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Anatomy & Physiology: Digestive, Respiratory & Urinary Systems (chapters 22 to 26)
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Chapter 22: THE RESPIRATORY SYSTEM

1. _____ of the respiratory system includes the organs and structures **not** directly involved in gas exchange.
A. Conducting zone
B. Digestive zone
C. Sensory zone
D. none of the above

2. The _____ is one of a pair of bones that lies under the root and bridge of the nose.
A. frontal bone
B. nasal bone
C. maxillary bone
D. vomer bone

3. The _____ produce mucus and lighten the weight of the skull.
A. esophagus
B. paranasal sinuses
C. trachea
D. epiglottis

4. The pharynx is divided into which of the following region?
A. nasopharynx
B. oropharynx
C. laryngopharynx
D. all of the above

5. The trachea is also called that _____ extends from the larynx toward the lungs.
A. food pipe
B. pacemaker
C. windpipe
D. floating rib

6. _____ is one of the many small grape-like sacs that are attached to the alveolar ducts.
A. Respiratory membrane
B. Pulmonary surfactant
C. Alveolus
D. none of the above

7. _____ is a chronic disease characterized by inflammation and edema of the airway and bronchospasms which can prevent air from entering the lungs.
A. Asthma
B. Gastritis
C. Migraine
D. Tuberculosis

8. The cardiac notch is an indentation on the surface of the left lung and it allows space for the _____.
A. pancreas
B. heart
C. trachea
D. diaphragm

9. Inhalation and exhalation are dependent on the differences in pressure between the atmosphere and the lungs.

A. TRUE
B. FALSE

10. Which of the following are major types of respiratory volumes?
A. tidal
B. residual
C. inspiratory and expiratory reserve
D. all of the above

11. _____ is the amount of air a person can move into or out of his or her lungs, and is the sum of all of the volumes except residual volume.
A. Inspiratory capacity (IC)
B. Functional residual capacity (FRC)
C. Vital capacity (VC)
D. Alveolar dead space

12. _____ is characterized by the cessation of breathing during sleep.
A. Asthma
B. Gastritis
C. Sleep apnea
D. Tuberculosis

13. _____ is the movement of air into and out of the lungs, and perfusion is the flow of blood in the pulmonary capillaries.
A. External respiration
B. Ventilation
C. Internal respiration
D. none of the above

14. Hemoglobin consists of four sub-units, each of which contains one molecule of _____.
A. iron
B. calcium
C. bile
D. nitrogen

15. _____ is an increased depth and rate of ventilation to meet an increase in oxygen demand in the body.
A. Hyperpnea
B. Asthma
C. Bronchitis
D. Hypoxia

Chapter 23: THE DIGESTIVE SYSTEM
16. How long is the gastrointestinal (GI) tract in humans?
A. 5 feet
B. 10 feet
C. 17 feet
D. 25 feet

17. The digestive organs within the abdominal cavity are held in place by the _____.
A. cartilage
B. fossa
C. peritoneum
D. tendons

18. Which of the following pushes food from the oral cavity to the esophagus?
A. Stomach
B. Small intestine
C. Pharynx
D. Large intestine

19. _____ is the final step in digestion process.
A. Chemical digestion

B. Defecation
C. Appetite
D. Segmentation

20. _____ is secreted in response to the presence of food by the stomach.
A. Gastrin
B. Insulin
C. Epinephrine
D. Melanin

21. An average of _____ of saliva is secreted each day by salivary glands.
A. 1 to 1.5 liters
B. 3 to 4 liters
C. 5 to 6 liters
D. 7 to 7.5 liters

22. Which of the following is involved in both digestion and respiration?
A. Stomach
B. Small intestine
C. Pharynx
D. Large intestine

23. Deglutition is also called swallowing.
A. TRUE
B. FALSE

24. The _____ is the longest part of the small intestine.
A. ileocecal sphincter
B. ileum
C. jejunum
D. circular fold

25. Which of the following are accessory organs in digestion?
A. Liver
B. Pancreas
C. Gallbladder
D. all of the above

Chapter 24: METABOLISM AND NUTRITION
26. Approximately 40 percent of energy yielded from catabolic reactions is directly transferred to the high-energy molecule _____.
A. calcium
B. sugar
C. adenosine triphosphate (ATP)
D. potassium

27. _____ are considered the **most common** source of energy to fuel the body.
A. Carbohydrates
B. Water
C. Alcohol
D. Cholesterol

28. Growth hormone (GH) is synthesized and released from the _____.
A. pancreas
B. pituitary gland
C. kidneys
D. ovaries

29. _____ is the body's **most readily** available source of energy.
A. Iron
B. Glucose
C. Vitamin C

D. none of the above

30. Gluconeogenesis is the synthesis of new glucose molecules from which of the following?
A. pyruvate & lactate
B. glycerol & glutamine
C. amino acids alanine
D. all of the above

31. The human body's metabolic rate decreases nearly _____ percent per decade after age 30.
A. 2
B. 7
C. 10
D. 25

32. Fats are also called _____.
A. calcium
B. sugar
C. adenosine triphosphate (ATP)
D. triglycerides

33. Ketones oxidize to produce energy for the brain.
A. TRUE
B. FALSE

34. Pancreatic beta cells release _____ after ingestion of food.
A. calcium
B. sugar
C. insulin
D. potassium

35. The amount of energy for the body needed or ingested per day is measured in _____.
A. kilograms
B. calories
C. ounces
D. liters

Chapter 25: THE URINARY SYSTEM
36. What are the normal pH values of the urine?
A. 4.5–8.0
B. 8.9-10
C. 10-12.5
D. 13-15.5

37. The virtual absence of urine production is called _____.
A. anuria
B. oliguria
C. polyuria
D. diabetes

38. The _____ carries urine from the bladder to the outside of the body for removal.
A. kidneys
B. liver
C. urethra
D. gallbladder

39. The left kidney is located at about the _____ vertebrae.
A. C2 to C4
B. T1 to T3
C. T12 to L3
D. L5 to coccyx

40. Which of the following are the "functional units" of the kidney?

A. neurons
B. nephrons
C. electrons
D. villi

41. The nephrons carry which of the following function?
A. filtration
B. reabsorption
C. secretion
D. all of the above

42. The volume of filtrate formed by both kidneys per minute is termed the glomerular filtration rate (GFR).
A. TRUE
B. FALSE

43. How much water is filtered by the kidney per 24 hours?
A. 8 L
B. 18 L
C. 180 L
D. 1800 L

44. An exceptionally high sugar intake might cause sugar to appear briefly in the urine is called _____.
A. anuria
B. oliguria
C. polyuria
D. glycosuria

45. Regulation of urine volume and osmolarity are major functions of the _____.
A. urethra
B. collecting ducts
C. bladder
D. renal glands

Chapter 26: FLUID, ELECTROLYTE, AND ACID-BASE BALANCE
46. Osmosis is a diffusion of water from regions of lower concentration to regions of higher concentration.
A. TRUE
B. FALSE

47. Human bodies are mostly made of _____.
A. water
B. spinal fluid
C. tendons
D. sugar

48. The _____ lies within cells and is the **main** component of the cytosol/cytoplasm.
A. intracellular fluid
B. spinal fluid
C. platelets
D. plasma

49. _____ is the force exerted by a fluid against a wall which causes movement of fluid between compartments.
A. ATP
B. ADP
C. Hydrostatic pressure
D. BCOP

50. If you are sweating, you will lose water through your _____.
A. kidney
B. urine
C. skin
D. tears

51. Which of the following is the accumulation of excess water in the tissues?
A. anuria
B. oliguria
C. polyuria
D. edema

52. Which of the following can regulate water levels in the body?
A. liver
B. kidneys
C. bladder
D. stomach

53. _____ is a net loss of water that can results in insufficient water in blood and other tissues.
A. Edema
B. Dehydration
C. Anuria
D. Inflammation

54. Water loss from the body occurs **primarily** through the _____.
A. cardiovascular system
B. reproductive system
C. renal system
D. skeleton system

55. _____ controls the amount of water reabsorbed from the collecting ducts and tubules in the kidney.
A. Antidiuretic hormone (ADH)
B. Epinephrine
C. Insulin
D. Melanin

56. Which of the following electrolytes are most important for body function?
A. sodium & potassium
B. chloride & bicarbonate
C. calcium & phosphate
D. all of the above

57. An abnormal increase of blood sodium is called _____.
A. Hyponatremia
B. Dehydration
C. Anuria
D. Hypernatremia

58. Hypokalemia is an abnormally low _____ blood level.
A. sodium
B. potassium
C. calcium
D. iron

59. Which of the following provides hardness to the bone?
A. sodium
B. potassium
C. calcium
D. vitamin C

60. Angiotensin II causes vasoconstriction and an increase in systemic blood pressure.
A. TRUE
B. FALSE

61. _____ is measured using the pH scale.
A. Acid-Base balance
B. Kidney function

C. Insulin
D. Blood pressure

62. _____ is the principal protein in red blood cells and accounts for one-third of the mass of the cell.
A. Sodium
B. Hemoglobin
C. Calcium
D. Iron

63. Respiratory system contributes to the balance of acids and bases in the body by regulating the blood levels of _____.
A. carbonic acid
B. epinephrine
C. insulin
D. antidiuretic hormone (ADH)

64. Increasing the rate and/or depth of respiration allows humans to exhale more _____.
A. nitrogen
B. potassium
C. carbon dioxide
D. oxygen

65. The body regulates the respiratory rate by the use of _____, which primarily use CO_2 as a signal.
A. sensory neurons
B. chemoreceptors
C. electrons
D. sodium channels

66. An abnormally low blood levels of CO_2 is called _____.
A. Hyponatremia
B. Hypercapnia
C. Anuria
D. Hypocapnia

67. Low bicarbonate blood levels can result from elevated levels of ketones.
A. True
B. False

68. Ketoacidosis occurs most frequently in people with poorly controlled _____.
A. diabetes mellitus
B. kidney function
C. heart rate
D. blood pressure

69. _____ occurs when the blood is overly acidic due to an excess of carbonic acid, resulting from too much CO_2 in the blood.
A. Diabetes mellitus
B. High blood pressure
C. Respiratory acidosis
D. Cardiac arrest

70. Respiratory compensation for metabolic acidosis increases the respiratory rate to drive off CO_2 and readjust the bicarbonate to carbonic acid ratio to the _____ level.
A. 20:1
B. 30:2
C. 45:1
D. 52:3