1. Blood is classified as
   a. a liquid
   b. an organ
   c. a liquid connective tissue
   d. a hemopoietic tissue

2. The total volume of blood in the body is approximately _____ liters.
   a. 25-30
   b. 10-15
   c. 5
   d. 2-4
   e. less than 2

3. When checking the efficiency of gas exchange, it may be necessary to draw a blood sample from
   a. the heart
   b. the lungs
   c. an artery
   d. a vein
   e. capillaries

4. Plasma proteins that are important in body defense are the
   a. albumins
   b. fibrinogens
   c. immunoglobulins
   d. lipoproteins

5. The pH of the blood is normally about
   a. 5.8
   b. 6.4
   c. 7.0
   d. 7.4
   e. 8.2

6. Heparin
   a. is a potent anticoagulant
   b. stimulates blood coagulation
   c. stimulates erythropoeisis
   d. stimulates vitamin K synthesis
   e. stimulates the immune system

7. A person’s blood type is determined by the
   a. size of the RBCs
   b. shape of the RBCs
   c. chemical character of the hemoglobin
   d. presence or absence of specific molecules on the cell membrane

8. Difficulty with the Rh blood factor can arise when
   a. an Rh- man and woman conceive a baby
   b. an Rh+ man and woman conceive a baby
   c. an Rh- man and an Rh+ woman conceive a baby
   d. an Rh+ man and an Rh- woman conceive a baby

9. In a severe allergic reaction, anaphylactic shock is caused by the prolonged effects of
   a. histamine
   b. epinephrine
   c. heparin
   d. fibrinogen
10. The white blood cells that are important in producing antibodies are the
   a. neutrophils       c. basophils       e. monocytes
   b. eosinophils       d. lymphocytes

11. The blood cells involved in the clotting process are the
   a. neutrophils       c. basophils       e. platelets
   b. eosinophils       d. lymphocytes

12. The “double pump” function of the heart includes the right side that serves as the
    ________ circuit pump, while the left side serves as the ______ pump.
   a. systemic; pulmonary       c. coronary; cardiac
   b. pulmonary; coronary       d. pulmonary; systemic

13. Atrioventricular valves prevent back flow of blood into the _________; semilunar
    valves prevent backflow into the _____________?
   a. atria; ventricles       c. ventricles; atria
   b. lungs; systemic circulation       d. capillaries; lungs

14. Contraction of cardiac muscle is initiated by
   a. the medulla oblongata
   b. SA node
   c. AV node

15. An MI results in
   a. the death of an area of the aorta
   b. an accelerated rate of hemopoiesis
   c. rapid cell division of the layers of the pericardium
   d. death of an area of the heart muscle

16. Permitting the exchange of nutrients and gases between the blood and tissue cells is
    the primary function of the
   a. capillaries       b. arteries       c. veins       d. arterioles

17. The best nonspecific defense that humans have is
   a. the ability to conduct phagocytosis
   b. an intact cutaneous membrane
   c. complement production

18. The body’s nonspecific defenses include all of the following except
   a. the skin       c. interferon       e. antibodies
   b. complement       d. inflammation

19. The 4 clinical signs of inflammation are
   a. low-grade fever, redness, swelling, non-tender localized area
   b. pus, pain, heat, redness
   c. vasoconstriction, redness, heat, pain
   d. redness, swelling, heat, pain
20. 3 steps critical to a healthy immune system is the system’s ability to _________ the antigen.
   a. recognize, destroy, and remember
   b. lyses, phagocytize, and apply antimicrobical chemicals
   c. utilize Interluekin-1, complement, and MHC

21. Functions of the respiratory system include
   a. protecting respiratory surfaces from dehydration, temperature changes, or other environmental variations
   b. maintaining blood pH
   c. providing an extensive area for gas exchange between air and circulating blood
   d. a and c only
   e. all of the above are correct

22. Surfactant
   a. protects the surface of the lungs
   b. phagocytizes small foreign particles
   c. replaces mucus in the alveoli
   d. helps prevent the alveoli from collapsing
   e. is not found in healthy lung tissue

23. The common passageway shared by the respiratory and digestive systems is the
   a. larynx   c. pharynx
   b. glottis   d. trachea

24. The actual sites of gas exchange within the lungs are
   a. bronchioles       c. terminal sacs
   b. pleural spaces    d. alveoli sacs

25. The normal rate and depth of breathing is established by the
   a. lungs
   b. medulla oblongata
   c. hypothalamus

26. Cancer is more frequent in areas that are
   a. transitioning from one cell type to another
   b. primarily PSCCE
   c. composed of several layers of one cell type

27. Under normal conditions the greatest effect on the respiratory centers is initiated by
   a. decreases in \( \text{P}O_2 \)
   b. increases and decreases in \( \text{P}O_2 \) and \( \text{P} CO_2 \)
   c. increases and decreases in \( \text{P} CO_2 \)
   d. increases in \( \text{P} O_2 \)

28. An elevated body temperature will
   a. decreases respiration
   b. increase depth of respiration
   c. accelerate respiration
   d. not affect the respiratory rate
29. The respiratory system is generally less efficient in the elderly because:
   a. some degree of emphysema is normal in the elderly
   b. elastic tissue deteriorates, lowering the vital capacity of lungs
   c. movements of the rib cage are restricted
   d. a, b, and c are correct

30. The sum of all of the biochemical processes going on within the human body at any given instant is called
   a. glycolysis
   b. catabolism
   c. anabolism
   d. metabolism

31. The vitamin that is essential for the production of several clotting factors is
   a. vitamin A       c. vitamin C       e. vitamin K
   b. vitamin B       d. vitamin E

32. Waves of muscular contractions that propel the contents of the digestive tract from one point to another are called
   a. segmentations
   b. peristalsis
   c. mastication
   d. churning movements

33. Bile is stored in the
   a. liver       c. pancreas       e. appendix
   b. duodenum    d. gall bladder

34. A small, finger-like structure attached to the cecum is the
   a. haustra       c. gall bladder
   b. appendix      d. ileum

35. Tom is suffering from hepatitis. Which of the following symptoms would you expect to observe in Tom?
   a. jaundice       c. elevated levels of blood glucose
   b. impaired digestion of protein       d. blood in the feces

36. Normal blood glucose is within which range?
   a. 100 – 200 mg/dL
   b. 80 – 120 mg/dL
   c. 10 - 45 mg/dL

37. The most important factor affecting the pH of body tissues is the concentration of
   a. lactic acid
   b. carbon dioxide
   c. hydrochloric acid
38. Hyperventilation would cause
   a. respiratory acidosis
   b. respiratory alkalosis
   c. metabolic acidosis
   d. metabolic alkalosis

39 In response to respiratory alkalosis, the
   a. respiratory rate increases
   b. tidal volume increases
   c. kidneys conserve bicarbonate
   d. body retains more carbon dioxide

40. Prolonged vomiting can result in
   a. respiratory acidosis
   b. respiratory alkalosis
   c. metabolic acidosis
   d. metabolic alkalosis

41. A person who suffers from emphysema will exhibit signs of
   a. respiratory acidosis
   b. respiratory alkalosis
   c. metabolic acidosis
   d. metabolic alkalosis

42. A person who suffers from diabetes will exhibit signs of
   a. respiratory acidosis
   b. respiratory alkalosis
   c. metabolic acidosis
   d. metabolic alkalosis

43. The kidneys are
   a. located retroperitoneally
   b. are protected by the abdominal muscles
   c. are surrounded by the small and large intestines

44. The basic functional and structural unit of the kidney is the
   a. nephron          c. renal corpuscle
   b. glomerulus       d. filtration unit

45. A glomerulus is
   a. the expanded end of a nephron
   b. a knot of capillaries that lies within the renal corpuscle
   c. the portion of the nephron closest to the renal corpuscle
   d. the portion of the nephron that attaches to the collecting duct
   e. the horse-shoe shaped segment of the nephron
46. Which of the following is an abnormal constituent of urine?
   a. urea
   b. uric acid
   c. water
   d. glucose

47. The ureter carries urine
   a. from the bladder to the urethra
   b. from the bladder to the kidney
   c. from the kidney to the bladder

48. The urethra carries
   a. urine from the kidney to the bladder
   b. urine from the bladder to the kidney
   c. urine from the bladder to the outside of the body

49. Sperm production occurs in the
   a. vas deferens
   b. seminiferous tubules
   c. epididymis
   d. seminal vesicles

50. Pregnancy tests are based on the detection of _____ in the urine.
   a. estrogen  c. FSH  e. hCG
   b. progesterone  d. LH