

NAME \_\_\_\_\_

**BIO 350 EXAM #3 SUMMER 2009**

(2 points each for multiple choice)

- 1. The primary force driving fluids to leak from capillaries in skeletal muscle (on the arterial side of the capillary) into the interstitial tissue is:**
  - A. hydrostatic pressure of the blood
  - B. hydrostatic pressure of the lymph
  - C. colloid pressure of the blood
  
- 2. Compared to fetal hemoglobin, adult hemoglobin has:**
  - A. has no Fe molecules
  - B. same oxygen affinity
  - C. more heme groups
  - D. lower oxygen affinity
  - E. both B and A are correct
  
- 3. The greatest cross-sectional surface area for the blood to flow past is which of the following regions of the circulation ?**
  - A. aorta
  - B. arteries
  - C. capillaries
  - D. veins
  - E. vena cava (region right before the atrium)
  
- 4. A condition, such as elephantiasis, where severe edema occurs is most closely associated with which of the following ?**
  - A. low hydrostatic pressure in the veins
  - B. very high colloid osmotic pressure in the capillary
  - C. blockage of the lymphatic system so lymph can not flow
  - D. an over production of NO locally producing vasodilatation
  - E. active use of skeletal muscle inhibiting lymph flow
  
- 5. The region of the circulation with the least hydrostatic pressure is**
  - A. aorta
  - B. arteries
  - C. capillaries
  - D. veins
  - E. vena cave (region right before the atrium)
  
- 6. The carotid bodies are primarily related to which of the following functions ?**
  - A. monitoring pH in the blood
  - B. monitoring the hydrostatic pressure in the blood
  - C. to block perfusion of the nasal passage ways in the human nose
  - D. none of the above

**7. The mammalian systemic circulation (mark the correct answer)\_\_\_\_\_:**

- A. receives more blood than the pulmonary circulation.
- B. is a high pressure system compared to the pulmonary circulation.
- C. receives blood from the left ventricle.
- D. Both B and C are correct.
- E. All the above are correct

**8. In you, a typical mammal, the left half of the heart pumps blood through the \_\_\_\_\_ and the right half pumps blood through the \_\_\_\_\_ circulation.**

- A. systemic: pulmonary
- B. systolic: semilunar
- C. diastolic: systolic
- D. kidneys: liver
- E. pulmonary: systemic

**9. When the ventricles relax in the human heart a substantial amount of blood will back flow from the main arteries to refill the ventricles so they can pump it back out again.**

- A. True B. False

**10. The main pacemaker of the mammalian heart is normally the \_\_\_\_\_.**

- A. The SA node
- B. The AV node
- C. The Purkinje system
- D. The bundle of His
- E. none of the above since it is purely neurogenic

**11. One of the pronounced cardiovascular responses to diving among birds and mammals is bradycardia (slowing down of the heart rate) during the physical contact with the cold water.**

- A. True B. False

**12. Invertebrates with a open circulatory system can have arteries from the heart to direct blood to particular regions of the body.**

The statement above is-

- A. True B. False

**13. The majority of the blood volume is stored in the \_\_\_\_\_ when you are in a relaxed state.**

- A. arteries
- B. pulmonary veins
- C. pulmonary arteries
- D. systemic veins
- E. heart

- 14. which of the flowing blood vessels have the thickest wall ?**
- A. veins
  - B. capillaries
  - C. aorta
  - D. pulmonary veins
  - E. arterioles
- 15. Which one of the lower vertebrates have two completely separated atria and two completely separated ventricles ?**
- A. turtles
  - B. salamanders
  - C. lungfish
  - D. crocodiles
  - E. Frogs
- 16. Thyroid hormones are:**
- A. produced from serotonin
  - B. inhibited in production by TSH
  - C. a type of neurohormone
  - D. made in the thyroid gland
- 17. Which of the following hormone(s) is(are) secreted by the hypothalamus?**
- A. thyroid-stimulating hormone (TSH)
  - B. adrenal corticotropic hormone (ACTH)
  - C. gonadotropin-releasing hormone (GnRH)
  - D. follicle-stimulating hormone (FSH)
  - E. All of the above are correct
- 18. During the follicular phase of the ovarian (menstrual) cycle:**
- A. estrogen levels predominate
  - B. progesterone levels predominate
  - C. estrogen and progesterone levels are elevated
  - D. estrogen and progesterone levels are low
  - E. none of the above apply
- 19. The production of nitric oxide (NO) from endothelial cells is one mechanism to promote relaxation of smooth muscle cells.**
- (A) True                      (B) False
- 20. Which factor reduces hemoglobin's oxygen affinity?**
- A. decreasing CO<sub>2</sub>
  - B. increasing pH
  - C. increasing temperature