***Hole's Human Anatomy & Physiology, 15e* (Shier)**

**Chapter 1 Introduction to Human Anatomy and Physiology**

1) Signs of aging at the cellular level are **(Select all that apply)**

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.

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.

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.

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

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.

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."

7) The recent discovery of taste receptors in the small intestine that detect sweetness 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 levels are of little interest in anatomy and physiology.

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.

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

10) In all organisms, the basic unit of structure and function is

A) the atom.

B) the molecule.

C) the macromolecule.

D) the cell.

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.

12) Simple squamous epithelium is an example of a(n)

A) organ system.

B) organ.

C) tissue.

D) molecule.

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.

14) The ability of an organism to sense and react to changes in its body illustrates

A) circulation.

B) respiration.

C) responsiveness.

D) absorption.

15) The removal of wastes produced by metabolic reactions is

A) metabolism.

B) absorption.

C) assimilation.

D) excretion.

16) Which of the following characteristics of life and their descriptions is 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

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

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

19) Which of the following processes is most important to the continuation of the human species?

A) Responsiveness

B) Movement

C) Reproduction

D) Respiration

20) 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.

21) Which of the following is **not** an example of a negative 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

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

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.

24) You accidentally cut your hand. Blood platelets in the area begin to attach to the broken blood vessels in the wound. What needs to happen next to create a positive feedback mechanism?

A) The platelets change shape to encourage more to rush in and stick to each other to form plugs over the broken vessels.

B) The action of platelets sticking to the broken area signals for blood to stop flowing to that area, stopping the bleeding.

C) The sensation of pain in your hand causes your muscles to jerk your hand away from the danger.

D) The platelets send signals to the brain to slow heart rate and slow the bleeding.

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

26) 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

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.

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.

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

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.

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 choices are correct.

32) Which of the following diseases would originate in the abdominopelvic cavity?

A) Asthma

B) Laryngitis

C) Myopia (near-sightedness)

D) Pancreatitis

33) Pneumothorax (collapsed lung) is a condition that occurs when space forms between the lung and the wall of the pleural cavity. This space would be between \_\_\_\_\_\_\_\_.

A) the parietal pleura and visceral pleura

B) parietal pleura and the visceral pericardium

C) visceral pericardium and the parietal pericardium

D) parietal pericardium and the parietal pleura

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

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

36) The thoracic cavity lies \_\_\_\_\_\_\_\_the abdominopelvic cavity.

A) dorsal (posterior) to

B) ventral (anterior) to

C) superior to

D) inferior to

37) Blood cells are produced in the organs of the \_\_\_\_\_\_\_\_system.

A) endocrine

B) skeletal

C) respiratory

D) muscular

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

39) Cell death first occurs

A) at age 60.

B) at age 50.

C) at puberty.

D) in the fetus.

40) 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.

41) 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.

42) A body has been sectioned in such a way that there is one whole lung per section and the urinary bladder has been split in half. What type of section is this?

A) Frontal

B) Transverse

C) Coronal

D) Sagittal

43) The upper midportion of the abdomen is called the \_\_\_\_\_\_\_\_ region.

A) hypochondriac

B) iliac

C) hypogastric

D) epigastric

44) 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.

45) Paired organs that are bilateral on the left-right plane of the body would be separated by a sagittal section.

46) The anatomical term that indicates a structure close to the surface is

A) anterior.

B) proximal.

C) superficial.

D) superior.

47) 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.

48) Magnetic resonance imaging uses

A) X-rays.

B) radio waves.

C) radioisotopes.

D) high-frequency sound waves.

49) 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.

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

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

52) 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.

53) Cadaver dissection is against the law in the United States.

54) The anatomy of a body part is closely related to its physiology.

55) We know all there is to know about the structure and function of the human body.

56) Cells with similar functions aggregate into organelles.

57) Macromolecules are built of atoms.

58) Organ systems consist of organs, which consist of tissues.

59) A cell is the basic unit of structure and function of an organism.

60) The chemical reaction of blood oxygenation is an example of a metabolic process.

61) Absorption is the ability to exhale carbon dioxide.

62) Reproduction is the change in body characteristics over time.

63) Oxygen is the primary raw material for new living material.

64) Temperature is a form of energy, whereas heat is a measurement of the intensity of the temperature.

65) Homeostasis is the body's maintenance of an unstable internal environment.

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

67) The diaphragm separates the thoracic and the abdominopelvic cavities.

68) The parietal pericardium is attached to the surface of the heart.

69) The organ systems responsible for integration and coordination are the nervous and endocrine systems.

70) Kidneys are part of the lymphatic system.

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

72) The digestive system filters wastes from the blood.

73) The parietal pleura is a visceral membrane.

74) Aging begins in the fetus.

75) Chromosomes get longer as a cell ages.

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

77) The ears are lateral to the eyes.

78) The elbow is distal to the wrist.

79) The anatomical position is lying down, as a cadaver would be positioned.

80) The following list accurately represents levels of organization in the body from smallest to

largest: nucleus → chromosome → liver cell→ liver epithelial tissue → liver→ digestive system

81) The head is superior to the neck.

82) An elderly person would be less vulnerable to emerging influenzas and other seasonal viruses due to increased cell efficiency and heightened cell division.

83) A researcher has questions about the functions of the greater omentum, an organ found in the abdominal cavity. They begin researching its various functions. This researcher is studying the physiology of the organ.

84) A researcher has questions about the structure of the mesentery, a tissue connecting the intestines to the wall of the abdominal cavity. They begin researching its location, components, and its specific structures. This researcher is studying the physiology of the organ.

85) Agriculture began in some countries as recently as \_\_\_\_\_\_\_\_ years ago.

86) Dissection of human bodies became part of formal medical school coursework in the \_\_\_\_\_\_\_\_ century.

87) The branch of science that deals with the structure of human body parts is called \_\_\_\_\_\_\_\_.

88) The branch of science that deals with the functions of human body parts is called \_\_\_\_\_\_\_\_.

89) A group of cells with common properties that are organized into a layer or mass is a(n) \_\_\_\_\_\_\_\_.

90) A subcellular structure built of assemblies of macromolecules that carries out a particular function is a(n) \_\_\_\_\_\_\_\_.

91) The process by which food substances are chemically changed into simpler forms that can be absorbed is called \_\_\_\_\_\_\_\_.

92) The term \_\_\_\_\_\_\_\_ refers to an increase in body size without overall shape change.

93) The most abundant molecule in the human body is \_\_\_\_\_\_\_\_.

94) Self-regulating control mechanisms usually operate by a process called \_\_\_\_\_\_\_\_ feedback.

95) The potential space between the \_\_\_\_\_\_\_\_  membranes is called the pleural cavity.

96) The chemicals secreted by endocrine glands are called \_\_\_\_\_\_\_\_.

97) Deep vein thrombosis, heart attack, and high blood pressure are all diseases of the \_\_\_\_\_\_\_\_ system.

98) Individuals who live more than 100 years are called \_\_\_\_\_\_\_\_.

99) Standing erect with face and palms forward and upper limbs at the sides describes the \_\_\_\_\_\_\_\_ position.

100) A lengthwise cut that divides the body into right and left portions is termed \_\_\_\_\_\_\_\_.