**Chapter 42 – Part 1: Circulation**

Basic understanding.

1. Have open circulatory systems.

A) Insects

B) Sharks

C) Humans

D) Reptiles

E) None of the above

2. Have Closed circulatory systems.

A) Insects

B) Sharks

C) Humans

D) B & C Only

E) All of the above.

3. Have double circulation while have single circulatory systems.

A) Sharks, mammals

B) Mammals, sharks

C) Reptiles, Mammals

D) Mammals, Reptiles

E) None of the above.

4. Endotherms require more oxygen than ectotherms.

A) True

B) False

5. Right atrium accepts deoxygenated blood while left atrium accepts oxygenated blood.

A) True

B) False

6. Blood is received in the ventricles before it is moved to the atria.

A) True

B) False

7. Where are semilunar valves found in the mammalian heart?

A) where blood goes from atria to ventricles

B) on the right side of the heart only

C) where the pulmonary veins attach to the heart

D) at the places where blood leaves via the aorta and pulmonary arteries

E) at the places where the anterior and posterior venae cavae enter

8. Where are the bicuspid and tricuspid valves found in the mammalian heart?

A) where blood goes from atria to ventricles

B) on the right side of the heart only

C) where the pulmonary veins attach to the heart

D) at the places where blood leaves via the aorta and pulmonary arteries

E) at the places where the anterior and posterior venae cavae enter

9. Pulse is a direct measure of (Campbell 2008)

A) blood pressure.

B) stroke volume

C) cardiac output

D) heart rate

E) breathing rate

10. All arteries carry oxygenated blood while all veins carry deoxygenated blood.

A) True

B) False

**Circulation Mastery**

11. \_\_\_\_\_\_\_\_\_ walls are three times thicker than \_\_\_\_\_\_\_\_ walls because blood is pumped at a higher pressure.

A) vein, artery

B) artery, vein

C) capillaries, artery

D) capillaries, vein

E) smooth muscle, cardiac muscle

12. Myocardial ischemia is a disorder that comes from deprivation of oxygen and nutrients to the muscle tissues of the heart. Clinical manifestations are usually a type of chest pain called angina. What component of the heart is most likely responsible for these symptoms?

A) Superior vena cavae

B) Pulmonary veins

C) Right atrium

D) Left ventricles

E) Coronary artery

13. Reduced blood flow in capillaries is essential to the functioning of the circulatory system because

A) it prevents red blood cells from lysing.

B) it prevents bacteria from getting in.

C) it allows time for exchange of materials.

D) it allows hemoglobin to bind oxygen properly.

E) it gives the arteries and veins a break.

14. Which sequence of blood flow can be observed in either a reptile or a mammal?

A) left ventricle → aorta → lungs → systemic circulation

B) right ventricle → pulmonary vein → pulmocutaneous circulation

C) pulmonary vein → left atrium → ventricle → pulmonary circuit

D) vena cava → right atrium → ventricle → pulmonary circuit

E) right atrium → pulmonary artery → left atrium → ventricle

15. The normal physiological flow of blood is unidirectional. What component of the heart prevents the backflow of blood in the heart?

A) Tricuspid valves

B) Bicuspid valves

C) mitral valves

D) Aortic valves

E) All of the above

16. In the mammalian heart, the right chambers of the heart pumps blood to the pulmonary circuit while the left chambers of the heart pump blood to the systemic circuit. This should suggest that…

A) The left chambers of the heart have thinner walls and lower blood pressure.

B) The right side of the heart pumps more blood than the left side.

C) The left side has more valves than the right side of the heart.

D) There is no difference in the anatomy of the left and right chambers of the heart.

E) The right heart is a low pressure system while the left heart is a thicker-walled high pressure

system.

17. A sphygmomanometers measure the gauge pressure in the systemic circulation, which is the pressure above atmospheric pressure (760 mmHg at sea level). At what component of the circulatory circuit would one expect to detect the largest ***drop*** in blood pressure? (Think!)

A) Arteries

B) Veins

C) Venules

D) Capillaries

E) Arterioles

18. The SA node has an intrinsic rhythm of 60-100 signals per minute, so the normal human heart rate is 60-100 beats per minute. Ventricular tachycardia (*v tach*) is a dangerous condition of elevated heart rate, about 200 beats per minute. Which of the following best explains why *v tach* is such a deathly condition if normal rhythm is not quickly restored?

A) The heart fills with blood during systole, so faster heart beat means less time there is for blood to enter the heart. A faster heart beat means diminishing returns in terms of amount of blood supplied to the body.

B) Damage to the SA node comes with aging, hence the *v tach* condition can only be found in the older population.

C) During period of rest or exercise the autonomic nervous system controls heart rate. Hence a *v tach* syndrome is due to a nervous disorder.

D) The *v tach* condition is evidence of cardiac input disorder.

E) The heart fills with blood during diastole, so faster heart beat means less time there is for blood to enter the heart. A heart with *v tach* cannot properly fill with blood and paradoxically stops pumping blood.

19. Fainting is caused by inadequate blood flow to the head. When you hold your breath, which of the following blood gas change first leads to the urge to breathe? (Campbell 2008)

A) Rising O2

B) Falling O2

C) Rising CO2

D) Falling CO2

E) Increase CO2 and decrease O2.