

Chapter 10

Word Definitions

1. Anticoagulant—substance that delays or prevents coagulation of blood
2. Antipyretic—medication that reduces fever
3. Arteritis—inflammation of an artery
4. Atheroma—abnormal mass of fat; fatty tumor
5. Bronchodilator—medication that relaxes the bronchioles allowing them to dilate
6. Carditis—inflammation of the heart muscle (myocardium)
7. Endocarditis—inflammation of the endocardium and heart valves of the heart
8. ESR—erythrocyte sedimentation rate
9. Gingival—pertaining to the gums
10. Hyperlipidemia—elevated lipids in the blood
11. Leukocytosis—increase in the normal white blood cell count; above 10,000/cm of blood.
12. Polyarthritis—inflammation that involves more than one joint
13. Polycythemia—increase in the normal red blood cell count; above 6.2 million/mm³ in males and 5.4 million/mm³ in females
14. Serous—pertaining to, resembling, or producing serum
15. Transdermal—route of administering medication through the skin

Glossary Terms

1. Aggregation—coming together of substances (e.g., platelets, blood cells, diseases)
2. Anaphylaxis—severe systemic allergic response characterized by redness, itching, swelling, and water buildup (angioedema); in severe cases, life-threatening

respiratory distress occurs, and the blood pressure drops rapidly (anaphylactic shock)

3. Angina pectoris—paroxysmal chest pain, which often radiates to the arms and may be accompanied by a feeling of suffocation and impending death; the most common cause is a shortage of oxygen to the cardiac muscle linked with coronary artery disease
4. Angiotensin-converting enzyme—enzyme found on the surface of blood vessels in the lungs and other tissues with vasopressor action
5. Antibodies—immunoglobulins that may combine with specific antigens to destroy or control them
6. Arrhythmias—variations or loss of normal rhythm of the heartbeat
7. Blood gas—gases present in the blood that are a result of the use of oxygen and the production of carbon dioxide during metabolism; the blood is analyzed for evidence of deviations (acidosis or alkalosis) from normal levels
8. Bruit—abnormal sound heard in auscultation
9. Collateral—small side branch of a blood vessel or nerve
10. Commissurotomy—surgical incision of component parts at the sites of junction between adjacent cusps of the heart valves to increase the size of the opening
11. Diuretics—increased formation and excretion of urine
12. Doppler—ultrasonographic technique used to evaluate blood flow velocity
13. Gangrene—death of tissue caused by a decrease or absence of blood supply
14. Hematocrit—percentage of the total blood volume consisting of erythrocytes
15. Idiopathic—disease without a known or recognizable cause

16. Opacity—state of being opaque or not transparent
17. Perfusion—delivery of oxygen and other nutrients to the tissue by the blood
18. Petechiae—tiny spiderlike hemorrhage under the skin
19. Plaque—deposit of hardened material lining the blood vessel or a gummy accumulation of microorganisms that clings to teeth and is considered the forerunner of caries and periodontal disease
20. Prophylactic—prevention of disease
21. Purpura—red-purple discoloration of the skin caused by multiple minute hemorrhages in the skin or mucous membrane
22. Rales—abnormal crackling sounds made by the lungs during inspiration; indicative of fluid in a bronchus
23. Sclerosing—hardening of a body part
24. Syncope—fainting, lightheadedness
25. Tamponade—compression of a part by pressure or a collection of fluid

Short Answer

1. 5
2. Angina pectoris
3. Genetic predisposition, older than 40 years of age, men, postmenopausal women, and Caucasians
4. Injections of DNA directly into the cardiac muscle
5. Left-sided chest pain after exertion. The pain may radiate to the left arm or back.
6. Transdermal
7. 65%

8. CPR, defibrillation
9. Hypertensive heart disease
10. Headaches, epistaxis, lightheadedness, syncope
11. No
12. Echocardiogram
13. Right
14. Cold and clammy
15. Vegetative
16. Prophylactic antibiotics
17. Any of the 4 heart valves
18. Group A beta hemolytic streptococcus
19. Valve replacement
20. Chest pain, dyspnea, dizziness, fatigue, syncope, severe anxiety
21. Patient symptoms of feeling abnormal heartbeats, 12-lead electrocardiograph (ECG)
22. Myocardium
23. Insult to the integrity of a vessel in the pericardium
24. Atherosclerosis, Monckeberg's arteriosclerosis, arteriosclerosis
25. Atherosclerosis
26. Red blood cells, white blood cells, platelets, plasma
27. Abnormal destruction of the red blood cells
28. By the cell type and the degree of the differentiation of the neoplastic cells
29. Acute myelocytic leukemia

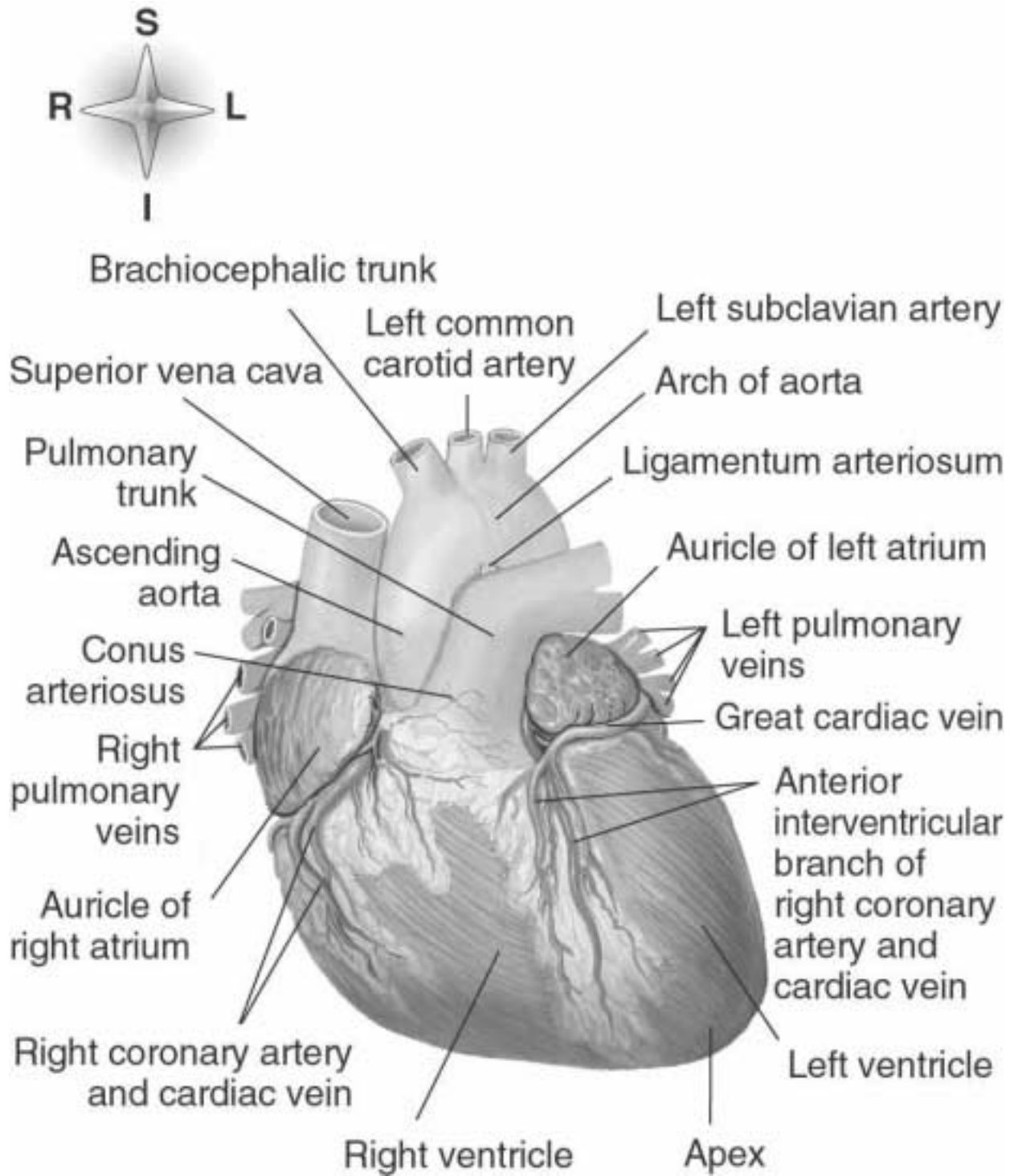
30. Painless enlargement of the lymph nodes in the neck or mediastinum, fatigue, alcohol-induced pain, pruritis

Fill in the Blanks

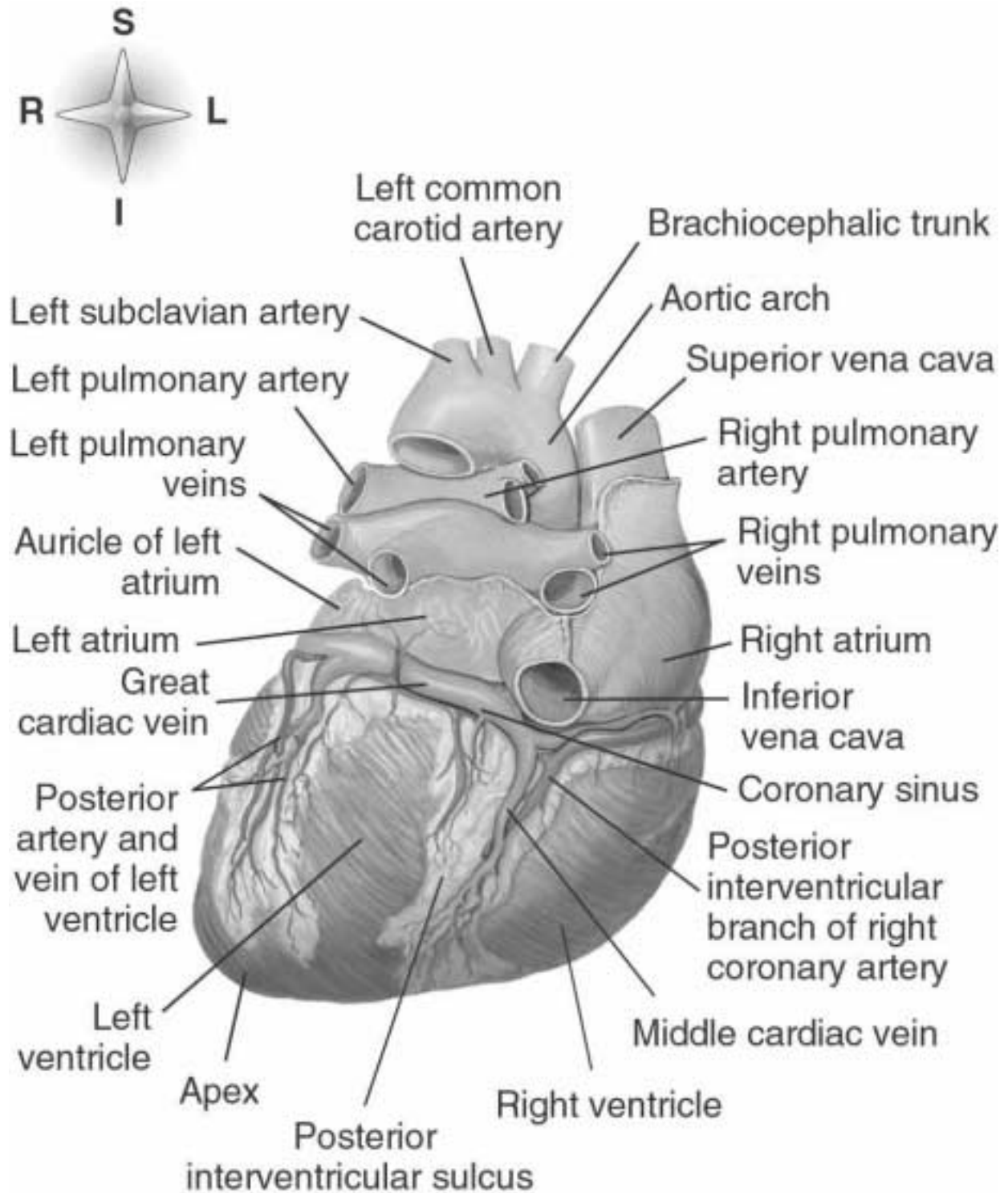
1. atria, ventricles
2. striated muscle cells
3. oxygen supply, artery, thrombus, muscle
4. 4, 6, cardiac
5. blood pressure readings, first
6. dyspnea, coughing, increased, rates, bloody
7. bacteria
8. heart disease
9. plaque, lumen
10. artery
11. fluid, extravascular
12. Congestive heart failure (CHF), dyspnea, fatigue, tachycardia, palpitations, chest
13. viral, fungal
14. insufficiency, stenosis
15. interference, conduction, abnormality

Anatomic Structures

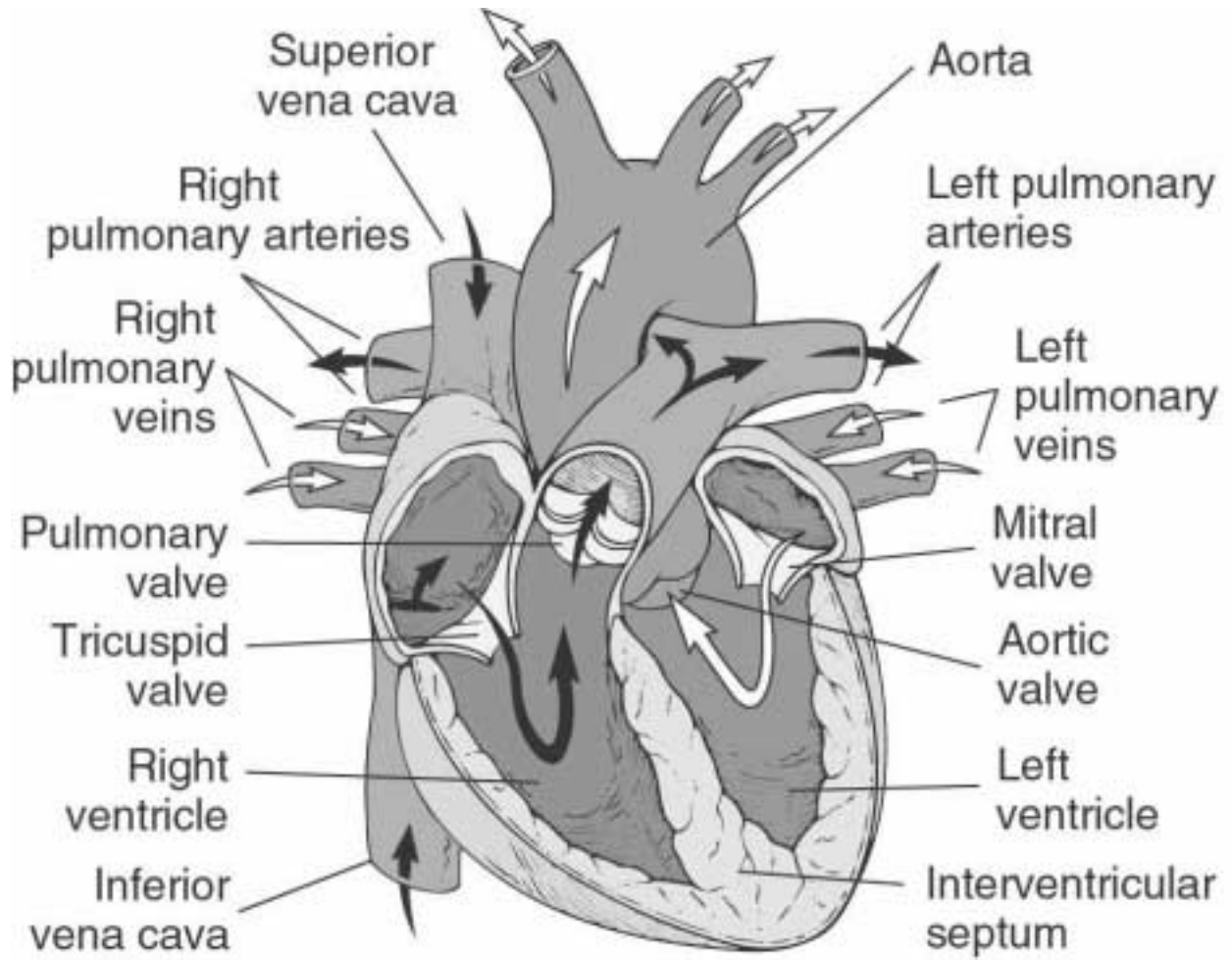
1. Anterior view of the heart and great vessels



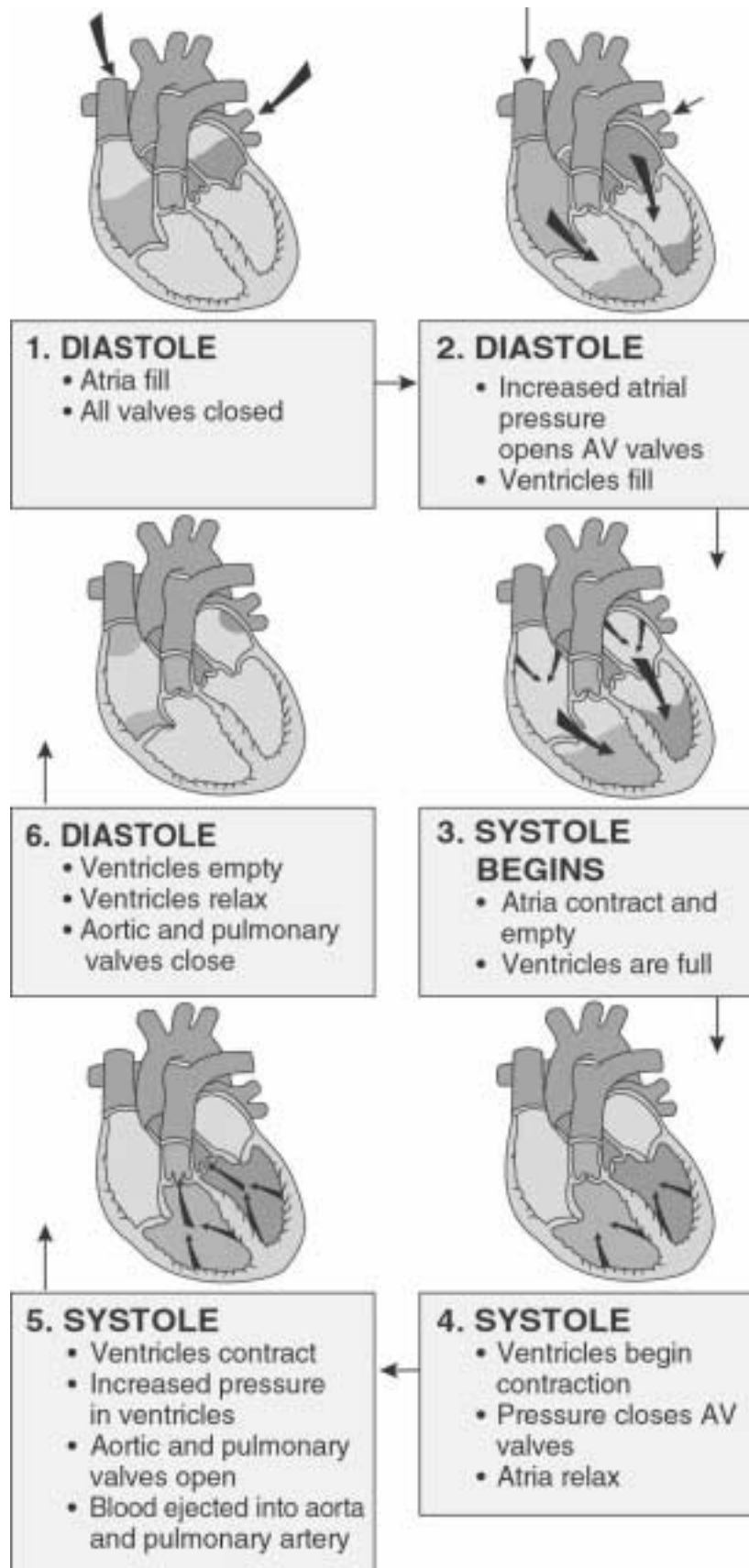
2. Posterior view of the heart and great vessels



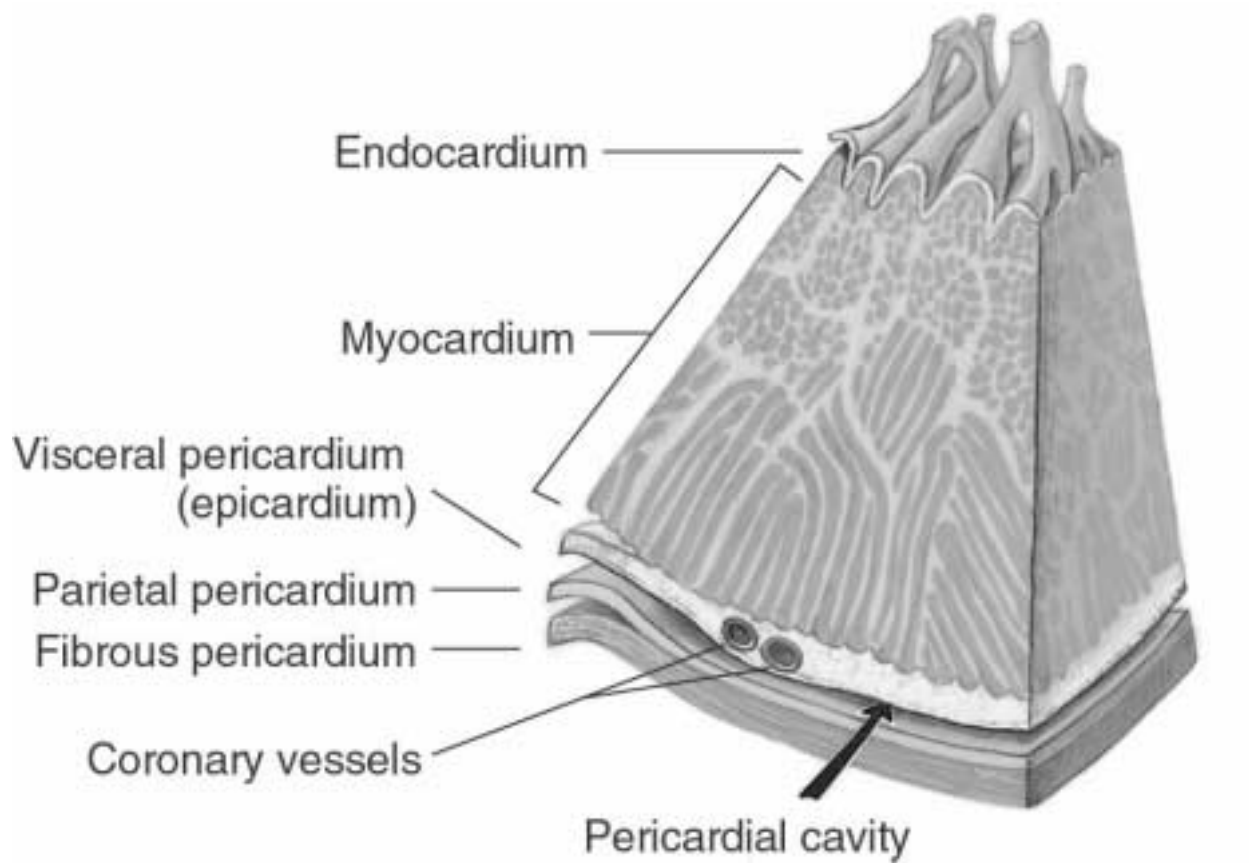
3. Circulation through the heart



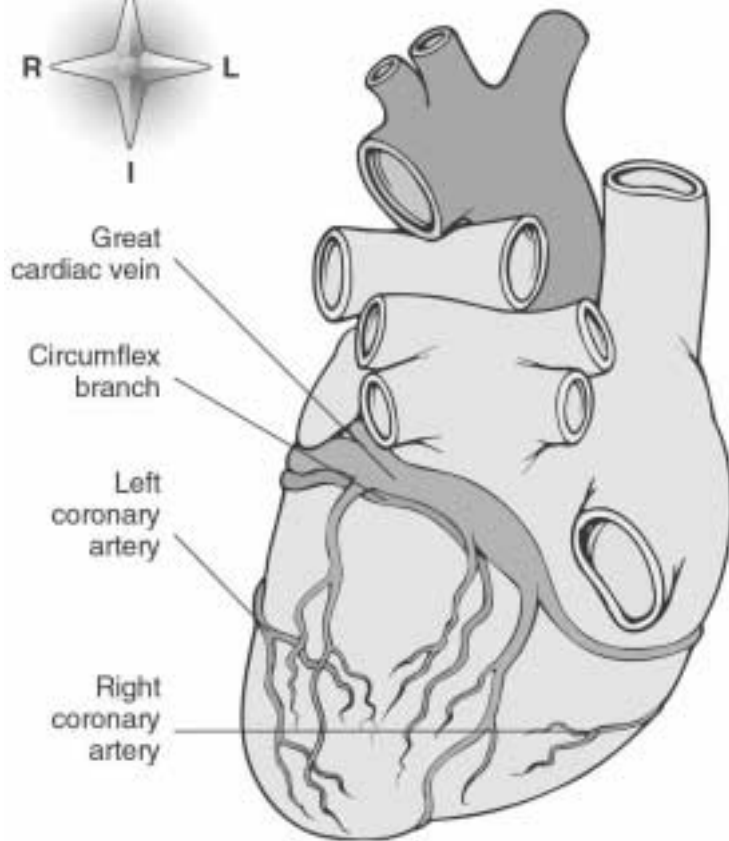
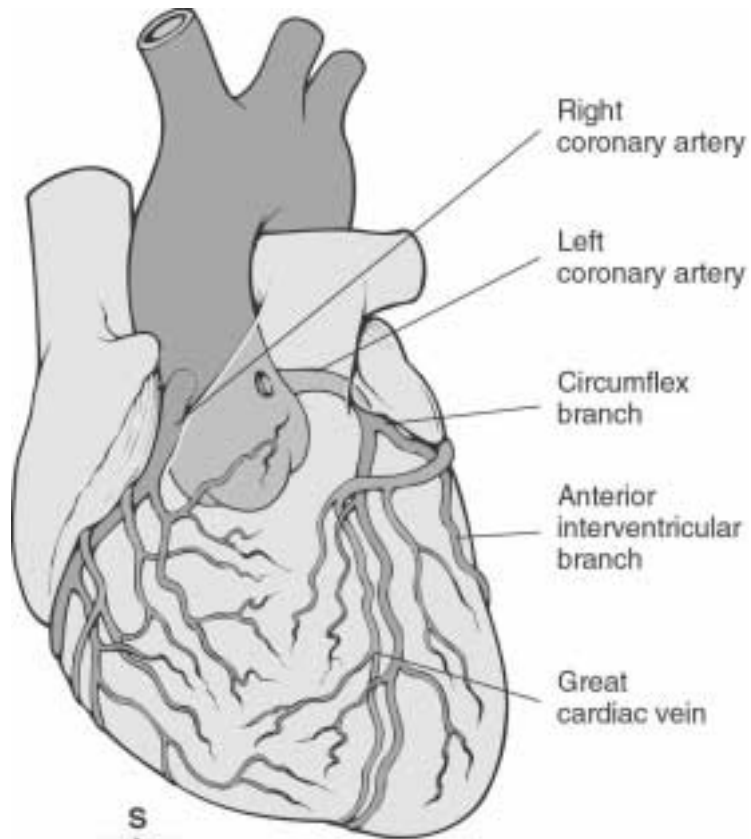
4. Cardiac cycle



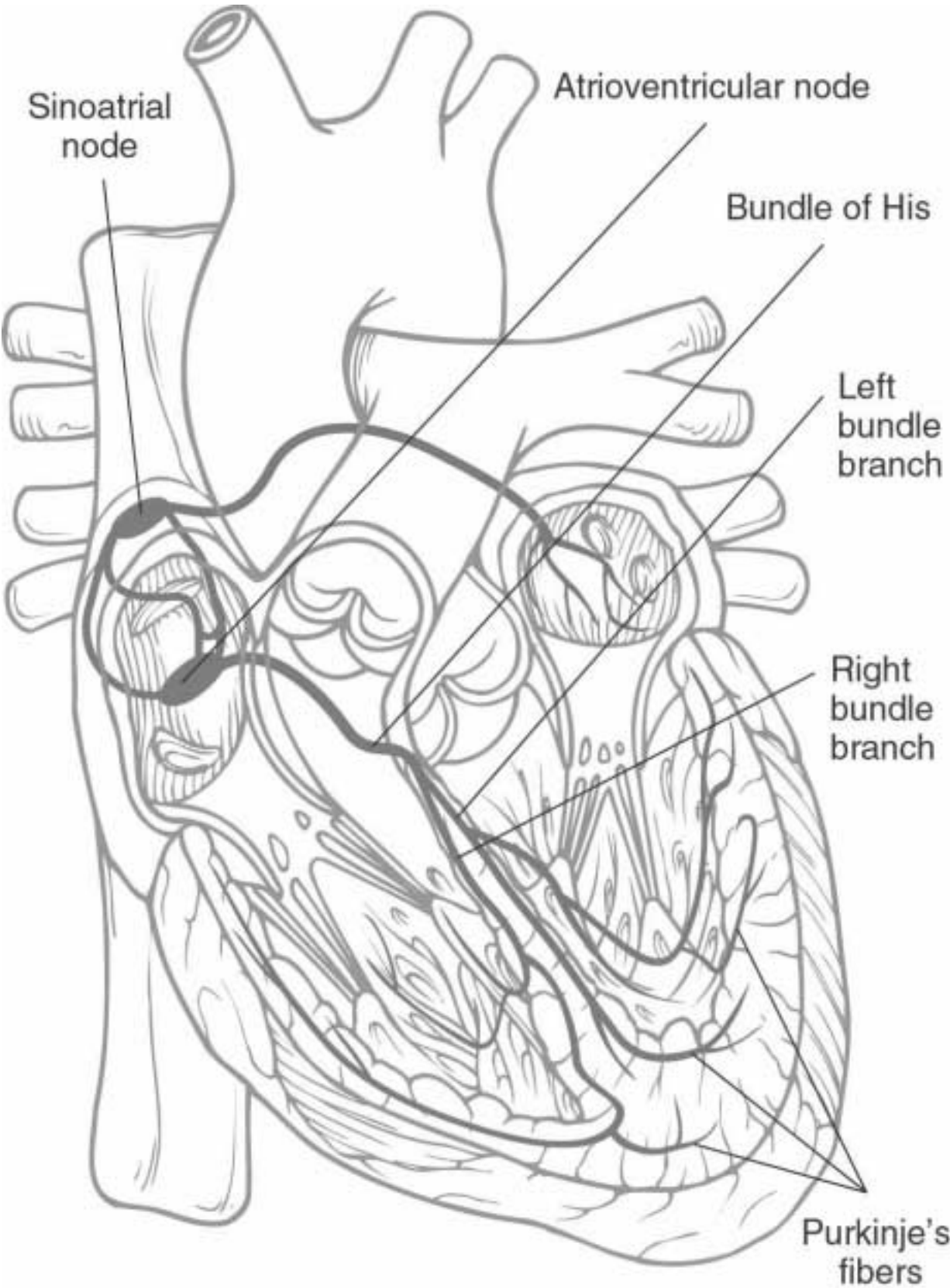
5. Layers of the heart wall



6. Coronary arteries



7. Conduction system of the heart



Suggested Responses for Patient Screening

1. Possible angina pectoris

The pain stopped when the strenuous activity ceased and the nitroglycerin tablets were used. This patient should be scheduled for an examination on the day of the call. Patients experiencing symptoms of angina for the first time require immediate assessment. Sudden onset of chest pain could be a life-threatening situation, and acute myocardial infarction must be ruled out. For those who have been diagnosed with angina pectoris, it is best to be cautious. When a cessation of activity and the use of vasodilating medications do not provide relief from the pain within a 20-minute time frame, these individuals require immediate medical intervention through the Emergency Medical System (EMS).

2. Possible hypertension

The patient may be seeking an appointment for a headache. She also recently had a blood pressure reading at the pharmacy and thinks she should see the physician to report the elevated reading. She should be scheduled for the next available appointment, preferably on the day of or the day after the call. Likewise, patients with a history of essential hypertension requesting an appointment for any hypertensive-related symptoms should be scheduled the day of the call or the day after.

3. Possible CHF

Patients reporting unexplained chest discomfort, shortness of breath, or swelling of limbs require prompt medical assessment. If possible, schedule for immediate

appointment. When an immediate appointment is not available, refer the patient to an emergency facility for prompt treatment.

4. Possible phlebitis

Patients reporting swelling, redness, warmth, and pain in a limb require prompt assessment by a physician.

5. Possible anemia

The individual reporting dyspnea, tachycardia, and a “pounding” heart requires prompt assessment by a physician. Those reporting they are pale and “just plain tired” should be scheduled at the next available appointment.

Patient Teaching

1. Coronary artery disease (CAD)

The written information contains advice regarding symptoms of impending myocardial infarction and encourages patients to seek immediate emergency medical intervention at the first indication of any related symptoms. The printed information is available for all patients regarding the prevention or control of CAD, and it reinforces the importance of low fat diet, weight control, exercise, and cessation of smoking. Encourage follow-up cholesterol blood tests. Inquire whether the patient understands the information as reviewed.

2. CAD

Reinforce to the patient that this condition is not cured but only controlled by drug therapy, and continuation of the therapy is essential. Education reinforces the necessity of monitoring the blood pressure on a regular basis and the need to

continue drug therapy for life. Review the printed material with the patient and inquire whether they understand what it says.

3. CHF

Using printed instructions, reinforce what the physician has already told the patient and family. Help the patient and family to be aware that a primary goal is promoting good patient compliance with the medical treatment plan. Explain that many patients experience a quick improvement in symptoms when medications are taken as prescribed, dietary instructions are followed, and activities are modified to allow required rest and the avoidance of fatigue. The use of diuretics requires they monitor their weight on a daily basis. Instruct them to record the daily weights.

4. Atherosclerosis

Using the printed material, stress the importance of following dietary recommendations along with prescribed exercise. If the patient is a diabetic, explain the need to keep blood glucose levels in normal range. Inform those who smoke about the dangers of smoking in regards to their health. Provide information regarding resource agencies where patients may obtain additional facts about the condition, as well as support groups in the community.

5. Raynaud's phenomenon

Using the printed information, reinforce the instructions the physician has given the patient. Provide patients with information about the effect of smoking on the blood vessels in their condition. Also encourage them to avoid direct skin

exposure to extreme cold, and to wear gloves, heavy socks, and warm shoes to provide protection to fingers, hands, feet, and toes.

Essay Question

Describe the laboratory tests that are used to confirm a diagnosis of acute lymphocytic leukemia (ALL).

A peripheral blood smear must be prepared and stained. A decrease in the normal numbers of erythrocytes and platelets will occur, as well as an increase in the number of immature lymphocytes. Bone marrow must be aspirated, or a biopsy will also need to be done. To confirm the diagnosis, blasts cells should make up more than 30% of the total nucleated cells in the bone marrow. The physician may want to withdraw cerebral spinal fluid to examine it for leukemic cells. Any abnormalities that may have significance in determining prognosis and treatment options can be identified by performing a karyotype. After treatment begins, laboratory work is frequently performed to determine whether the laboratory values are shifting back to normal limits.

Certification Examination Review

1. a
2. c
3. c
4. a
5. b
6. c
7. b
8. c

- 9. b
- 10. d
- 11. c
- 12. a
- 13. a
- 14. b
- 15. c