

REVIEW EXAM 3

Please answer the following questions. These questions are meant to help you test your knowledge of the subject matter. Do *not* send your answers to the school.

LESSON 3 – CHAPTERS 8, 9, 10

CHAPTER 8 – CARDIOVASCULAR SYSTEM

- The heart muscle is called the
 - endocardium
 - pericardium
 - epicardium
 - myocardium.
- At what level is the heart in horses and ruminants?
 - Between the third and fourth ribs
 - Between the second and sixth rib
 - Between the second and third rib
 - Between the third and seventh rib
- Which valves close during systole?
 - Right atrioventricular and pulmonary
 - Left atrioventricular and right atrioventricular
 - Left atrioventricular and aortic
 - Aortic and pulmonary
- Where does blood that's just been oxygenated in the lungs flow next?
 - Left atrium
 - Right atrium
 - Right ventricle
 - Left ventricle
- What part of the heart is in the tip of the apex?
 - Left atrium
 - Right ventricle
 - Right atrium
 - Left ventricle
- Which compartment of the heart has the thickest wall?
 - Right atrium
 - Left atrium
 - Right ventricle
 - Left ventricle

7. Which valve has two flaps?

- a. Mitral
- b. Pulmonic
- c. Aortic
- d. Tricuspid

8. Which statement is true?

- a. The base of the heart is at the bottom, where the ventricles are found.
- b. The pulmonary artery is the site of the highest blood pressure of any vessel.
- c. The apex points in a caudal and ventral direction.
- d. The mitral and tricuspid valves open during systole.

9. Which of the following statements is *false*?

- a. Cardiac depolarization corresponds to systole.
- b. Cardiac repolarization corresponds to diastole.
- c. Like batteries, the SA node is unable to automatically repolarize itself.
- d. Skeletal muscle only contracts when it receives an electrical message from nerve tissue.

10. What are the specialized fibers in the ventricles that conduct electrical impulses?

- a. Purkinje fibers
- b. SA node fibers
- c. Bundle of His
- d. Both a and c

11. The pulmonic and aortic valves close when pressure in the

- a. ventricles drops lower than the pressure in the arteries they supply.
- b. ventricles drops lower than pressure in the atria.
- c. atria drops lower than pressure in the ventricles.
- d. ventricles rises higher than the pressure in the aorta and pulmonic artery.

12. What's the name of the connection between the right and left atria in the fetus?

- a. Ductus arteriosus
- b. Ductus venosus
- c. Pulmonary arteriosus
- d. Foramen ovale

13. Closing of the semilunar valves corresponds to which of the following?

- a. S1
- b. S3
- c. S4
- d. S2

14. Which valve is easiest to hear on the left side of the thorax as it exits the right ventricle?

- a. Pulmonic
- b. Aortic
- c. Mitral
- d. Tricuspid

15. The heart beating more forcefully is called

- a. spontaneous depolarization.
- b. positive inotropy.
- c. stroke volume.
- d. spontaneous repolarization.

16. What are the effects of Starling's law on the heart?

- a. Increased stroke volume
- b. Increased cardiac contraction
- c. Increased stretching of ventricular walls
- d. All of the above

17. Which of the following happens to the heart of a racehorse during a race?
- a. Increased heart rate
 - b. Increased stroke volume
 - c. Increased cardiac output
 - d. All of the above
18. Which of the following occurs in the animal that's in shock?
- a. Increased preload
 - b. Increased blood pressure
 - c. Decreased systolic pressure
 - d. Decreased heart rate
19. Which of the following parameters might be seen in the scared cat undergoing a physical exam?
- a. Increased heart rate
 - b. Decreased blood pressure
 - c. Increased stroke volume
 - d. Both a and c
20. What does the T wave represent on the electrocardiogram?
- a. Depolarization of the atria
 - b. Repolarization of the ventricles
 - c. Repolarization of the atria
 - d. Depolarization of the ventricles

CHAPTER 9 – BLOOD, LYMPH, AND IMMUNITY

1. Which of the following statements describes the function of blood?
- a. Blood transports hemoglobin to the site of a damaged blood vessel so that a clot can form.
 - b. Blood maintains a pH of approximately 7.35 to 7.55.
 - c. Red blood cells provide defense from foreign invaders through phagocytosis.
 - d. Plasma leaves the blood stream and enters body tissues if there's a fluid loss.
2. What makes erythrocytes red?
- a. Hemoglobin
 - b. Bilirubin
 - c. Oxygen
 - d. Nitrogen
3. What makes plasma yellow?
- a. Hemoglobin
 - b. Bilirubin
 - c. Oxygen
 - d. Carbon dioxide
4. The three granulocytes are
- a. lymphocytes, monocytes, and neutrophils.
 - b. eosinophils, neutrophils, and basophils.
 - c. eosinophils, neutrophils, and monocytes.
 - d. basophils, lymphocytes, and neutrophils.
5. What's the significance of red bone marrow becoming yellow bone marrow?
- a. The animal no longer requires hematopoiesis.
 - b. The animal is overweight.
 - c. The animal has a decreased oxygen supply.
 - d. The animal is older, and the requirement for a high blood cell production rate no longer exists.

6. What organ releases erythropoietin to stimulate erythrocyte production by the bone marrow?
- a. Liver
 - b. Pancreas
 - c. Spleen
 - d. Kidney
7. What organ stores blood to be used when oxygen is needed?
- a. Liver
 - b. Thymus
 - c. Spleen
 - d. Kidneys
8. What term is used to describe the condensed, small nucleus of the immature erythrocyte?
- a. Pyknotic
 - b. Pluripotent
 - c. Polychromatic
 - d. Biconcave
9. What does it mean if a polychromatic red blood cell is seen in a peripheral blood sample?
- a. The cell is dying.
 - b. The cell is immature.
 - c. The cell has started to form granules.
 - d. Bilirubin is being broken down inside the cell.
10. Which statement is *false* regarding the biconcave disk shape of erythrocytes?
- a. It provides more membrane surface area for diffusion of oxygen and carbon dioxide.
 - b. It renders the cell deformable and thus can take in water.
 - c. It provides a central pallor to the cell.
 - d. It results in a greater diffusion distance in and out of the cell compared with a sphere.
11. To what does oxygen attach in erythrocytes?
- a. Iron that's part of the heme group
 - b. Iron that's part of the globin molecule
 - c. Chromium that's part of the bilirubin
 - d. Aluminum that's part of the heme group
12. What's the average life span of erythrocytes in horses and dogs, respectively?
- a. 150 days and 90 days
 - b. 120 days and 30 days
 - c. 160 days and 120 days
 - d. 150 days and 120 days
13. What organ contains macrophages that are especially active in removing aging, dead, and abnormal red blood cells?
- a. Liver
 - b. Small intestines
 - c. Spleen
 - d. Large intestines
14. What happens to iron in an erythrocyte that undergoes extravascular hemolysis?
- a. It's transported to the red bone marrow.
 - b. It's returned to the liver.
 - c. It's converted to bilirubin.
 - d. It's transported to another red blood cell already in circulation.
15. What happens to conjugated bilirubin once it's in the intestines?
- a. It's resorbed into the bloodstream and transported to red bone marrow.
 - b. It's converted into urobilinogen by bacteria.
 - c. It's converted into urobilinogen by macrophages.
 - d. It attaches to albumin because it's not water soluble.

16. What's the transport plasma protein that picks up hemoglobin in the blood and takes it to the liver?

- a. Haptoglobin
- b. Albumin
- c. Glucuronic acid
- d. Biliglobin

17. What can cause relative polycythemia?

- a. Diarrhea
- b. Vomiting
- c. Decreased water consumption
- d. All of the above

18. What percentage of hemolysis is typically extravascular?

- a. 80 percent
- b. 10 percent
- c. 90 percent
- d. 75 percent

19. What's the parent cell of the platelet?

- a. Thrombocyte
- b. Megakaryocyte
- c. Fibrinocyte
- d. Monocyte

20. Which of the following is true?

- a. Petechiae are pinpoint hemorrhages that indicate a problem with hemostasis.
- b. Platelets have a coating that prevents them from sticking to each other.
- c. Hemostasis is not affected by thrombocytopenia, only if platelets cannot function properly.
- d. During clot formation, endothelial cells change shape and develop pseudopods that allow them to intertwine with each other.

21. Which leukocyte is involved in antibody production and cellular immunity?

- a. Monocyte
- b. Basophil
- c. Lymphocyte
- d. Neutrophil

22. Which of the following is used to describe the production of white blood cells?

- a. Neutropoiesis
- b. Lymphopoiesis
- c. Leukopoiesis
- d. Leukophilia

23. What cell is known as a PMN?

- a. Eosinophil
- b. Neutrophil
- c. Basophil
- d. Monocyte

24. Band cells are

- a. immature eosinophils.
- b. immature basophils.
- c. pyknotic neutrophils.
- d. immature neutrophils.

25. Where are mature neutrophils stored until they're needed by the body?

- a. Bone marrow
- b. Lymph nodes
- c. Lining the small blood vessels of the spleen, lungs, and abdominal organs.
- d. Both a and c

CHAPTER 10 – RESPIRATORY SYSTEM

- Which of the following structures contributes to phonation in some way?
 - Epithelium of the nasal passages
 - Blood pH
 - Sinuses
 - Olfactory sense
- Which of the following structures isn't part of the upper respiratory tract?
 - Alveoli
 - Larynx
 - Pharynx
 - Trachea
- What's the name of a nasal passageway in the nose?
 - Turbinate
 - Conchae
 - Septum
 - Meatus
- What forms the floor of the nose?
 - Soft palate
 - Hard palate
 - Common nasal meatus
 - Ventral turbinate
- Which of the following is a function of the nasal passages?
 - Humidifying inspired air
 - Filtering inspired air
 - Warming inspired air
 - All of the above
- Where do the cilia of the sinuses send fluid and debris?
 - Into the nasal passages
 - Directly into the pharynx
 - Into the neighboring sinuses
 - Directly into the larynx
- Which of the following is a function of the epiglottis?
 - Oxygen and carbon dioxide exchange
 - Digestion of food
 - Prevention of foreign material from being inhaled
 - pH balance of blood
- When does the epiglottis cover the glottis?
 - During swallowing
 - During voice production
 - When foreign material is inhaled
 - Both a and c
- The degeneration of which nerve leads to roaring in horses?
 - Olfactory
 - Recurrent laryngeal
 - Vagus
 - Trigeminal
- Which statement is *false*?
 - To generate a cough, the glottis closes so that air can build up behind it in the larynx, trachea, and lungs.
 - To generate a cough, the glottis closes so that air can build up in front of it.
 - Closure of the glottis helps nonrespiratory functions that involve "straining" such as urination, defecation, and parturition.
 - As air passes over taut vocal cords, they vibrate and produce sounds.

11. What bridges the gap between the ends of each cartilage ring in the trachea?
- a. Skeletal muscle
 - b. Fibrous cartilage
 - c. Ligaments
 - d. Smooth muscle
12. What happens to increased amounts of mucus produced in the trachea?
- a. It's coughed up.
 - b. It's pushed back to the lungs by cilia.
 - c. It's pushed into nasal passages by cilia.
 - d. It's hydrolyzed in the trachea and its byproducts are pushed into the larynx.
13. In a healthy animal, what happens to the bronchial passageways during times of intense physical activity?
- a. They partially bronchoconstrict.
 - b. They bronchodilate.
 - c. Bronchial smooth muscle partially contracts.
 - d. Bronchial skeletal muscle relaxes.
14. What helps decrease surface tension within alveoli?
- a. Mucus
 - b. Cilia
 - c. Water
 - d. Surfactant
15. In which animal does the left lung consist of just one large lobe?
- a. Cow
 - b. Dog
 - c. Horse
 - d. Pig
16. In what vessel does blood leave the right side of the heart on its way to the lungs?
- a. Pulmonary artery
 - b. Aorta
 - c. Caudal vena cava
 - d. Pulmonary vein
17. What membrane covers the structures in the thorax?
- a. Visceral peritoneum
 - b. Parietal pleura
 - c. Visceral pleura
 - d. Mediastinum
18. When the diaphragm contracts, which of the following occur?
- a. It flattens somewhat.
 - b. The lungs inflate with air.
 - c. The liver and other abdominal organs move caudally.
 - d. All of the above take place.
19. What part of the lung lies directly on the diaphragm?
- a. Apex
 - b. Hilus
 - c. Base
 - d. Medial lobe
20. Which of the following results from negative thoracic pressure?
- a. The lungs remain fixed in place as the thoracic wall and diaphragm alternately enlarge and reduce the volume of the thorax.
 - b. Blood is pulled into the large veins in the mediastinum and returns to the heart.
 - c. Blood is forced out to the body.
 - d. Inspiration and expiration are counteracted.

ANSWERS

Chapter 8

1. D
2. B
3. B
4. A
5. D
6. D
7. A
8. C
9. C
10. D
11. A
12. D
13. D
14. A
15. B
16. D
17. D
18. C
19. D
20. B

Chapter 9

1. C
2. A
3. B
4. B
5. D
6. D
7. C
8. A
9. B
10. D
11. A
12. D
13. C
14. A
15. B
16. A
17. D
18. C
19. B
20. A
21. C
22. C

23. B

24. D

25. D

Chapter 10

1. C

2. A

3. D

4. B

5. D

6. A

7. C

8. D

9. B

10. B

11. D

12. A

13. B

14. D

15. C

16. A

17. C

18. D

19. C

20. B