
 - a. a by-product of fat metabolism in the blood
 - b. caused by being overweight
 - c. developed from a lack of exercise
 - d. due to decreased blood flow in the arteries
- _____ 2. Triglycerides:
 - a. are common with diabetes
 - b. is believed to contribute to the thickening of arterial walls
 - c. are beneficial in high levels
 - d. are a combination of three fats high levels
- _____ 3. A heart catheterization can:
 - a. Permit visualization of the coronary arteries.
 - b. Measure the amount of oxygen in the heart
 - c. Remove blood for analysis
 - d. Accurately measure electrical activity of the heart
- _____ 4. The Dobutamine stress test:
 - a. is done on a treadmill
 - b. uses a drug to stress the heart
 - c. allows visualization of the coronary arteries
 - d. requires instillation of a radioactive material and a special camera
- _____ 5. The Doppler ultrasound:
 - a. can diagnose coronary artery disease
 - b. determines leaking heart valves
 - c. measures cardiac output
 - d. evaluates disease in major blood vessels
- _____ 6. Arrhythmia is a term that can mean any of the following except:
 - a. absence of heartbeat
 - b. a rhythm with extra beats
 - c. a rhythm with missed beats
 - d. the presence of delayed beats
- _____ 7. Atherosclerosis is the:
 - a. replacement of muscular artery tissue by fibrous tissue and calcification
 - b. presence of fatty deposits on the artery lining
 - c. scarring of the arterial lining
 - d. thickening of the lining of the arterial wall
- _____ 8. A cerebrovascular accident is not caused by:
 - a. high blood pressure rupturing an artery
 - b. atherosclerosis occluding an artery
 - c. a thrombus that clogs an artery
 - d. an accidental injury to the cerebral artery
- _____ 9. A heart murmur is:
 - a. an additional flutter of the heart valves
 - b. a soft, barely audible extra heartbeat
 - c. a sound caused by inadequate blood flow
 - d. an abnormal sound of blood flowing through a closed valve
- _____ 10. What will most likely contribute to death when an MI occurs?
 - a. Taking an aspirin tablet
 - b. Waiting to see if the symptoms improve
 - c. Taking a dose of nitroglycerin
 - d. Taking a strong pain medication