Ch01
Introduction to Human Anatomy and Physiology

Multiple Choice Questions

1. Most of the terminology to name and describe body parts and their functions comes from
A. Latin and Greek.
B. English and Italian.
C. picture drawings on the cave walls of our ancestors.
D. the language of hunter-gatherers.

Bloom's Level: 1. Remember
Learning Outcome: 01.01
Topic: Body Orientation

2. An investigator who conducts an experiment to determine how temperature changes affect the rate at which the heart beats is most likely a(n)
A. anatomist.
B. physiologist.
C. chemist.
D. biochemist.

Bloom's Level: 3. Apply
Learning Outcome: 01.02
Topic: Body Orientation

3. Anatomy and physiology are difficult to separate because
A. physiological functions depend on anatomical structures.
B. physiological functions in an organism are ongoing.
C. body parts take up space.
D. our understanding of physiology is changing more than our understanding of anatomy.

Bloom's Level: 2. Understand
Learning Outcome: 01.02
Topic: Body Orientation

4. The activities of an anatomist consist of _____, whereas those of a physiologist consist of _____.
A. observing body parts; studying functions of body parts
B. conducting experiments; making microscopic examinations
C. studying molecules; observing forms of the body parts
D. sketching; dissecting

Bloom's Level: 2. Understand
Learning Outcome: 01.02
Topic: Body Orientation

5. The origin of the term "anatomy" is related to
A. the Greek word for "function."
B. the name of the first anatomist.
C. the Greek word for "cutting up."
D. the function of internal organs.

Bloom's Level: 1. Remember
Learning Outcome: 01.02
Topic: Body Orientation

6. The term "physiology" is related to
A. the Latin for "physical shape."
B. the structure of internal organs.
C. the Greek for "cutting up."
D. the Greek for "relationship to nature."

Bloom's Level: 1. Remember
Learning Outcome: 01.02
Topic: Body Orientation

7. The recent discovery of taste receptors that detect sweetness in the small intestine illustrates that
A. chemical responses occur in only one part of the body.
B. new discoveries about anatomy and physiology are still being made.
C. everything there is to know about anatomy and physiology has been discovered.
D. the molecular and cellular level is of little interest in anatomy and physiology.

Bloom's Level: 2. Understand
Learning Outcome: 01.02
Topic: Body Orientation

8. Which of the following is not true of organelles?
A. They carry on specific activities.
B. They are only in cells of humans.
C. They are composed of aggregates of large molecules.
D. They are found in many types of cells.

Bloom's Level: 2. Understand
Learning Outcome: 01.03
Topic: Body Orientation

9. Which of the following lists best illustrates the idea of increasing levels of complexity?
A. Cells, tissues, organelles, organs, organ systems
B. Tissues, cells, organs, organelles, organ systems
C. Organs, organelles, organ systems, cells, tissues
D. Organelles, cells, tissues, organs, organ systems

Bloom's Level: 1. Remember
Learning Outcome: 01.03
Topic: Body Orientation

10. In all organisms, the basic unit of structure and function is
A. the atom.
B. the molecule.
C. the macromolecule.
D. the cell.

Bloom's Level: 1. Remember
Learning Outcome: 01.03
Topic: Body Orientation

11. Specialized cell types organized in a way that provides a specific function form
A. tissues, which build organs.
B. organs, which build tissues.
C. organ systems, which build tissues.
D. atoms, which comprise tissues.

Bloom's Level: 2. Understand
Learning Outcome: 01.03
Topic: Body Orientation

12. Simple squamous epithelium is an example of a(n)
A. organ system.
B. organ.
C. tissue.
D. molecule.

Bloom's Level: 1. Remember
Learning Outcome: 01.03
Topic: Body Orientation

13. Assimilation is
A. changing absorbed substances into different chemical forms.
B. breaking down foods into nutrients that the body can absorb.
C. eliminating waste from the body.
D. an increase in body size without a change in overall shape.

Bloom's Level: 1. Remember
Learning Outcome: 01.04
Topic: Body Orientation

14. The ability of an organism to sense and react to changes in its body illustrates
A. circulation.
B. respiration.
C. responsiveness.
D. absorption.

Bloom's Level: 2. Understand
Learning Outcome: 01.04
Topic: Body Orientation

15. The removal of wastes produced by metabolic reactions is
A. metabolism.
B. absorption.
C. assimilation.
D. excretion.

Bloom's Level: 1. Remember
Learning Outcome: 01.04
Topic: Body Orientation

16. Which of the following characteristics of life and their descriptions are correct?
A. Responsiveness-obtaining and using oxygen to release energy from food
B. Assimilation-sensing changes inside or outside the body and reacting to them
C. Respiration-changing absorbed substances into forms that are chemically different from those that entered the body fluids
D. Circulation-the movement of substances in body fluids

Bloom's Level: 2. Understand
Learning Outcome: 01.04
Topic: Body Orientation

17. Metabolism is defined as _____.
A. the removal of wastes produced by chemical reactions
B. the breakdown of substances into simpler forms
C. the taking in of nutrients
D. all the chemical reactions occurring in an organism that support life

Bloom's Level: 1. Remember
Learning Outcome: 01.04
Topic: Body Orientation

18. Which of the following processes does not help to maintain the life of an individual organism?
A. Responsiveness
B. Movement
C. Reproduction
D. Respiration

Bloom's Level: 2. Understand
Learning Outcome: 01.05
Topic: Body Orientation

19. Which of the following processes is most important to continuation of the human species?
A. Responsiveness
B. Movement
C. Reproduction
D. Respiration

Bloom's Level: 2. Understand
Learning Outcome: 01.05
Topic: Body Orientation

20. Homeostasis is the
A. inability to keep body weight within normal limits.
B. room temperature decreasing because a window is open.
C. ingestion of more food than you need to eat.
D. tendency of the body to maintain a stable internal environment.

Bloom's Level: 3. Apply
Learning Outcome: 01.05
Topic: Body Orientation

21. Which of the following is not an example of a homeostatic mechanism in the human body?
A. Shivering when body temperature falls below normal.
B. Increasing heart rate and force of contraction when blood pressure falls.
C. Retaining fluid leading to retaining more fluid.
D. Secreting insulin after a meal to return blood sugar concentration toward normal.

Bloom's Level: 3. Apply
Learning Outcome: 01.05
Topic: Body Orientation

22. Living organisms use oxygen to _____.
A. reduce heat production
B. donate electrons for cellular metabolism
C. release energy stored in the molecules of food
D. remove metabolic wastes

Bloom's Level: 1. Remember
Learning Outcome: 01.05
Topic: Body Orientation

23. Maintaining a stable internal environment typically requires
A. positive feedback mechanisms.
B. an unstable outside environment.
C. decreased atmospheric pressure.
D. negative feedback mechanisms.

Bloom's Level: 2. Understand
Learning Outcome: 01.05
Topic: Body Orientation

24. A blood clot stimulating further clotting is an example of
A. a positive feedback mechanism.
B. a negative feedback mechanism.
C. a process turning itself off.
D. nervous system communication.

Bloom's Level: 1. Remember
Learning Outcome: 01.05
Topic: Body Orientation

25. Which of the following must the human body obtain from the environment in order to survive?
A. Nitrogen
B. Wastes
C. Water
D. Carbon dioxide

Bloom's Level: 1. Remember
Learning Outcome: 01.05
Topic: Body Orientation

26. Homeostasis exists if concentrations of water, nutrients, and oxygen in the body and heat and pressure _____.
A. decrease steadily
B. remain within certain limited ranges
C. increase when the body is stressed
D. fluctuate greatly between very high and low values

Bloom's Level: 2. Understand
Learning Outcome: 01.05
Topic: Body Orientation

27. In negative feedback mechanisms changes away from the normal state
A. stimulate changes in the same direction.
B. inhibit all body reactions.
C. stimulate changes in the opposite direction.
D. stimulate a reduction in all requirements of the body.

Bloom's Level: 2. Understand
Learning Outcome: 01.05
Topic: Body Orientation

28. Positive feedback mechanisms
A. cause long term changes.
B. move conditions away from the normal state.
C. bring conditions back to the normal state.
D. usually produce stable conditions.

Bloom's Level: 2. Understand
Learning Outcome: 01.05
Topic: Body Orientation

29. Which of the following illustrates a positive feedback mechanism?
A. Maintaining blood pressure
B. Uterine contractions during childbirth
C. Body temperature control
D. Control of blood sugar

Bloom's Level: 1. Remember
Learning Outcome: 01.05
Topic: Body Orientation

30. Positive feedback mechanisms usually produce
A. changes returning values toward a set point.
B. stable conditions around a set point.
C. unstable conditions.
D. long-term changes.

Bloom's Level: 2. Understand
Learning Outcome: 01.05
Topic: Body Orientation

31. Which of the following is true concerning the female reproductive system?
A. It produces female sex cells.
B. It transports the female sex cells.
C. It can support the development of an embryo.
D. All of the above.

Bloom's Level: 1. Remember
Learning Outcome: 01.06
Topic: Body Orientation

32. Which of the following organs is in the abdominopelvic cavity?
A. The heart
B. The trachea
C. The thymus
D. The liver

Bloom's Level: 3. Apply
Learning Outcome: 01.06
Topic: Body Orientation

33. The membrane on the surface of a lung is called the
A. visceral pleura.
B. parietal pleura.
C. visceral pericardium.
D. parietal pericardium.

Bloom's Level: 1. Remember
Learning Outcome: 01.06
Topic: Body Orientation

34. Which action is the main function of the digestive system?
A. Formation of cells
B. Movement of body parts
C. Absorption of nutrients
D. Providing oxygen for the extraction of energy from nutrients

Bloom's Level: 2. Understand
Learning Outcome: 01.06
Topic: Body Orientation

35. Which of the following is not part of the female reproductive system?
A. The uterus
B. The uterine tube
C. The vulva
D. The bulbourethral gland

Bloom's Level: 1. Remember
Learning Outcome: 01.06
Topic: Body Orientation

36. The thoracic cavity lies _____ the abdominopelvic cavity.
A. dorsal (posterior) to
B. ventral (anterior) to
C. superior to
D. inferior to

Bloom's Level: 1. Remember
Learning Outcome: 01.06
Topic: Body Orientation

37. Blood cells are produced in the organs of the _____ system.
A. endocrine
B. skeletal
C. respiratory
D. muscular

Bloom's Level: 1. Remember
Learning Outcome: 01.06
Topic: Body Orientation

38. A parietal layer of a serous membrane _____, whereas a visceral layer of a serous membrane _____.
A. covers organs; lines cavities
B. lines cavities; covers organs
C. secretes serous fluid; secretes mucus
D. secretes mucus; secretes a serous fluid

Bloom's Level: 1. Remember
Learning Outcome: 01.06
Topic: Body Orientation

39. Cell death first occurs
A. at age 60.
B. at age 50.
C. at puberty.
D. in the fetus.

Bloom's Level: 1. Remember
Learning Outcome: 01.07
Topic: Body Orientation

40. An obstetrician tells a 42-year-old patient that she can have a healthy baby, but that she is of "advanced maternal age." The patient is so upset that she fails to listen to the rest of the doctor's advice, goes home in a huff, and immediately dyes her hair, buys a miniskirt, and signs up for botox injections to smooth the tiny lines near her eyes. She is misinterpreting the doctor's statement because it referred to
A. the age of the sperm.
B. the age of her eggs.
C. her risk of developing diabetes.
D. her cholesterol level, not her appearance.

Bloom's Level: 3. Apply
Learning Outcome: 01.07
Topic: Body Orientation

41. Wrinkled and sagging skin results from
A. drinking too much water.
B. heredity only.
C. loss of subcutaneous fat and less elastin and collagen.
D. excess subcutaneous fat.

Bloom's Level: 2. Understand
Learning Outcome: 01.07
Topic: Body Orientation

42. Signs of aging at the cellular level are
A. graying hair, waning strength, and wrinkles.
B. unrepaired DNA and abnormal proteins.
C. impaired cell division and the ability to break down and recycle worn cell parts.
D. a fatty liver and clogged blood vessels.

Bloom's Level: 2. Understand
Learning Outcome: 01.07
Topic: Body Orientation

43. One characteristic that centenarians share is
A. a high level of exercise throughout life.
B. long-lived relatives.
C. following the Mediterranean diet.
D. never having smoked.

Bloom's Level: 1. Remember
Learning Outcome: 01.07
Topic: Body Orientation

44. An anatomical section that separates the body into right and left portions is a _____ section.
A. frontal
B. transverse
C. coronal
D. sagittal

Bloom's Level: 1. Remember
Learning Outcome: 01.08
Topic: Body Orientation

45. The upper midportion of the abdomen is called the ____region.
A. hypochondriac
B. iliac
C. hypogastric
D. epigastric

Bloom's Level: 1. Remember
Learning Outcome: 01.08
Topic: Body Orientation

46. When the body is placed in the anatomical position, which of the following is not true?
A. The head is facing to the front.
B. The palms are facing backward.
C. The body is erect.
D. The upper limbs are at the sides.

Bloom's Level: 2. Understand
Learning Outcome: 01.08
Topic: Body Orientation

47. Paired organs, such as the kidneys or lungs, are said to be
A. bisexual.
B. bilingual.
C. bilateral.
D. bivalent.

Bloom's Level: 1. Remember
Learning Outcome: 01.08
Topic: Body Orientation

48. The anatomical term that indicates a structure close to the surface is
A. anterior.
B. proximal.
C. superficial .
D. superior.

Bloom's Level: 1. Remember
Learning Outcome: 01.08
Topic: Body Orientation

49. Which of the following are vital signs?
A. Body temperature, blood pressure, and pulse rate
B. Appearance of the skin, red blood cell count, oxygen level
C. Body weight, age, gender
D. Visual acuity and auditory sharpness

Bloom's Level: 1. Remember
Boxed Reading: Vignette
Topic: Body Orientation

50. Ultrasonography is most useful for diagnostic examination of
A. dense organs, such as bones.
B. air-filled organs, such as lungs.
C. soft internal structures, such as fetuses.
D. microscopic structures.

Bloom's Level: 3. Apply
Boxed Reading: Clinical Application 1.1
Topic: Body Orientation

51. Magnetic resonance imaging uses
A. X rays.
B. a radio antenna.
C. radioisotopes.
D. high-frequency sound waves.

Bloom's Level: 1. Remember
Boxed Reading: Clinical Application 1.1
Topic: Body Orientation

52. Magnetic resonance imaging might be used to
A. distinguish between normal and cancerous tissue.
B. examine an injured knee.
C. obtain a sectional view of the brain.
D. do all of the above.

Bloom's Level: 3. Apply
Boxed Reading: Clinical Application 1.1
Topic: Body Orientation

True / False Questions

53. The transition from a hunter-gatherer to an agricultural lifestyle greatly changed the types of diseases and injuries that early peoples suffered.
TRUE

Bloom's Level: 2. Understand
Learning Outcome: 01.01
Topic: Body Orientation

54. Patterns of growth in preserved bones and tooth decay reflect the health of the people of which they were a part.
TRUE

Bloom's Level: 3. Apply
Learning Outcome: 01.01
Topic: Body Orientation

55. The field of medicine arose as early healers abandoned superstition and ideas about magic and started using natural chemicals and wondering why they were effective at treating illness.
TRUE

Bloom's Level: 3. Apply
Learning Outcome: 01.01
Topic: Body Orientation

56. Cadaver dissection is against the law in the U.S.
FALSE

Bloom's Level: 3. Apply
Learning Outcome: 01.01
Topic: Body Orientation

57. The anatomy of a body part is closely related to its physiology.
TRUE

Bloom's Level: 3. Apply
Learning Outcome: 01.02
Topic: Body Orientation

58. We know all there is to know about the structure and function of the human body.
FALSE

Bloom's Level: 2. Understand
Learning Outcome: 01.02
Topic: Body Orientation

59. Cells with similar functions aggregate into organelles.
FALSE

Bloom's Level: 2. Understand
Learning Outcome: 01.03
Topic: Body Orientation

60. Macromolecules are built of atoms.
TRUE

Bloom's Level: 2. Understand
Learning Outcome: 01.03
Topic: Body Orientation

61. Organ systems consist of organs, which consist of tissues.
TRUE

Bloom's Level: 2. Understand
Learning Outcome: 01.03
Topic: Body Orientation

62. A cell is the basic unit of structure and function of an organism.
TRUE

Bloom's Level: 2. Understand
Learning Outcome: 01.03
Topic: Body Orientation

63. Metabolism refers to all of the chemical reactions in an organism that support life.
TRUE

Bloom's Level: 2. Understand
Learning Outcome: 01.04
Topic: Body Orientation

64. Absorption is the ability to exhale carbon dioxide.
FALSE

Bloom's Level: 1. Remember
Learning Outcome: 01.04
Topic: Body Orientation

65. Reproduction is the change in body characteristics over time.
FALSE

Bloom's Level: 1. Remember
Learning Outcome: 01.04
Topic: Body Orientation

66. Oxygen is the primary raw material for new living material.
FALSE

Bloom's Level: 1. Remember
Learning Outcome: 01.05
Topic: Body Orientation

67. Temperature is a form of energy, whereas heat is a measurement of the intensity of the temperature.
FALSE

Bloom's Level: 2. Understand
Learning Outcome: 01.05
Topic: Body Orientation

68. Homeostasis is the body's maintenance of an unstable internal environment.
FALSE

Bloom's Level: 2. Understand
Learning Outcome: 01.05
Topic: Body Orientation

69. The maintenance of a steady body temperature in the face of fluctuating environmental conditions illustrates homeostasis.
TRUE

Bloom's Level: 2. Understand
Learning Outcome: 01.05
Topic: Body Orientation

70. The diaphragm separates the thoracic and the abdominopelvic cavities.
TRUE

Bloom's Level: 1. Remember
Learning Outcome: 01.06
Topic: Body Orientation

71. The parietal pericardium is attached to the surface of the heart.
FALSE

Bloom's Level: 1. Remember
Learning Outcome: 01.06
Topic: Body Orientation

72. The organ systems responsible for integration and coordination are the nervous and endocrine systems.
TRUE

Bloom's Level: 1. Remember
Learning Outcome: 01.06
Topic: Body Orientation

73. Kidneys are part of the lymphatic system.
FALSE

Bloom's Level: 3. Apply
Learning Outcome: 01.06
Topic: Body Orientation

74. The muscular system is responsible for body movements, maintenance of posture, and production of body heat.
TRUE

Bloom's Level: 3. Apply
Learning Outcome: 01.06
Topic: Body Orientation

75. The digestive system filters wastes from the blood.
FALSE

Bloom's Level: 3. Apply
Learning Outcome: 01.06
Topic: Body Orientation

76. The parietal pleura is a visceral membrane.
FALSE

Bloom's Level: 1. Remember
Learning Outcome: 01.06
Topic: Body Orientation

77. The oral, nasal, orbital, and middle ear cavities are in the dorsal cavity.
FALSE

Bloom's Level: 1. Remember
Learning Outcome: 01.06
Topic: Body Orientation

78. Aging begins in the fetus.
TRUE

Bloom's Level: 2. Understand
Learning Outcome: 01.07
Topic: Body Orientation

79. Chromosomes get longer as a cell ages.
FALSE

Bloom's Level: 2. Understand
Learning Outcome: 01.07
Topic: Body Orientation

80. Ceroid pigments and lipofuscin accumulate with aging, impairing a cell's ability to withstand the damaging effects of oxygen free radicals.
TRUE

Bloom's Level: 1. Remember
Learning Outcome: 01.07
Topic: Body Orientation

81. The ears are lateral to the eyes.
TRUE

Bloom's Level: 3. Apply
Learning Outcome: 01.08
Topic: Body Orientation

82. The elbow is distal to the wrist.
FALSE

Bloom's Level: 3. Apply
Learning Outcome: 01.08
Topic: Body Orientation

83. The anatomical position is lying down, as a cadaver would be positioned.
FALSE

Bloom's Level: 3. Apply
Learning Outcome: 01.08
Topic: Body Orientation

Fill in the Blank Questions

84. Agriculture began in some countries as recently as _____ years ago.
6,000

Bloom's Level: 1. Remember
Learning Outcome: 01.01
Topic: Body Orientation

85. Dissection of human bodies became part of medical education in the _____ century.
twentieth *or*
20th

Bloom's Level: 1. Remember
Learning Outcome: 01.01
Topic: Body Orientation

86. The branch of science that deals with the structure of human body parts is called _____.
anatomy

Bloom's Level: 1. Remember
Learning Outcome: 01.02
Topic: Body Orientation

87. The branch of science that deals with the functions of human body parts is called _____.
physiology

Bloom's Level: 1. Remember
Learning Outcome: 01.02
Topic: Body Orientation

88. A group of cells with common properties that are organized into a layer or mass is a(n) _____.
tissue

Bloom's Level: 2. Understand
Learning Outcome: 01.03
Topic: Body Orientation

89. A subcellular structure built of assemblies of macromolecules that carries out a particular function is a(n) _____.
organelle

Bloom's Level: 2. Understand
Learning Outcome: 01.03
Topic: Body Orientation

90. The process by which food substances are chemically changed into simpler forms that can be absorbed is called _____.
digestion

Bloom's Level: 1. Remember
Learning Outcome: 01.04
Topic: Body Orientation

91. The term _____ refers to an increase in body size without overall shape change.
growth

Bloom's Level: 1. Remember
Learning Outcome: 01.04
Topic: Body Orientation

92. The most abundant substance in the human body is _____.
water

Bloom's Level: 1. Remember
Learning Outcome: 01.05
Topic: Body Orientation

93. Self-regulating control mechanisms usually operate by a process called _____ feedback.
negative

Bloom's Level: 1. Remember
Learning Outcome: 01.05
Topic: Body Orientation

94. The potential space between the _____ membranes is called the pleural cavity.
pleural

Bloom's Level: 1. Remember
Learning Outcome: 01.06
Topic: Body Orientation

95. The chemicals endocrine glands secrete are called _____.
hormones

Bloom's Level: 1. Remember
Learning Outcome: 01.06
Topic: Body Orientation

96. The heart is part of the _____ system.
cardiovascular

Bloom's Level: 2. Understand
Learning Outcome: 01.06
Topic: Body Orientation

97. Individuals who live more than 100 years are called_____.
centenarians

Bloom's Level: 1. Remember
Learning Outcome: 01.07
Topic: Body Orientation

98. Standing erect with face and palms forward and upper limbs at the sides describes the _____ position.
anatomical

Bloom's Level: 1. Remember
Learning Outcome: 01.08
Topic: Body Orientation

99. A lengthwise cut that divides the body into right and left portions is termed _____.
sagittal

Bloom's Level: 1. Remember
Learning Outcome: 01.08
Topic: Body Orientation