

Student name: _____

TRUE/FALSE - Write 'T' if the statement is true and 'F' if the statement is false.

1) Feeling for swollen lymph nodes is an example of auscultation.

- ☐ true
- ☐ false

2) We can see through bones with magnetic resonance imaging (MRI).

- ☐ true
- ☐ false

3) Histology is the study of structures that can be observed without a magnifying lens.

- ☐ true
- ☐ false

4) Cells were first named by microscopist Robert Hooke.

- ☐ true
- ☐ false

5) All functions of the body can be interpreted as the effects of cellular activity.

- ☐ true
- ☐ false

⊙ true

7) An individual scientific fact has more information than a theory.

- ☐ true
- ☐ false

8) Evolutionary (Darwinian) medicine traces some of our diseases to our evolutionary past.

- ☐ true
- ☐ false

9) The terms *development* and *evolution* have the same meaning in physiology.

- ☐ true
- ☐ false

10) Organs are made of tissues.

- ☐ true
- ☐ false

11) A molecule of water is more complex than a mitochondrion (organelle).

- ☐ true
- ☐ false

12) Homeostasis and occupying space are both unique characteristics of living things.

- ☐ true
- ☐ false

13) Negative feedback is a self-amplifying chain of events that tends to produce rapid

- ☐ true
- ☐ false

14) Positive feedback helps to restore normal function when one of the body's physiological variables gets out of balance.

- ☐ true
- ☐ false

15) Anatomists around the world adhere to a lexicon of standard international terms which stipulates both Latin

names and accepted English equivalents.

- ☐ true
- ☐ false

16) Lou Gehrig disease is the eponym for Amyotrophic Lateral Sclerosis, made famous by the "ice bucket challenge."

- ☐ true
- ☐ false

17) Sometimes anatomical terms come from origins that do **not** lend any insight into their meaning.

- ☐ true
- ☐ false

MULTIPLE CHOICE - Choose the one alternative that best completes the statement or answers the question.

18) The study of normal body structures is called _____.

- A) physiology
- B) anatomy

- C) pathology
- D) microscopy
- E) biology

19) The study of how the body functions is called _____.

- A) neuroanatomy
- B) anatomy

- C) chemistry
- D) histology
- E) physiology

20) Feeling structures with your fingertips is called _____, whereas tapping on the body and listening for

- A) palpation; auscultation
- B) auscultation; percussion
- C) percussion; auscultation

sounds of abnormalities is called _____.

- D) palpation; percussion
- E) percussion; palpation

21) Which of these is the best imaging technique for routinely examining the anatomical development of a fetus?

- A) Auscultation
- B) PET scan

- C) MRI
- D) Sonography
- E) Radiography

22) The study of the structure and function of cells is called _____.

- A) cytology
- B) gross anatomy
- C) exploratory physiology

- D) comparative physiology
- E) radiology

23) Ultrastructure refers to the detailed structure to the level of the _____.

- A) molecule
- B) cell

- C) organelle
- D) tissue
- E) organ

24) The study of how hormones function is called _____.

- A) neuroanatomy
- B) neurophysiology
- C) endocrinology

- D) histology
- E) pathophysiology

25) The study of mechanism of disease is called _____.

- A) neuroanatomy
- B) neurophysiology
- C) endocrinology

- D) histology
- E) pathophysiology

26) The terms *physics*, *physiology*, and *physician* come from a term _____ proposed to distinguish natural

causes from supernatural causes.

- A) Hippocrates
- B) Plato

- C) Schwann
- D) Aristotle
- E) Avicenna

27) Who was a physician to the Roman gladiators, learned by dissection of animals, and saw science as a method of discovery?

- A) Hippocrates
- B) Plato

- C) Schwann
- D) Aristotle
- E) Galen

28) Known as "the father of modern anatomy," _____ was the first to publish accurate drawings of the body.

- A) Vesalius
- B) Maimonides
- C) Harvey

- D) Aristotle
- E) van Leeuwenhoek

29) The most influential medical textbook of the ancient era was written by _____.

- A) Hippocrates
- B) Aristotle

- C) Galen
- D) Vesalius
- E) Avicenna

30) Who established a code of ethics for physicians and is considered the "father of medicine"?

- A) Aristotle
- B) Hippocrates

- C) Galen
- D) Vesalius
- E) Hooke

31) What is the process of using numerous observations to develop general principles and predictions about a specific subject called?

- A) Experimental design
- B) The deductive method
- C) The inductive method

- D) A hypothesis testing
- E) Statistical testing

32) Most people think that ulcers are caused by

psychological stress. It was discovered that an acid-resistant bacterium, *Helicobacter pylori*, lives in the lining of the stomach. If these bacteria cause ulcers, then treatment with an

- A) hypothetical reasoning
- B) hypothetico-deductive reasoning
- C) the inductive method

antibiotic should reduce ulcers. This line of investigation is an example of _____.

- D) experimental design
- E) statistical analysis

33) The use of controls and statistical testing are two aspects of experimental design that help to ensure _____.

- A) an adequate sample size
- B) objective and reliable results
- C) experimental bias

- D) psychosomatic effects
- E) treatment groups

34) Which process submits a scientist's ideas to the critical judgment of other specialists in the field before the research is funded or published?

- A) Adjudication
- B) Statistical testing
- C) Falsification

- D) Peer review
- E) Hypothetico-deductive testing

35) A new drug apparently increases short-term memory. Students were divided randomly into two groups at the beginning of the semester. One group was given the memory pill once a day for the semester, and the other group was

given a same-looking pill, but it was just sugar. The sugar pill is termed a(n) _____.

- A) controlled pill
- B) placebo

- C) treatment pill
- D) variable
- E) effective dose

36) Two groups of people were tested to determine whether garlic lowers blood cholesterol levels. One group was given 800 mg of garlic powder daily for four months and exhibited an average 12% reduction in the blood cholesterol. The other group was not given any garlic and after four

- A) peer
- B) test

months averaged a 3% reduction in cholesterol. The group that was not given the garlic was the _____ group.

- C) treatment
- D) control
- E) double-blind

37) An educated speculation or a possible answer to a question is called a(n) _____.

- A) scientific method
- B) theory

- C) law
- D) hypothesis
- E) fact

38) Which of the following would contain the greatest amount of information that scientists consider to be true to the best of their knowledge?

- A) A fact
- B) A law of nature

- C) A hypothesis
- D) An equation
- E) A theory

39) If a species of animal evolves over generations to grow a large fan-blade like growth on its back to catch the wind and cool its body, this would be an example of responding to _____.

- A) selection pressure
- B) adaptation
- C) natural selection

- D) climate

change

E) positive feedback

40) What is a change in the genetic composition of a population over time called?

- A) Mutation
- B) Natural selection
- C) Selection pressure

- D) Evolution
- E) Adaptation

41) The constant appearance of new strains of influenza virus is an example of _____.

- A) a model
- B) evolution
- C) selection pressure

- D) survivorship
- E) success

42) What is the principal theory of how evolution works?

- A) Natural pressure
- B) Selective pressure
- C) Darwinian pressure

- D) Natural adaptation
- E) Natural selection

43) Stereoscopic vision provides _____.

- A) opposable perception
- B) color perception
- C) depth perception

- D) bipedalism
- E) opposition of thumbs

44) Most primates are _____, meaning they live in trees.

- A) prehensile

- B) bipedal
- C) cursorial

D) troglodytic

E) arboreal

45) Which of the following was an adaptation that evolved in connection with human upright walking?

A) Hair

B) Fully opposable thumbs

C) Stereoscopic vision

D) Color vision

E) Spinal and pelvic anatomy

46) A human is born before his/her nervous system has matured. This is traceable to _____.

A) their inability to regulate body temperature

B) skeletal adaptations to bipedalism

C) the arboreal habits of early primates

D) the conditions of modern civilization

E) the diet of early species of Homo

47) What is the species of modern humans?

A) *Homo erectus*

B) *Homo sapiens*

C) *Homo habilis*

D) *Neanderthal*

E) *Australopithecus*

48) An _____ is composed of two or more tissues types, whereas _____ are microscopic structures in a cell.

A) organ system; organs

B) organ system; organelles

C) organ; organelles

D) organ; molecules

E) organelle; molecules

49) Which of the following lists levels of human structure from the *most complex to the simplest*?

- A) Organelle, cell, tissue, organ, organ system
- B) Organ system, organ, cell, tissue, organelle
- C) Organ system, organelle, tissue, cell, organ
- D) Organ system, organ, tissue, cell, organelle

E) Organ, organ system, tissue, cell, organelle

50) Which of the following lists examples of body structures from the *simplest to the most complex*?

- A) Mitochondrion, connective tissue, protein, stomach, adipocyte (fat cell)
- B) Protein, mitochondrion, adipocyte (fat cell), connective tissue, stomach
- C) Mitochondrion, connective tissue, stomach, protein, adipocyte (fat cell)
- D) Protein, adipocyte (fat cell), stomach, connective

tissue, mitochondrion

E) Protein, stomach, connective tissue, adipocyte (fat cell), mitochondrion

51) A(n) _____ is a group of similar cells and their intercellular materials in a discrete region of an organ

- A) macromolecule
- B) organ system

performing a specific function.

- C) organelle
- D) organism
- E) tissue

52) All of the following are human organ systems *except* _____.

- A) skeletal
- B) endocrine

- C) epidermal
- D) reproductive
- E) lymphatic

53) All of the following are organs *except* _____.

- A) teeth
- B) the skin
- C) nails

- D) the liver
- E) the digestive system

54) Taking apart a clock to see how it works is similar to _____ thinking about human physiology.

- A) comparative
- B) evolutionary

- C) holistic
- D) inductive
- E) reductionist

55) Which of the following approaches understanding the human body by studying the interactions of its parts?

- A) Naturalism
- B) Reductionism

- C) Vitalism
- D) Holism
- E) Rationalism

56) What is the view that not everything about an organism can be understood or predicted from the knowledge of its components; that is, the whole is greater than the sum of its parts?

- A) Naturalism
- B) Reductionism

- C) Holism
- D) Materialism
- E) Science

57) The fact that most of us have five lumbar vertebrae, but some people have six and some have four, is an example

- A) Cellular

of what type of variation among organisms?

- B) Holistic
- C) Physiological

D) Anatomical

E) Reductionist

58) Why does a surgeon need to be familiar with different versions of anatomy?

- A) Cellular adaptation
- B) Holistic medicine
- C) Physiological variation

- D) Anatomical variation
- E) Evolutionary adaptation

59) What are the simplest body structures considered alive?

- A) Organ systems
- B) Organs

- C) Cells
- D) Organelles
- E) Molecules

60) Metabolism is the sum of all _____ change.

- A) external physical
- B) external chemical
- C) internal chemical

- D) internal physical
- E) internal integrative

61) The change in size of the bone marrow (where blood cells are produced) as an infant matures is an example of _____, whereas the transformation of blood stem cells

into white blood cells is an example of _____.

- A) development; differentiation
- B) growth; development
- C) growth; differentiation

- D) differentiation; growth
- E) differentiation; development

62) A hemoglobin level of 12g/dL is normal for an adult female, but low for an adult male. What is this an example of?

- A) Cellular adaptation
- B) Holistic medicine
- C) Physiological variation

- D) Anatomical variation
- E) Structural differentiation

63) Which of the following is *not* an aspect that could result in physiological variation?

- A) Age
- B) Gender
- C) Environment
- D) Physical activity

- E) These are all aspects that can cause physiological variation.

64) We live in an ever-changing environment outside of our body, yet our internal conditions remain relatively stable. This is called _____.

- A) homeostasis
- B) metastasis

- C) responsiveness
- D) adaptation
- E) evolution

65) What are the three common components of a feedback loop?

- A) Stimulus, integrating (control) center, and organ system
- B) Stimulus, receptor, and integrating (control) center
- C) Receptor, integrating (control) center, and

effector

- D) Receptor, organ, and organ system
- E) Receptor, integrating (control) center, and organ system

66) During exercise, one generates excess heat and the body temperature rises. As a response, blood vessels dilate in the skin, warm blood flows closer to the body surface, and

- A) negative feedback
- B) positive feedback
- C) dynamic equilibrium

heat is lost. This is an example of _____.

- D) integration control
- E) set point adjustment

67) Blood glucose concentration rises after a meal and stimulates the pancreas to release the hormone insulin. Insulin travels in the blood and stimulates the uptake of glucose by body cells from the bloodstream, thus reducing blood glucose

- A) negative feedback
- B) positive feedback
- C) dynamic equilibrium

concentration. This is an example of _____.

- D) integration control
- E) set point adjustment

68) Negative feedback loops are _____.

- A) homeostatic mechanisms
- B) not homeostatic mechanisms
- C) associated with "vicious circles"

- D) self-amplifying cycles
- E) usually harmful

69) When a woman is giving birth, the head of the baby pushes against her cervix and stimulates the release of the hormone oxytocin. Oxytocin travels in the blood and stimulates the uterus to contract. Labor contractions become

- A) negative feedback
- B) positive feedback

more and more intense until the baby is expelled. This is an example of _____.

- C) dynamic equilibrium
- D) integration

control

- E) set point adjustment

70) Which of the following is *most likely* to cause disease?

- A) Positive feedback
- B) Negative feedback
- C) Homeostasis
- D) Equilibrium
- E) Irritability

71) A physiological _____ is a difference in chemical concentration, electrical charge, physical pressure, temperature, or other variables between one point and another.

- A) gradient
- B) barrier
- C) membrane
- D) imbalance
- E) feedback loop

72) Chemicals in a solution can move down a concentration gradient. This means the chemical will move from the area of _____ concentration to the area

of _____ concentration.

- A) higher; lower
- B) lower; higher
- C) equal; equal
- D) lower; lower
- E) higher; higher

73) Which of the following is *not* an example of a physiological gradient?

- A) Tissue
- B) Thermal
- C) Concentration
- D) Pressure
- E) Electrical

74) What type of gradient causes the movement of ions due to *both charge and concentration* differences?

- A) Electrochemical gradient
- B) Thermal gradient
- C) Concentration gradient

- D) Pressure gradient
- E) Osmotic gradient

75) Modern anatomical language is based on what two languages because individuals speaking these languages made

- A) Greek and Latin
- B) English and Japanese
- C) English and Spanish

most of the early anatomical discoveries?

- D) Roman and Latin
- E) Latin and Chinese

76) The term *fallopian* tube (uterine tube) is an example of _____.

- A) a Latin root used in medical terminology
- B) the use of prefixes to name an anatomical structure
- C) the use of suffixes to name an anatomical structure

structure

- D) an eponym
- E) an acronym

77) The lexicon of standard international anatomical terms is _____.

- A) called *Terminologia Anatomica* (TA)
- B) called *Nomina Anatomica* (NA)
- C) formed from thousands of English word roots
- D) formed from thousands of Italian word roots

- E) formed from thousands of French word roots

78) The prefix *hypo-* means _____, whereas *hyper-* means _____.

- A) front; back
- B) right; left

- C) inside; outside
- D) clear; dark
- E) below; above

79) What does "hypercalcemia" mean?

- A) Elevated calcium levels
- B) Lowered calcium levels
- C) Elevated sodium levels

- D) Lowered sodium levels
- E) Elevated potassium levels

80) DNA is an example of an _____, whereas PET scan is an example of an _____.

- A) abbreviation; acronym
- B) acronym; abbreviation
- C) eponym; acronym

- D) acronym; eponym
- E) eponym; abbreviation

81) The plural of axilla (armpit) is _____, whereas the plural of appendix is _____.

- A) axillae; appendices
- B) axillides; appendages
- C) axillies; appendi

- D) axilli; appendices
- E) axilles; appendices

82) The plural of villus (hair) is _____, whereas the plural of diagnosis is _____.

- A) villuses; diagnoseses

- B) villi; diagnoses

- C) villus; diagnosis
- D) villi; diagnosis

- E) villuses; diagnosis

83) Why is precise spelling important in anatomy?

- A) It is important to practice language skills.
- B) There are many different ways to spell certain terms.
- C) Eponyms are difficult to memorize.
- D) There are many similar terms in anatomy that

refer to different structures.

- E) It is easier to remember acronyms when spelled correctly.

84) The ileum is _____, whereasthe ilium is _____.

- A) part of the hip bone; part of the small intestine
- B) part of the small intestine; part of the hip bone
- C) a bone in the wrist; a muscle of the back

- D) a muscle; a bone
- E) a bone; a muscle

85) What is the name of the highlighted organ?

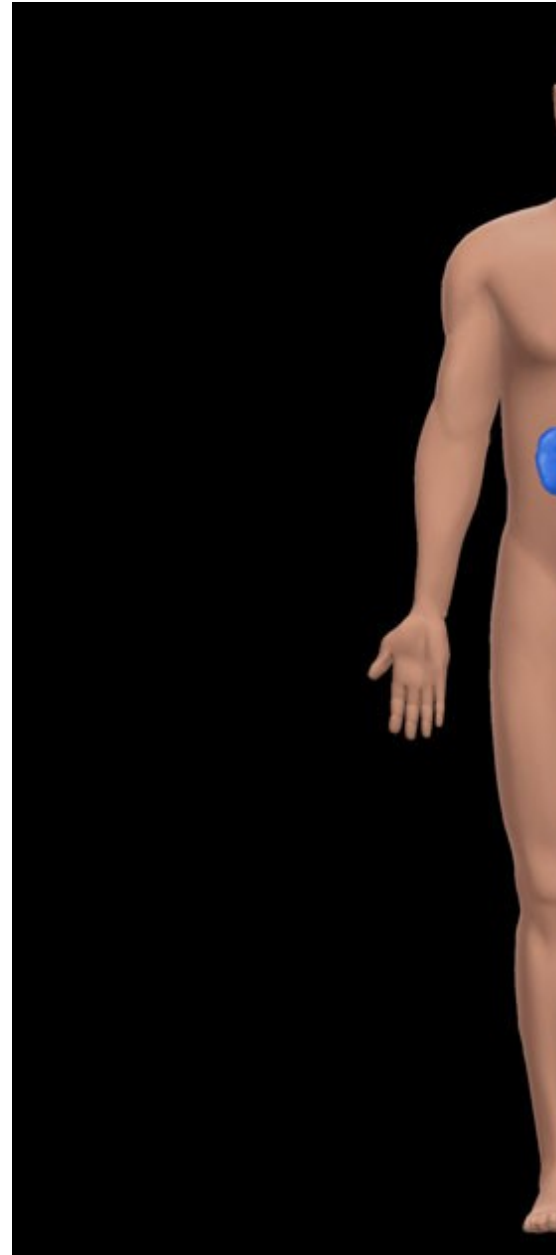


- A) Small intestine
- B) Stomach
- C) Liver

- D) Large intestine
- E) Spleen

86) What is the name of the highlighted organ?

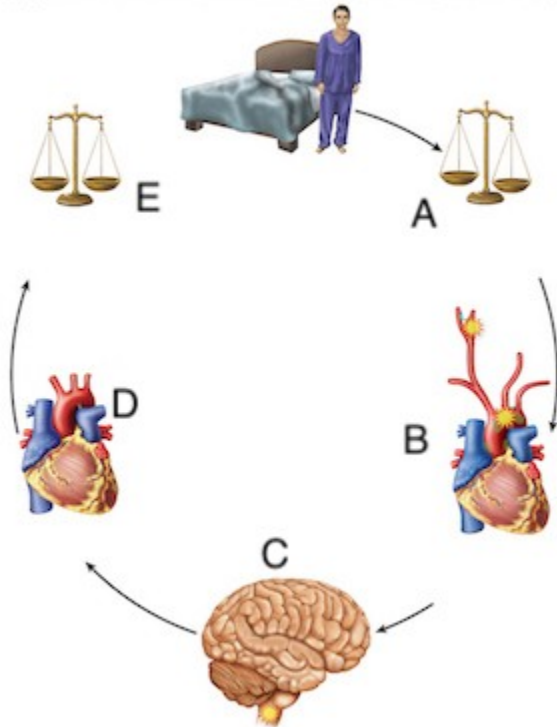
- A) Adrenal gland
- B) Spleen



- C) Liver
- D) Kidney
- E) Pancreas

SECTION BREAK. Answer all the part questions.

87)



87.1) Which letter represents the *receptor* of this feedback loop?

- A) A
- B) B

- C) C
- D) D
- E) E

87.2) Which letter represents the *effector* of this feedback loop?

- A) A
- B) B

- C) C
- D) D
- E) E

87.3) Where in this feedback loop is homeostasis present?

- A) A
- B) B

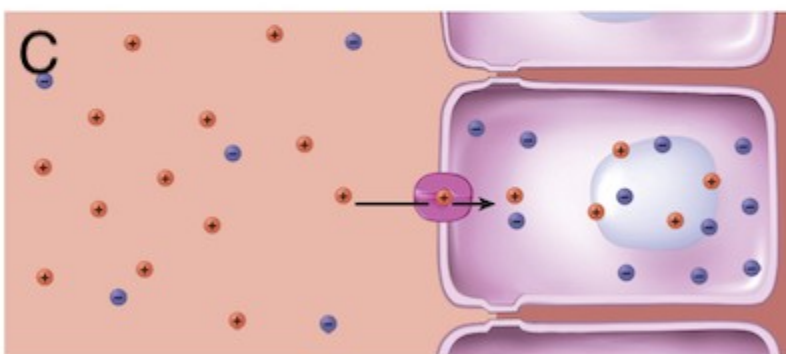
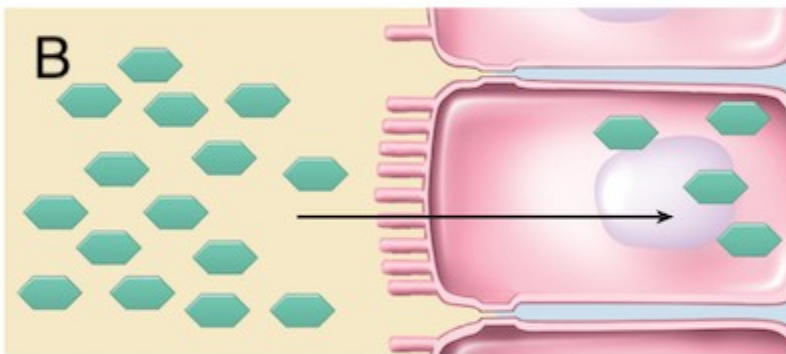
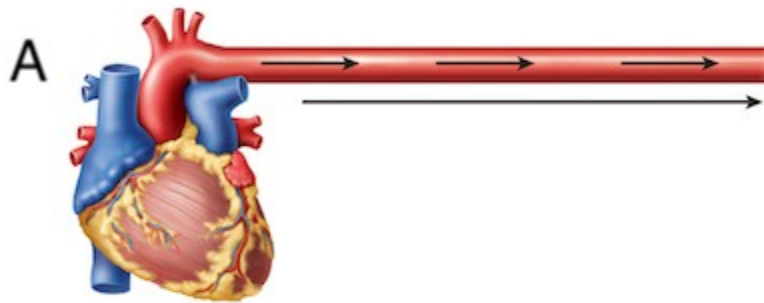
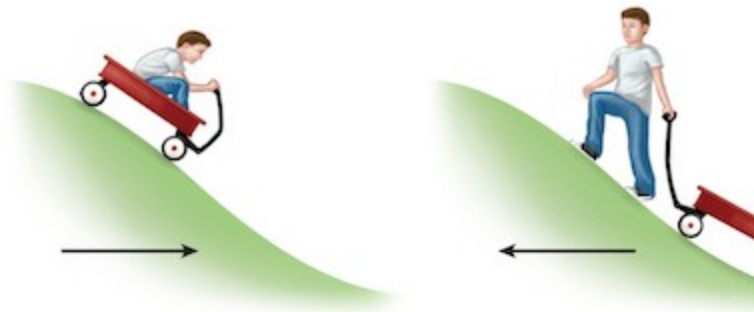
- C) C
- D) D
- E) E

87.4) This feedback loop is an example of which of the following?

- A) Negative feedback
- B) Positive feedback
- C) Dynamic equilibrium

- D) Thermal gradient
- E) Natural selection

88)



88.1) Which letter represents a *pressure* gradient?

- A) A
- B) B
- C) C

- D) D
- E) All of these represent a pressure gradient.

88.2) Which letter represents a *thermal* gradient?

- A) A
- B) B
- C) C

- D) D
- E) All of these represent a thermal gradient.

88.3) Glucose would move down which of these gradients?

- A) A
- B) B
- C) C

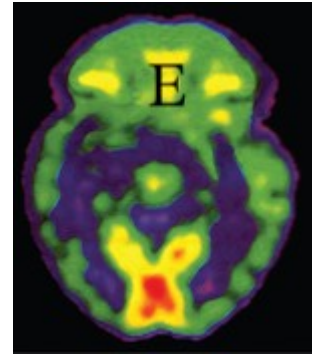
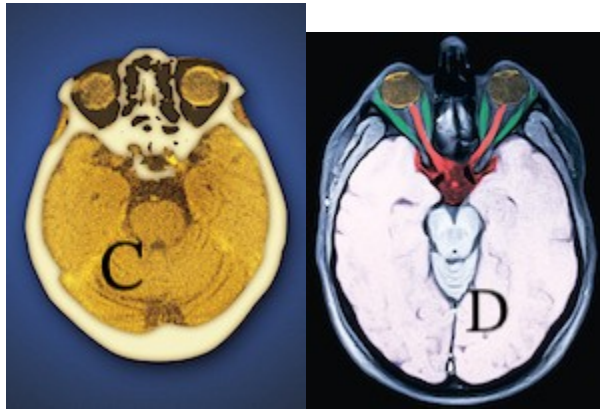
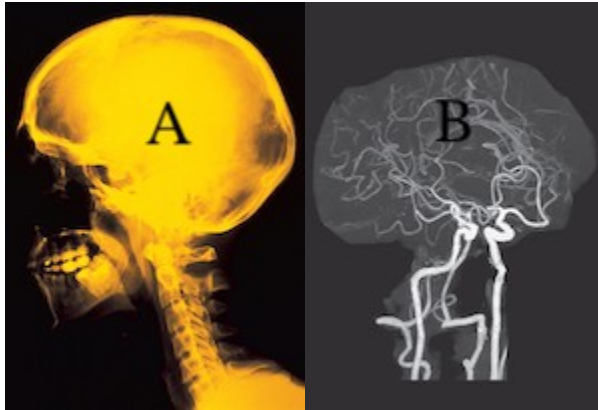
- D) D
- E) Glucose can move via all of these mechanisms.

88.4) Ions would move down which of these gradients?

- A) A
- B) B
- C) C

- D) D
- E) Ions can move via all of these mechanisms.

89)



a:

U.H.B. Trust/The Image Bank/Getty Images; b: pang_oasis/Shutterstock; c: Miriam Maslo/Science Source; d: UHB Trust/Getty Images; e: ISM/Sovereign/Medical Images

89.1) Which image is produced using an X-ray?

- A) A
- B) B

- C) C
- D) D
- E) E

89.2) Which image is produced using Computed Tomography?

- A) A
- B) B

- C) C
- D) D
- E) E

89.3) Which image is produced using Magnetic Resonance Imaging?

- A) A
- B) B

- C) C
- D) D
- E) E

89.4) Which imaging technique would be used to determine the location of a blocked artery?

- A) A
- B) B

- C) C
- D) D
- E) E

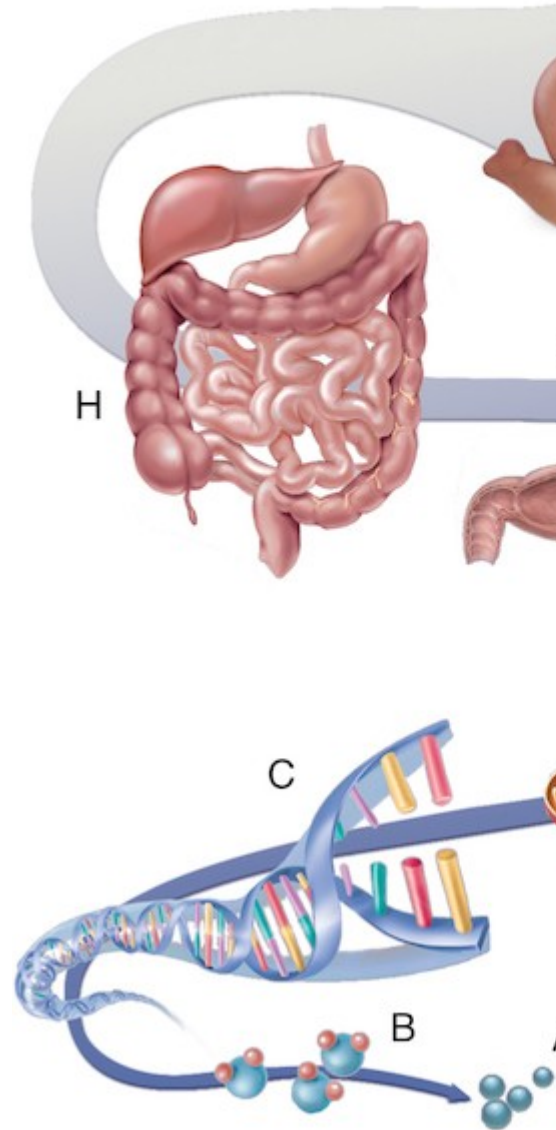
89.5) Which imaging technique would be used to determine the metabolically active areas of the brain?

- A) A
- B) B

- C) C
- D) D
- E) E

90)

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90.1) What level of structural hierarchy is represented by the letter E?

- A) Organelle
- B) Cell

- C) Tissue
- D) Organ
- E) Molecule

90.2) What level of structural hierarchy is represented by the letter H?

- A) Organ system
- B) Cell
- C) Tissue
- D) Organ
- E) Molecule

90.3) What is the study of the structure at E called?

- A) Cytology
- B) Histology
- C) Physiology
- D) Organismal biology
- E) Pathology

90.4) What is the study of the structure at F called?

- A) Cytology
- B) Histology
- C) Physiology
- D) Organismal biology
- E) Pathology

90.5) The integumentary system is an example of which level of structural hierarchy?

- A) A
- B) C
- C) E
- D) H
- E) I

90.6) A lymph node is an example of which level of structural hierarchy?

- A) G
- B) C
- C) E

- D) H
- E) I

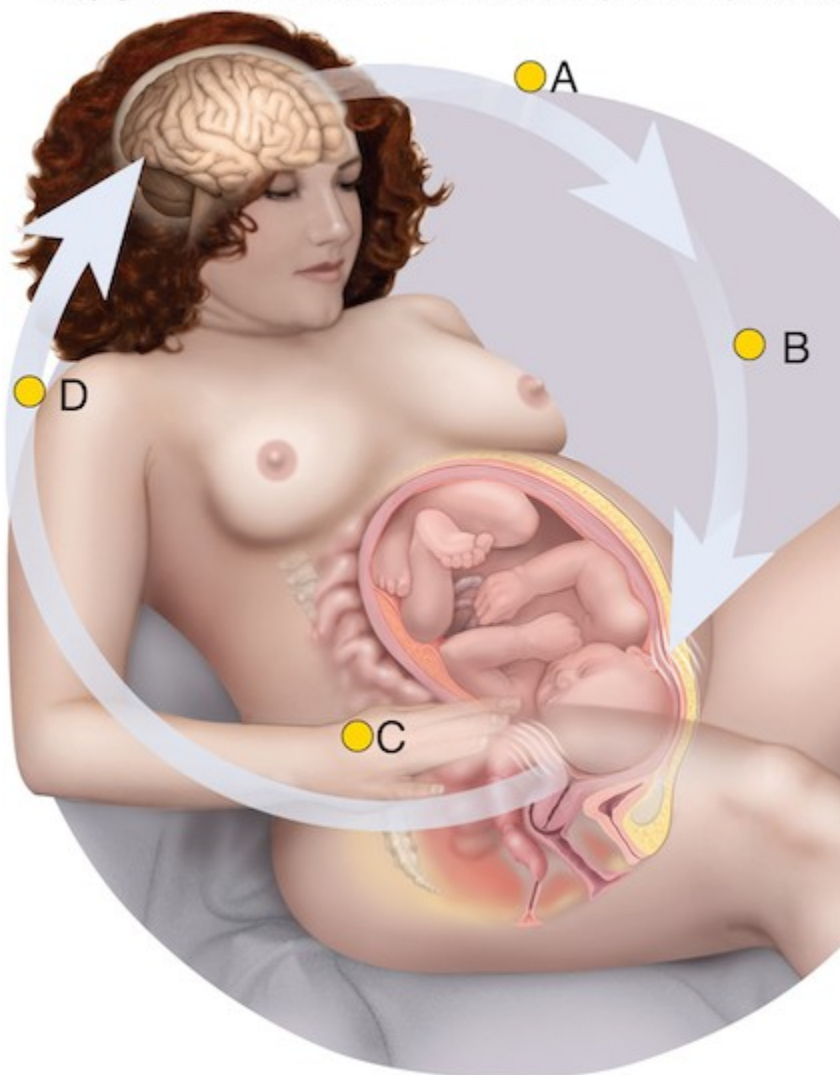
90.7) A ribosome is an example of which level of structural hierarchy?

- A) A
- B) C

- C) E
- D) H
- E) D

91)

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91.1) This is an example of which of the following?

- A) Positive feedback
- B) Negative feedback
- C) Dynamic equilibrium

- D) Adaptation
- E) Natural selection

91.2) In this feedback loop, what is the receptor?

- A) Brain
- B) Oxytocin

- C) Uterus
- D) Ovaries
- E) Adrenal gland

91.3) In this feedback loop, what is the effector?

- A) Cervix
- B) Brain
- C) Oxytocin

- D) Uterine muscles
- E) Ovaries

Answer Key

Anatomy and Physiology

Test name: Chapter 01: Major Themes of

- 1) FALSE
- 2) TRUE
- 3) FALSE
- 4) TRUE
- 5) TRUE
- 6) TRUE
- 7) FALSE
- 8) TRUE
- 9) FALSE
- 10) TRUE
- 11) FALSE
- 12) FALSE
- 13) FALSE
- 14) FALSE
- 15) TRUE
- 16) TRUE
- 17) TRUE
- 18) B

19) E

20) D

21) D

22) A

23) A

24) C

25) E

26) D

27) E

28) A

29) C

30) B

31) C

32) B

33) B

34) D

35) B

36) D

37) D

38) E

39) A

40) D

41) B

42) E

43) C

44) E

45) E

46) B

47) B

48) C

49) D

50) B

51) E

52) C

53) E

54) E

55) B

56) C

57) D

58) D

59) C

60) C

61) C

62) C

63) E

64) A

65) C

66) A

67) A

68) A

69) B

70) A

71) A

72) A

73) A

74) A

75) A

76) D

77) A

78) E

79) A

80) A

81) A

82) B

83) D

84) B

85) C

86) D

87) Section Break

87.1) B

87.2) D

87.3) E

87.4) A

88) Section Break

88.1) A

88.2) D

88.3) B

88.4) C

89) Section Break

89.1) A

89.2) C

89.3) D

89.4) B

89.5) E

90) Section Break

90.1) B

90.2) A

90.3) A

90.4) B

90.5) D

90.6) A

90.7) E

91) Section Break

91.1) A

91.2) A

91.3) D