1. 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.

2. 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.

3. 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

4. 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.

5. 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."
6. 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.

7. 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

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

9. 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.

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

11. 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.
12. The ability of an organism to sense and react to changes in its body illustrates
   A. circulation.
   B. respiration.
   C. responsiveness.
   D. absorption.

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

14. 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

15. 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

16. Which of the following processes does not help to maintain the life of an individual organism?
   A. Responsiveness
   B. Movement
   C. Reproduction
   D. Respiration
17. Homeostasis is the
A. inability to keep body weight within normal limits.
B. 

decrease in room temperature 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.

18. 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. Retention of fluid leading to retention of more fluid.
D. Secreting insulin after a meal to return blood sugar concentration toward normal.

19. 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

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

21. 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.

22. 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
23.

Homeostasis exists if concentrations of water, nutrients, and oxygen in the body are balanced 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

24.

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.

25. 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.

26. 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

27. Which of the following organs is in the abdominopelvic cavity?

A. The heart  
B. The trachea  
C. The thymus  
D. The liver
28. The membrane on the surface of a lung is called the
A. visceral pleura.
B. parietal pleura.
C. visceral pericardium.
D. parietal pericardium.

29. 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

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

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

32. 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

33. 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.
34. Wrinkled and sagging skin results from
A. drinking too much water.
B. heredity only.
C. loss of subcutaneous fat, elastin, and collagen.
D. excess subcutaneous fat.

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

36. The upper midportion of the abdomen is called the ____ region.
A. hypochondriac
B. iliac
C. hypogastric
D. epigastric

37. 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.

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

39. The anatomy of a body part is closely related to its physiology.
True    False
40. Cells with similar functions aggregate into organelles.
   True    False

41. Macromolecules are built of atoms.
   True    False

42. Organ systems consist of organs, which consist of tissues.
   True    False

43. A cell is the basic unit of structure and function of an organism.
   True    False

44. Metabolism consists of all of the chemical reactions in an organism that support life.
   True    False

45. Absorption is the ability to exhale carbon dioxide.
   True    False

46. Temperature is a form of energy, whereas heat is a measurement of the intensity of the temperature.
   True    False

47. Homeostasis is the body's maintenance of an unstable internal environment.
   True    False

48. The diaphragm separates the thoracic and the abdominopelvic cavities.
   True    False

49. The parietal pericardium is attached to the surface of the heart.
   True    False
50. The parietal pleura is a visceral membrane.
True    False

51. Which of the following is not one of the four basic types of body tissues?
A. Epithelial tissue
B. Connective tissue
C. Eye tissue
D. Muscle tissue

52. Which of the following characteristics is used to name tissue types?
A. Location of cells in the body
B. Number of inclusions
C. Organization of cells
D. Number of mitochondria

53. Histology is the study of
A. organ function.
B. molecules.
C. cells.
D. tissues.

54. The type of intercellular junction that consists of fused membranes is a(an)
A. desmosome.
B. gap junction.
C. tight junction.
D. ion channel.

55. A basement membrane anchors
A. muscle tissue to nervous tissue.
B. epithelial tissue to connective tissue.
C. connective tissue to muscle tissue.
D. brain tissue to nervous tissue.
56. Epithelial tissue functions in
A. secretion, absorption, and protection.
B. contraction, movement, and reflexes.
C. reacting to stimuli, thinking, and remembering.
D. nourishing and hydrating tissues.

57. The tissue through which gases are exchanged between the blood and the air in the lungs is
A. stratified squamous epithelium.
B. simple squamous epithelium.
C. simple cuboidal epithelium.
D. simple columnar epithelium.

58. The tissue that forms the inner lining of the respiratory passages is
A. mucus-secreting and transitional.
B. stratified, sputum-secreting, and non-ciliated.
C. mucus-secreting, ciliated, and pseudostratified.
D. serous fluid-secreting, simple, and columnar.

59. The type of epithelium that lines the urinary bladder and many of the urinary passageways is
A. cuboidal.
B. transitional.
C. pseudostratified.
D. columnar.

60. A carcinoma is a cancer originating from
A. epithelium.
B. connective tissue.
C. muscle tissue.
D. nerve tissue.

61. Which type of tissue lines the follicles of the thyroid glands?
A. Simple squamous epithelium
B. Simple cuboidal epithelium
C. Stratified cuboidal epithelium
D. Glandular epithelium
62. Areolar tissue contains
A. many adipocytes filled with fat.
B. collagenous fibers, elastic fibers, and gel-like ground substance.
C. chondrocytes and lacunae.
D. osteocytes, osteoblasts, and canaliculi.

63. Tendons and ligaments are composed primarily of
A. dense irregular tissue.
B. reticular connective tissue.
C. muscle tissue.
D. dense regular connective tissue.

64. Cartilage tissues are likely to be slow in healing following an injury because
A. chondrocytes cannot divide.
B. chondrocytes do not have direct blood supplies.
C. the intercellular material is semisolid.
D. cartilage cells are immersed in fluids.

65. Bone cells form concentric circles around longitudinal tubes called
A. osteons.
B. central canals.
C. lacunae.
D. canaliculi.

66. _______ produce connective tissue fibers.
A. Macrophages
B. Mast cells
C. Fibroblasts
D. osteoclasts
67. Collagen is a major component of
A. bone.
B. ligaments and tendons.
C. connective tissue.
D. all of the above.

68. Elastic connective tissue forms
A. bones.
B. branching networks or parallel strands.
C. cartilage.
D. ligaments and tendons.

69. A general characteristic of connective tissue is that it
A. consists of cells with much extracellular material.
B. has no blood supply.
C. covers the outside of organs.
D. lines organs.

70. Adipose tissue is a form of
A. epithelium.
B. muscle.
C. nervous tissue.
D. connective tissue.

71. Bone tissue contains abundant
A. fibronectin.
B. laminin.
C. fibrocartilage.
D. collagen.

72. Extracellular matrix consists of
A. ground substance and protein fibers.
B. fixed cells and wandering cells.
C. heparin and keratin.
D. lacunae and lamellae.
73. Epithelial membranes are typically composed of
A. connective tissue and underlying muscle tissue.
B. epithelium and underlying connective tissue.
C. connective tissue and underlying epithelium.
D. epithelium and underlying muscle tissue.

74. A _______ membrane lines tubes and cavities that open to the outside of the body.
   A. serous
   B. cutaneous
   C. synovial
   D. mucous

75. A serous membrane consists of a
   A. layer of simple squamous epithelium and a thin layer of areolar tissue.
   B. layer of pseudostratified epithelium and a thick layer of areolar tissue.
   C. layer of simple squamous epithelium and a thick layer of dense connective tissue.
   D. layer of simple squamous epithelium and a thick layer of cartilage.

76. "Cutaneous membrane" refers to
   A. skin.
   B. bones.
   C. cartilage.
   D. mucus.

77. There are ___ types of muscle cells.
   A. 2
   B. 3
   C. 4
   D. 5

78. Involuntary muscle tissues are
   A. smooth muscle tissue and skeletal muscle tissue.
   B. cardiac muscle tissue and skeletal muscle tissue.
   C. smooth muscle tissue and cardiac muscle tissue.
   D. smooth muscle tissue, skeletal muscle tissue, and cardiac muscle tissue.
79. Muscle cells with more than one nucleus are
A. smooth muscle cells and skeletal muscle cells.
B. cardiac muscle cells and smooth muscle cells.
C. skeletal muscle cells only.
D. smooth muscle cells only.

80. The muscle tissue that can be consciously controlled is
A. smooth muscle tissue.
B. skeletal muscle tissue.
C. intestinal muscle tissue.
D. cardiac muscle tissue.

81. Smooth muscle is found in the wall of the
A. stomach.
B. intestine.
C. stomach and intestine.
D. kidney and liver.

82. The type of muscle tissue in blood vessels is
A. cardiac muscle tissue.
B. smooth muscle tissue.
C. skeletal muscle tissue.
D. voluntary muscle tissue.

83. Which of the following is not true about the extracellular matrix?
A. It is the same in all tissues.
B. In epithelium it consists of a basement membrane and interstitial matrix.
C. In many body parts it includes various glycoproteins.
D. It may include integrins.

84. Tissues are groups of cells that have a common overall function, yet are distinctive in their characteristic cell types and the molecules that the cells produce.
True    False

85. The wall of the heart is made up of three layers, including the middle layer responsible for the heart's pumping action. These layers are all the same tissue type, epithelium.
True    False
86. All tissue types are tightly packed, built of cells attached by intercellular junctions.
True  False

87. Usually epithelial tissues do not have blood vessels.
True  False

88. A mucus-secreting goblet cell is a unicellular gland.
True  False

89. The tissue that forms the outermost layer of the skin is a type of connective tissue.
True  False

90. The soft part of the nose and the supporting rings of the respiratory passages are composed of fibrocartilage.
True  False

91. Osteoblasts become osteocytes.
True  False

92. Serous membranes and mucous membranes consist of epithelium and connective tissue.
True  False

93. Smooth muscle tissue actions are voluntary.
True  False

94. Skeletal muscle lines hollow organs.
True  False

95. A skeletal muscle fiber contains many nuclei.
True  False
96. Skin is a mucous membrane.  
True    False

97. Bone cells (osteocytes) are in concentric circles around osteonic canals.  
True    False

98. White blood cells may become macrophages.  
True    False

99. Histology is the study of the history of anatomy and physiology.  
True    False

100. Intercellular junctions include gap junctions, tight junctions, and desmosomes.  
True    False