

# Lecture Exam 3 Objectives

## Performance Objectives

Upon completion of this unit the student should be able to achieve the following performance objectives.

Utilize a vocabulary containing the following terms:

agglutination	elastance	lymphedema
AIDS	embolus	murmur
angina pectoris	erythropoiesis	myocardial infarction
atherosclerosis	hematocrit	pacemaker
carotid body	heparin	pulse
complement	hypoxia	spirometer
compliance	interferon	surfactant
diapedesis	leukemia	thrombus

1. Describe the functions of the cardiovascular system.
2. Describe the formed elements of the blood and describe the functions of each. Identify the correct terminology for abnormal laboratory values for each formed element including: anemia, polycythemia, leukocytosis, leucopenia, thrombocytosis, and thrombocytopenia.
3. List the major plasma components and their functions.
4. Compare the compositions of plasma and serum.
5. State the functions of hemoglobin, serum globulins, and serum albumins.
6. Explain the steps involved in the clotting of blood, using the following terms: platelets, platelet factors, thromboplastins, prothrombin, thrombin, fibrinogen,  $Ca^{2+}$ , and vitamin K. Differentiate between intrinsic and extrinsic pathways.
7. State the location of the antigens and antibodies in the ABO and Rh blood types. Explain the meaning of the following blood types: A, B, AB, and O, as well as, the positive or negative designation for the Rh antigen. Identify the blood types that are known as universal donor and universal recipient and explain why these blood types have these designations.
8. Identify two ways that Rh incompatibility can occur. Explain the condition that can result in the development of erythroblastosis fetalis.
9. Describe the location and structure of the heart.
10. Describe the path of a drop of blood from the superior vena cava or inferior vena cava through the heart out of the aortic arch, listing all chambers, valves, and vessels involved.
11. State the function of the atria, valves, chordae tendinea, papillary muscles, and ventricles of the heart.
12. Describe the component and function of the intrinsic cardiac conduction system.
13. Trace an impulse through the conduction system of the heart.
14. Diagram and describe a typical ECG/EKG pattern and relate it to pressure changes and heart sounds.
15. Identify the area of the CNS concerned with cardiovascular regulation.

16. Describe factors which regulate heart rate, including baroreceptors and the autonomic nervous system. Describe the heart rhythm using the following terms: asysole, fibrillation, tachycardia, bradycardia, and ectopic.
17. Describe events occurring during systole and diastole.
18. Compare and contrast the structure of an artery, arteriole, vein, venule, and capillary.
19. Discuss the structure and function of a capillary network.
20. Discuss how arterial blood pressure is influenced by cardiac output, stroke volume, and peripheral resistance.
21. Explain the measurement of blood pressure correctly identifying the systolic and diastolic pressures.
22. Describe the fetal circulatory system and the changes which occur in it following birth.
23. Describe the structure and importance of the hepatic portal system, including the unique content of blood passing through the hepatic portal vein.
24. Describe the functions of the lymphatic system and the primary lymphatic structures.
25. Describe the mechanism involved in the movement of lymph.
26. Describe the functions of the spleen.
27. Briefly describe the structures and functions of the immune system and distinguish between antigens and antibodies.
28. Describe the body's three lines of defense against pathogens.
29. Describe the process of inflammation and explain what causes the four cardinal signs of inflammation.
30. Compare and contrast cellular and humoral immunity.
31. Differentiate between active and passive immunity.
32. Describe the function of memory cells in the immune response.
33. Explain an allergic reaction and anaphylaxis.
34. Explain the meaning of an autoimmune disorder.
35. Describe the functions of the respiratory system.
36. Follow the flow of air from the nasal cavities to the alveoli, identifying every structure through which the air passes.
37. Discuss the mechanism of breathing and outline the sequence of events and pressure changes for normal quiet inspiration and expiration. Stress the differences between atmospheric and alveolar pressures during breathing.
38. Discuss the primary factors that influence the respiratory control center and its control of respiratory rate and depth.
39. Identify the primary stimulus for breathing.
40. Describe the Hering-Breuer reflex.
41. Describe the manner and forms in which  $O_2$  and  $CO_2$  are carried in the blood.
42. Describe the principle of partial pressures of gases and its importance in explaining gas movements between alveoli and blood.
43. Discuss gas exchange in the tissues between capillary blood and the cells.
44. Discuss gas exchange in alveoli between the capillary blood and the alveoli.
45. Describe the effect of increasing blood  $P_{CO_2}$  on blood pH.
46. Discuss the oxygen dissociation curve and effects of pH,  $P_{CO_2}$ , and temperature on the curve.
47. Describe the characteristics of the following type of respiration: apnea, dyspnea, tachypnea, bradypnea, and Cheyne-Stokes.