

Test – Lesson 13 – Vascular

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1. Which statements about the pulmonary circulation are true? (Select all that apply.)

- (A) The pulmonary artery carries oxygenated blood.
- (B) Systolic pressure in the pulmonary artery is only about 25mm during systole.
- (C) The pulmonary artery is able to supply blood to its many branches without fatiguing because of excessive smooth muscle in its walls.
- (D) The right ventricular wall is much thinner than the left ventricular wall.

2. Which statements about the kidney's control of blood pressure are true? (Select all that apply.)

- (A) The kidneys monitor blood pressure by tracking the sodium concentration in the distal convoluted tubule.
- (B) Cells in the macula densa sense the sodium concentration in the distal convoluted tubule.
- (C) The macula densa is located in the wall of the distal convoluted tube.
- (D) The section of distal convoluted tubule monitoring the blood pressure abuts a glomerulus.

3. Which statements about the kidney's control of blood pressure are true? (Select all that apply.)

- (A) The macula densa embedded in the wall of the distal convoluted tubule abuts the juxtaglomerular apparatus.
- (B) When the sodium concentration in the distal convoluted tubule drops, the macula densa concludes that the reason the sodium concentration has dropped is that the blood pressure has dropped.
- (C) When the sodium concentration in the distal convoluted tubule drops, the macula densa signals the juxtaglomerular apparatus along the efferent (outgoing) arteriole of the glomerulus.
- (D) On receiving a low sodium signal from the macula densa, the juxtaglomerular apparatus releases an enzyme called "renin" into its arteriole.

4. Which statements about renin are true?
(Select all that apply.)

- (A) Renin rises blood pressure by stimulating smooth muscle in arterial walls.
- (B) Renin snips apart the protein angiotensinogen made in the kidneys.
- (C) The snipped section of angiotensinogen, called angiotensin I, is snipped by enzymes along capillary walls into angiotensin II.
- (D) The highest concentration of enzymes snipping angiotensin I into angiotensin II is found in the capillaries of the lung.

5. Which statements about angiotensin II are true? (Select all that apply.)

- (A) Angiotensin II raises blood pressure by constricting arteries throughout the body.
- (B) Angiotensin II stimulates the adrenal glands to release aldosterone.
- (C) Angiotensin II stimulates the posterior pituitary to release antidiuretic hormone.
- (D) Angiotensin II stimulates the brainstem to activate the sympathetic nervous system.

6. Which statements about monitoring blood pressure and volume are true?
(Select all that apply.)

- (A) The atria of the heart monitor blood pressure and volume.
- (B) Receptors in the aortic arch monitor the blood pressure.
- (C) The carotid sinus in the wall of the jugular vein in the neck monitors blood pressure.
- (D) The hypothalamus indirectly monitors blood volume by monitoring the concentration of solutes in the blood.

7. Which statements about blood flow are true? (Select all that apply.)

- a. Nicotine constricts arteries.
- b. Constricting an artery by one-half reduces its cross-sectional area to one-fourth.
- c. Constricting an artery by one-half reduces its blood flow by one-sixteenth.
- d. Blood flow can be reduced by excessive numbers of red blood cells.

8. Which statements about the coronary arteries are true? (Select all that apply.)

- a. The coronary arteries are the first arteries to branch off the aorta.
- b. The coronary arteries supply most of their blood to the heart during systole.
- c. The coronary artery feeding both the right and left ventricles is the anterior descending coronary artery.
- d. The electrical system of the heart is most likely to be interrupted by occlusion of the left circumflex coronary artery.

9. Which statement about the three branches off the aortic arch is true?

- a. The three branches are, in this order, the right common carotid artery, the left common carotid artery, and the left brachiocephalic artery.
- b. The three branches are, in this order, the right common carotid artery, the left common carotid artery, and the left subclavian artery.
- c. The three branches are, in this order, the right brachiocephalic artery, the left common carotid artery, and the left subclavian artery.
- d. The three branches are, in this order, the right brachiocephalic artery, the right common carotid artery, and the left common carotid artery.

10. Which statements about the arteries supplying the brain are true? (Select all that apply.)

- a. The vertebral arteries pass upward through rings of bone attached to the vertebral bodies.
- b. The vertebral arteries supply the brainstem of the brain.
- c. The carotid arteries supply the majority of the frontal, parietal, temporal, and occipital hemispheres of the brain.
- d. The vertebral and carotid arteries are connect to each other through the circle of Willis.

11. Which statements about arteries and veins are true? (Select all that apply.)

- a. A subarachnoid hemorrhage in the brain is due to bleeding from small veins.
- b. A subdural hemorrhage in the skull is due to bleeding from small arterioles.
- c. Muscular contractions in the legs force venous blood upward and valves within the veins prevent back flow.
- d. The purpose of the lymphatic channels is to absorb plasma leaking from capillaries and carry the plasma to lymph nodes for inspection.