

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

- 1) Learners who thrive in an environment with visual stimulation, such as looking at diagrams or illustrations, have a preference for a modality known as: 1) _____
A) visual. B) kinesthetic. C) auditory. D) tactile.

Answer: A

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

- 2) Sierra says she learns more from reading the textbook for class than from listening to lecture. She is most likely a(n): 2) _____
A) visual learner. B) tactile learner.
C) auditory learner. D) kinesthetic learner.

Answer: A

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

- 3) Jesse felt comfortable using the microscope after listening to directions from his lab professor. His learning style preference must be: 3) _____
A) tactile learner. B) auditory learner.
C) kinesthetic learner. D) visual learner.

Answer: B

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

- 4) What does the SQ3R method stand for? _____
- A) share, quiz, query, question, and read
 - B) search, quiet, research, read, and remember
 - C) sort, query, read, recite, and review
 - D) survey, question, read, recite, and review

Answer: D

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

- 5) Why should a student use the SQ3R method? _____
- A) The SQ3R method provides a student with a strategy for taking notes during lecture class.
 - B) The SQ3R method provides a student with ways to improve time management skills.
 - C) The SQ3R method provides a plan for a student to improve textbook reading skills.
 - D) The SQ3R method provides a student with a strategy for improving test taking skills.

Answer: C

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

- 6) What is a good way to manage time in preparation for your anatomy and physiology class? _____
- A) I should stay up all night the night before the test to maximize what is stored in short-term memory.
 - B) I make a schedule and budget my time.
 - C) I should delay studying until the day or two before the test to best remember the material.
 - D) I study only on the weekends when I have many hours of free time.

Answer: B

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

- 7) What learning modality is engaged when students participate in study groups? 7) _____
- A) visual learner
 - B) kinesthetic learner
 - C) tactile learner
 - D) auditory learner

Answer: B

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

- 8) What is a good strategy for class or laboratory preparation? 8) _____
- A) Avoid reading before class as you may get confused.
 - B) Only read after you have attended class or laboratory.
 - C) Focus on reading your materials on the weekends when you have hours to spend.
 - D) Read and prepare notes before attending your class or laboratory.

Answer: D

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

- 9) How could you use the Learning Outcomes in this book to help you study? 9) _____
- A) Rewrite each Learning Outcome in your notes.
 - B) Read through the Learning Outcomes after you have completed a section.
 - C) Recite the Learning Outcomes until you have them memorized.
 - D) Write down the answers to the Learning Outcomes.

Answer: D

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

10) What results when anabolism occurs more than catabolism in an organism? 10) _____
A) movement B) excretion C) growth D) irritability

Answer: C

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

11) What is the smallest level of structural organization in the human body? 11) _____
A) tissue level B) cellular level C) chemical level D) organ level

Answer: C

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

12) Which of the following is the most complex structural level of organization? 12) _____
A) tissue level B) organ level C) cellular level D) chemical level

Answer: B

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

13) Which of the following is the correct sequence, from simplest to most complex, in the levels of structural organization of the human body? 13) _____

- A) cellular level, chemical level, tissue level, organ level, organ system level, organismal level
- B) cellular level, tissue level, chemical level, organ level, organ system level, organismal level
- C) chemical level, cellular level, tissue level, organ level, organ system level, organismal level
- D) chemical level, tissue level, cellular level, organ system level, organ level, organismal level

Answer: C

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

14) In laboratory, you will study the overall structure and shape of the femur bone without the aid of a microscope. This is a study known as: 14) _____

- A) microscopic anatomy.
- B) gross anatomy.
- C) systemic anatomy.
- D) regional anatomy.

Answer: B

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

15) In laboratory, you will study tissues. This area of study is known as: 15) _____

- A) cytology.
- B) gross anatomy.
- C) physiology.
- D) histology.

Answer: D

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

16) Which organ system supports the body and protects internal organs? 16) _____

- A) skeletal system
- B) endocrine system
- C) digestive system
- D) muscular system

Answer: A

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

17) Which organ system includes blood vessels and the heart? 17) _____

- A) cardiovascular system
- B) respiratory system
- C) lymphatic system
- D) endocrine system

Answer: A

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

- 18) Which two organ systems include the pancreas as a component? 18) _____
A) endocrine and lymphatic systems B) respiratory and cardiovascular systems
C) digestive and urinary systems D) digestive and endocrine systems

Answer: D

Explanation: A)
 B)
 C)
 D)

Page Ref:

Topic:

- 19) What is a major function of the respiratory system? 19) _____
A) produce vitamin D and retain water
B) return excess tissue fluid to the cardiovascular system
C) digest food and absorb nutrients into the blood
D) deliver oxygen to the blood and remove carbon dioxide from the body

Answer: D

Explanation: A)
 B)
 C)
 D)

Page Ref:

Topic:

- 20) When we imagine a person exhibiting the anatomical position, the palms of the hands are assumed to be facing: 20) _____
A) to the side. B) forward. C) down. D) backward.

Answer: B

Explanation: A)
 B)
 C)
 D)

Page Ref:

Topic:

- 21) A person who is standing facing forward with hands at the sides, palms facing forward, is in the: 21) _____
A) anatomical position. B) supine position.
C) frontal position. D) sagittal position.

Answer: A

Explanation: A)
 B)
 C)
 D)

Page Ref:

Topic:

22) A person in the anatomical position is visualized to be: 22) _____
A) laying down on his or her back. B) sitting down.
C) standing upright. D) laying down on the stomach.

Answer: C

Explanation: A)
B)
C)
D)

Page Ref:
Topic:

23) Which directional term indicates the front side of the body? 23) _____
A) superior (cranial) B) posterior (dorsal)
C) anterior (ventral) D) medial

Answer: C

Explanation: A)
B)
C)
D)

Page Ref:
Topic:

24) A directional term that means the same as posterior is: 24) _____
A) anterior. B) ventral. C) sagittal. D) dorsal.

Answer: D

Explanation: A)
B)
C)
D)

Page Ref:
Topic:

25) Body parts that are described as medial are considered to be: 25) _____
A) closer to the midline of the body. B) toward the head.
C) closer to the point of origin. D) toward the front.

Answer: A

Explanation: A)
B)
C)
D)

Page Ref:
Topic:

26) Select the appropriate directional term to complete this sentence: The mouth is _____ to the nose. 26) _____

- A) posterior (dorsal)
- B) distal
- C) inferior (caudal)
- D) superior (cranial)

Answer: C

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

27) Select the appropriate directional term to complete this sentence: The skeletal muscles are _____ to the skin. 27) _____

- A) deep
- B) posterior
- C) inferior (caudal)
- D) superficial

Answer: D

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

28) In the anatomical position, the palms are on the: 28) _____

- A) posterior (dorsal) surface.
- B) anterior (ventral) surface.
- C) superior (cranial) surface.
- D) lateral surface.

Answer: B

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

29) The point of the shoulder is also known as the: 29) _____

- A) antebrachial region.
- B) brachial region.
- C) digital region.
- D) acromial region.

Answer: D

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

30) James sustained a cut to his mental region, also known as his: 30) _____
A) chin. B) cheek. C) mouth. D) nose.

Answer: A

Explanation: A)
B)
C)
D)

Page Ref:
Topic:

31) The vertebral region is superior to the: 31) _____
A) occipital region. B) sacral region.
C) cephalic region. D) cervical region.

Answer: B

Explanation: A)
B)
C)
D)

Page Ref:
Topic:

32) The hand is also known as the: 32) _____
A) pedal region. B) acromial region.
C) manual region. D) plantar region.

Answer: C

Explanation: A)
B)
C)
D)

Page Ref:
Topic:

33) A plane that divides the body into superior and inferior parts is known as a: 33) _____
A) midsagittal (median) plane. B) frontal (coronal) plane.
C) sagittal plane. D) transverse (horizontal, or cross) plane.

Answer: D

Explanation: A)
B)
C)
D)

Page Ref:
Topic:

- 34) Dr. Mitchell performs open heart surgery. The incision he makes through the sternal region of his patient divides the thoracic cavity into equal left and right parts. This incision must be made along a: 34) _____
- A) frontal (coronal) plane. B) transverse (horizontal) plane.
C) midsagittal (median) plane. D) sagittal plane.

Answer: C

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

- 35) What are the two subcavities of the dorsal body cavity? 35) _____
- A) pleural and pericardial cavities B) thoracic and abdominopelvic cavities
C) cranial and vertebral (spinal) cavities D) abdominal and pelvic cavities

Answer: C

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

- 36) What major organs are housed in the thoracic cavity? 36) _____
- A) brain and spinal cord B) stomach, intestines, liver, pancreas
C) urinary bladder, reproductive organs D) lungs, heart, esophagus, trachea

Answer: D

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

- 37) What separates the thoracic cavity from the abdominopelvic cavity? 37) _____
- A) diaphragm B) pericardium C) pleura D) mediastinum

Answer: A

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

- 38) The thoracic cavity is situated superior to the abdominopelvic cavity and separated by the diaphragm. Therefore, the diaphragm creates a: 38) _____
- A) parasagittal plane.
 - B) transverse (horizontal) plane, or cross section.
 - C) frontal (coronal) plane.
 - D) midsagittal (median) plane.

Answer: B

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

- 39) What smaller cavity within the thoracic cavity houses the heart, great blood vessels, esophagus, and trachea? 39) _____
- A) abdominal cavity
 - B) peritoneal cavity
 - C) mediastinum
 - D) diaphragm

Answer: C

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

- 40) Which regions of the abdominopelvic cavity are situated medially? 40) _____
- A) right and left hypochondriac regions, and the epigastric region
 - B) right and left lumbar regions and the umbilical region
 - C) epigastric, umbilical, hypogastric regions
 - D) right hypochondriac, right lumbar, and right iliac (inguinal) regions

Answer: C

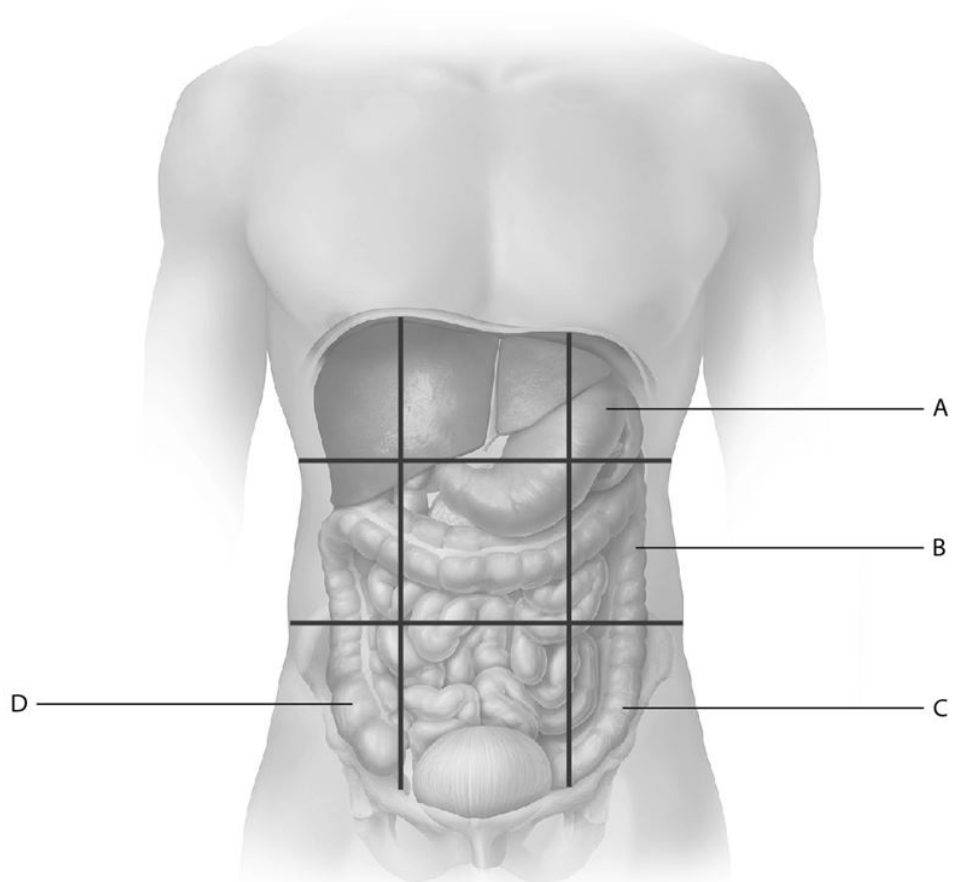
Explanation: A)
B)
C)
D)

Page Ref:

Topic:

41) Select the letter that represents the left iliac (inguinal) region.

41) _____



A) A

B) B

C) C

D) D

Answer: C

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

42) Which region of the abdominopelvic cavity lies between the right and left lumbar regions?

42) _____

A) hypogastric region

B) epigastric region

C) umbilical region

D) right lumbar region

Answer: C

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

43) Serous membranes line certain cavities within the: 43) _____
A) ventral cavities. B) dorsal cavities.
C) cranial cavity. D) vertebral (spinal) cavity.

Answer: A

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

44) What is deep to the visceral pericardium? 44) _____
A) pericardial cavity B) visceral peritoneum
C) parietal pericardium D) heart muscle

Answer: D

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

45) What would a needle travel through as it enters the right lung? 45) _____
A) visceral pericardium, serous fluid, parietal pericardium, right lung
B) parietal pleura, serous fluid, right lung, visceral pleura
C) parietal pleura, serous fluid, visceral pleura, right lung
D) visceral pleura, serous fluid, parietal pleura, right lung

Answer: C

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

46) What organ(s) is/are covered by the pleura? 46) _____
A) digestive organs B) lungs
C) brain and spinal cord D) heart

Answer: B

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

- 47) The maintenance of a relatively constant internal environment is termed: 47) _____
A) effector control. B) homeostasis.
C) integration. D) positive feedback.

Answer: B

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

- 48) What part of a feedback loop causes physiological responses to return the variable to the normal homeostatic range? 48) _____
A) receptor (sensor) B) stimulus
C) control center D) effector

Answer: D

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

- 49) A cell or organ that responds to the directions of the control center in a negative feedback loop is termed a(n): 49) _____
A) regulator. B) stimulus. C) receptor. D) effector.

Answer: D

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

50) When you go outside on a hot summer day, your body temperature heats up above the normal range. Receptors in your brain detect the change in body temperature. The brain activates nerve cells that send messages to sweat glands, causing the body temperature to fall as the sweat evaporates from the skin. What part of this feedback loop is the stimulus?

50) _____

- A) nerve cells
- B) sweat glands
- C) increased body temperature
- D) brain

Answer: C

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

51) When you go outside on a hot summer day, your body temperature heats up above the normal range. Receptors in your brain detect the change in body temperature. The brain activates nerve cells that send messages to sweat glands, causing the body temperature to fall as the sweat evaporates from the skin. What part of this feedback loop is the effector?

51) _____

- A) sweat glands
- B) increased body temperature
- C) nerve cells
- D) brain

Answer: A

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

52) How does the effector restore homeostasis in a negative feedback loop?

52) _____

- A) The effector opposes the initial stimulus and shuts off when conditions return to the normal range.
- B) The effector increases and reinforces the initial stimulus.
- C) The effector amplifies the response, but does not continue indefinitely.
- D) The effector causes a rapid change in a variable.

Answer: A

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

- 53) A mother breastfeeds her infant. As long as the baby suckles his mother's breast, the mother's mammary glands produce milk. Suckling, the stimulus, increases milk production, the response. This scenario is best described as: 53) _____
- A) a positive feedback loop.
 - B) anatomical position.
 - C) a negative feedback loop.
 - D) principle of complementarity of structure and function.

Answer: A

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

- 54) The type of feedback that increases or enhances the effects of the variable is: 54) _____
- A) responsive.
 - B) positive.
 - C) neutral.
 - D) negative.

Answer: B

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

- 55) Which of the following best summarizes the principle of complementarity of structure and function? 55) _____
- A) maintenance of a stable internal environment
 - B) form follows function
 - C) structure drives function
 - D) function follows structure

Answer: B

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

56) Which of the following illustrates a gradient?

56) _____

- A) maintenance of a relatively stable internal environment
- B) more of something exists in one area than another and the two areas are connected
- C) equilibrium or balance between two unconnected areas
- D) equal amounts of something exist in areas that are connected

Answer: B

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

57) Blood pressure in arteries is higher than the blood pressure in capillaries. Blood flows from arteries to capillaries due to the presence of a: 57) _____

- A) pressure gradient.
- B) positive feedback loop.
- C) homeostatic imbalance.
- D) negative feedback loop.

Answer: A

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

58) What are the two major methods by which cells communicate to coordinate their functions? 58) _____

- A) temperature gradients and pressure gradients
- B) positive feedback loops and negative feedback loops
- C) effectors and responses
- D) chemical messengers and/or electrical signals

Answer: D

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

- 59) A nerve cell releases chemical messengers to trigger changes in a nearby muscle cell. This is an example of a core principle known as: 59) _____
- A) feedback loops.
 - B) gradients.
 - C) cell-cell communication.
 - D) principle of complementarity of structure and function.

Answer: C

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

- 60) What is NOT one of the four core principles related to homeostasis? 60) _____
- A) gradients
 - B) feedback loops
 - C) metabolism
 - D) cell-cell communication

Answer: C

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

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

- 61) When studying, you should actively read the textbook by taking notes and making diagrams. 61) _____

Answer: True False

Explanation:

Page Ref:

Topic:

- 62) You should wait to read the textbook until you have heard the material presented in lecture or laboratory. 62) _____

Answer: True False

Explanation:

Page Ref:

Topic:

- 63) The smallest level of organization in the human body is the cellular level. 63) _____

Answer: True False

Explanation:

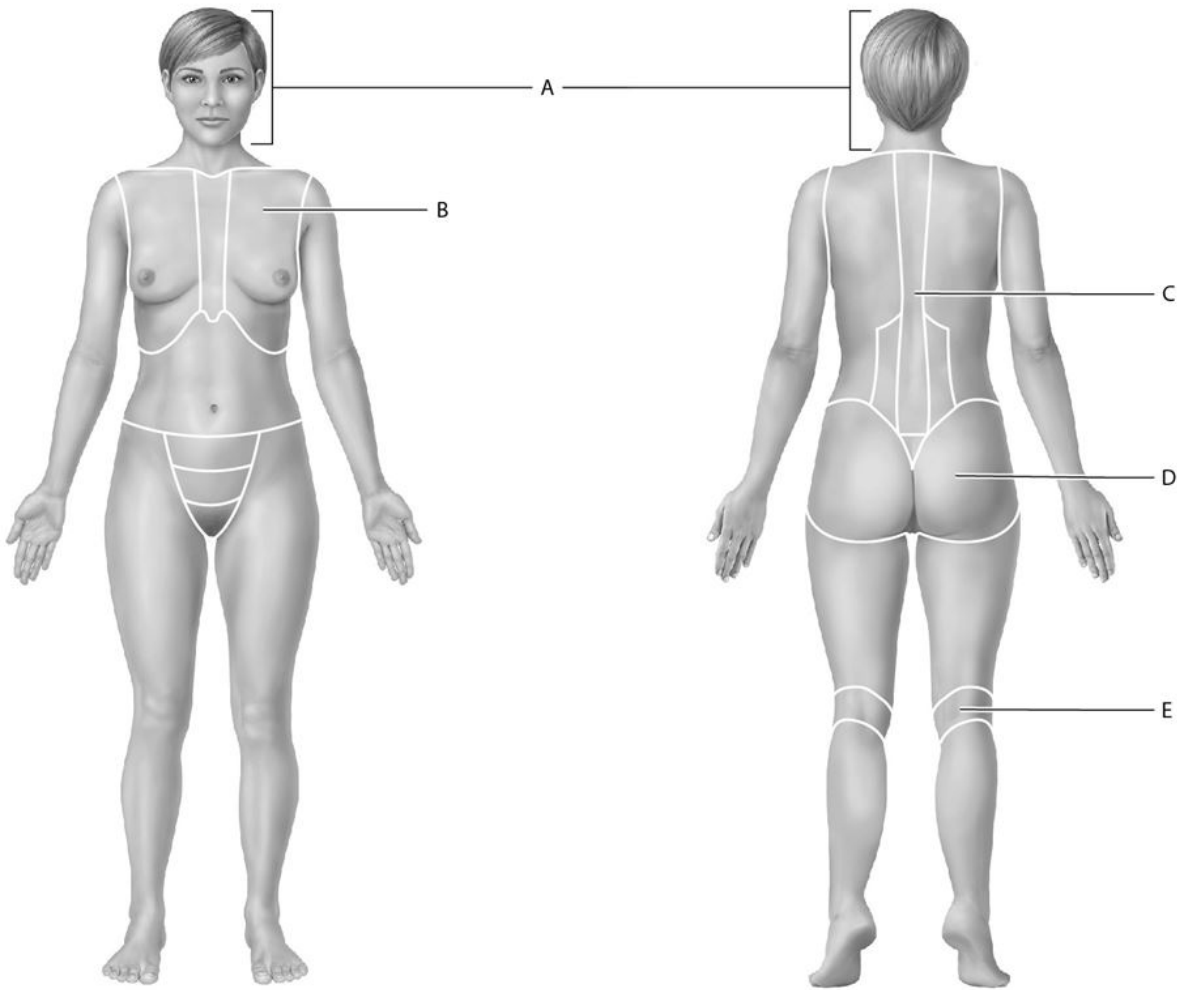
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Topic:

- 64) The endocrine system is responsible for generating heat. 64) _____
Answer: True False
Explanation:
Page Ref:
Topic:
- 65) Patients are always examined while they are standing in the anatomical position. 65) _____
Answer: True False
Explanation:
Page Ref:
Topic:
- 66) The crural region is posterior (dorsal) to the sural region. 66) _____
Answer: True False
Explanation:
Page Ref:
Topic:
- 67) The transverse (horizontal plane or cross section) plane divides the body into anterior and posterior parts. 67) _____
Answer: True False
Explanation:
Page Ref:
Topic:
- 68) Serous fluid lubricates around organs and reduces friction as the organ moves against adjacent structures. 68) _____
Answer: True False
Explanation:
Page Ref:
Topic:
- 69) Negative feedback loops produce responses in the opposite direction of the initial stimulus while positive feedback loops produce responses in the same direction of the initial stimulus. 69) _____
Answer: True False
Explanation:
Page Ref:
Topic:
- 70) According to the principle of complementarity of structure and function, structure and function are related only at the cellular level. 70) _____
Answer: True False
Explanation:
Page Ref:
Topic:

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Match the following with the correct regional anatomical term.



71) Identify the thoracic region.

Answer: B

Explanation:

Page Ref:

Topic:

71) _____

72) Identify the vertebral region.

Answer: C

Explanation:

Page Ref:

Topic:

72) _____

73) Identify the cephalic region.

Answer: A

Explanation:

Page Ref:

Topic:

73) _____

74) Identify the popliteal region.

Answer: E

Explanation:

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Topic:

74) _____

75) Identify the gluteal region.

Answer: D

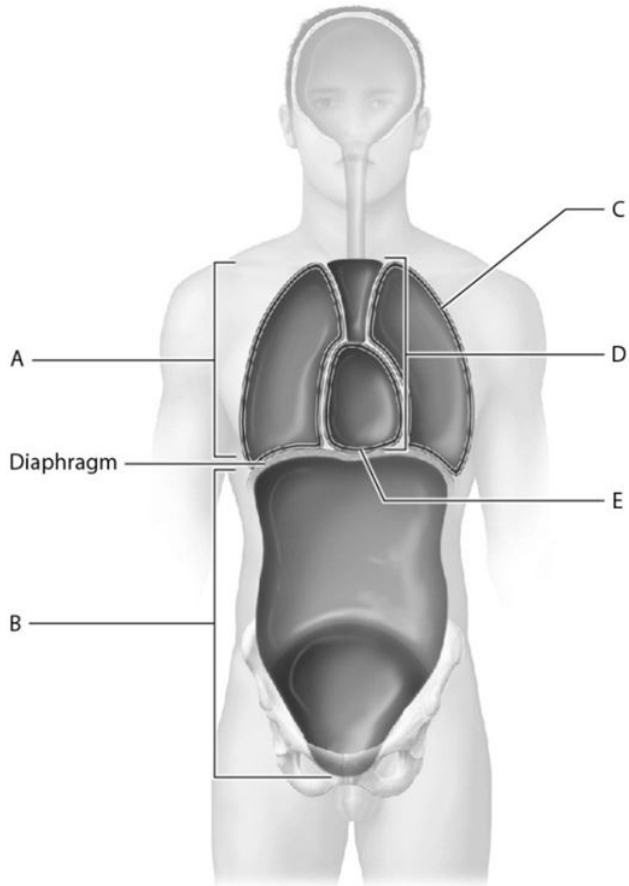
Explanation:

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Topic:

75) _____

Match the following with the correct body cavity or subdivision.



76) Identify the thoracic cavity.

76) _____

Answer: A

Explanation:

Page Ref:

Topic:

77) Identify the abdominopelvic cavity.

77) _____

Answer: B

Explanation:

Page Ref:

Topic:

78) Identify the cavity where the left lung is housed.

78) _____

Answer: C

Explanation:

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Topic:

79) Identify the mediastinum.

79) _____

Answer: D

Explanation:

Page Ref:

Topic:

80) Identify the cavity that houses the heart.

80) _____

Answer: E

Explanation:

Page Ref:

Topic:

ESSAY. Write your answer in the space provided or on a separate sheet of paper.

81) Gillian prefers to study alone. She mostly draws diagrams from the textbook or makes charts and tables to organize her thoughts as she reads. Determine and discuss her learning style.

Answer: Gillian prefers a visual/nonverbal learning style. A visual/nonverbal learner usually best understands concepts through the use of diagrams, illustrations, and other visual media without text.

Visual/nonverbal learners may experience more success in studying alone than in study groups.

Page Ref:

Topic:

82) Describe the SQ3R method for reading a textbook.

Answer: The SQ3R method stands for survey, questions, read, recite, and review. First, you should survey the chapter by skimming the material and figures. Next, form questions about the content in the chapter that you can answer as you read. Actively read by taking notes and drawing diagrams. As you read, recite the material speaking aloud. The final step is to review what you have read. You may choose to answer questions in the book, write summaries, or discuss topics aloud with study partners.

Page Ref:

Topic:

83) Define metabolism.

Answer: Metabolism includes the wide range of chemical processes carried out by living organisms. Metabolism includes both "building" processes in which smaller chemicals are combined to form larger ones, and "breaking down" processes in which larger chemicals are broken down into smaller ones.

Page Ref:

Topic:

84) Explain how gross anatomy and microscopic anatomy differ.

Answer: The field of gross anatomy examines structures, including organs and organ systems that can be seen with the unaided eye. The field of microscopic anatomy examines structures that require a microscope to be seen.

Page Ref:

Topic:

85) Describe anatomical position.

Answer: In anatomical position, the body is standing upright, feet are shoulder width apart, upper limbs are at the sides of the trunk, and the head and palms are facing forward.

Page Ref:

Topic:

86) Instead of using the directional terms superior and inferior to describe positions on the upper and lower limbs, what directional terms are used? Define these terms.

Answer: Instead of using superior and inferior for the limbs, the terms proximal and distal are used. Proximal refers to something being closer to the point of origin (the trunk) while distal refers to something being farther away from the point of origin. Structures nearer the trunk are proximal while structures farther away are distal.

Page Ref:

Topic:

87) Peggy is having surgery on the right carpal region. A 3 cm incision will be made deep to the skin and muscle, but will be superficial to the bone. Explain to her where her surgery will occur.

Answer: Peggy will have surgery on the wrist, or carpal, region of her right hand. The 3 cm incision will penetrate through the skin and muscle, but will not go as deep into her wrist as the bone.

Page Ref:

Topic:

88) During lab dissections, Kelly's instructor directs the students to make a midsagittal cut into their specimen. However, Kelly's lab partner thought she heard the instructor say that a cut along the median plane was to be made. Explain what type of cut should be made into the specimen.

Answer: A midsagittal plane of section is also known as a median plane of section. Both divide the body or body part into equal left and right parts. Kelly and her lab partner should make a cut so that their specimen is divided into equal left and right parts.

Page Ref:

Topic:

89) A female patient presents at the emergency room with pain in the right lower quadrant. Which organs might be involved?

Answer: The appendix, the right ovary, the first part of the large intestine, or the last part of the small intestine may be the source of pain in this female patient.

Page Ref:

Topic:

90) List the four quadrants and nine regions of the abdominopelvic cavity.

Answer: The four quadrants are the right upper quadrant, right lower quadrant, left upper quadrant, and left lower quadrant. The nine regions are the right hypochondriac region, epigastric region, left hypochondriac region, right lumbar region, umbilical region, left lumbar region, right iliac (inguinal) region, hypogastric region, and left iliac (inguinal) region.

Page Ref:

Topic:

91) Explain where the pericardial cavity is situated in relation to the pericardial membranes.

Answer: The pericardial cavity is situated between the visceral pericardium (attached to the heart muscle) and the outer parietal pericardium.

Page Ref:

Topic:

92) Define homeostasis and homeostatic imbalance.

Answer: Homeostasis is maintenance of the body's internal environment. Disturbances in homeostasis, known as homeostatic imbalances, can result in disease or death if uncorrected.

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Topic:

93) List and describe the components of a feedback loop.

Answer: The components of a feedback loop are the stimulus, receptor (sensor), control center, and effector/response. A stimulus is a regulated variable outside its normal range. A receptor (sensor) is a cellular structure that picks up information and sends it to a control center. The control center is often cells in the brain or an endocrine organ (gland). The control center compares the current value to its set point and determines that it's out of range. The control center sends signals to effectors. Effectors are cells or organs that cause physiological responses that return the variable to the normal homeostatic range.

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94) Discuss the role of effector in both the negative and positive feedback loops.

Answer: In a negative feedback loop, the effector activity opposes the initial stimulus and shuts off when conditions return to the normal range. However, in a positive feedback loop, the effector's activity actually increases—positive feedback reinforces the initial stimulus using a loop of increasing output that amplifies the response. A positive feedback loop therefore causes a rapid change in a variable.

Page Ref:

Topic:

95) List the four core principles that relate to homeostasis.

Answer: The four core principles that relate to homeostasis are:

- 1) feedback loops
- 2) the relationship of structure and function
- 3) gradients
- 4) cell-cell communication

Page Ref:

Topic:

96) Summarize the principle of complementarity of structure and function.

Answer: The principle of complementarity can be summarized as form follows function. In other words, the form of a structure is always such that it best suits its function.

Page Ref:

Topic:

97) Discuss why anatomical position is used.

Answer: Anatomical position provides accurate communication among scientists and health care professionals since it prevents experimental and medical errors. Anatomical position also provides a common frame of reference from which all body parts and regions are described.

Page Ref:

Topic:

98) Explain how the popliteal and patellar regions differ.

Answer: The popliteal region refers to the posterior (dorsal) side of the knee while the patellar region refers to the anterior (ventral) side of the knee. We may say that the popliteal region is posterior to the patellar region.

Page Ref:

Topic:

99) Jose is having back surgery. Discuss the specific type of section the surgeon should use to make a cut along his vertebral region.

Answer: The vertebral region is situated along the body's midline. To operate on this region, the surgeon should make a cut along the midsagittal, or medial, plane on Jose's posterior (dorsal) body surface. The midsagittal plane divides the body into equal left and right parts.

Page Ref:

Topic:

100) Pleurisy is the inflammation of the serous membranes surrounding the lungs. With pleurisy, the inflamed membranes may secrete more serous fluid than normal. Predict the effects of excess serous fluid on serous membrane function.

Answer: Serous fluid is an extremely thin, slippery, watery layer situated between the visceral and parietal pleura. This fluid is produced by the cells of the membrane to lubricate around the organs and reduce friction as the lungs move against adjacent structures. Excess fluid around the lungs puts pressure on the lungs and can impair the lubricating function of the serous membranes, making it harder for these membranes to reduce friction.

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Topic:

101) Explain how scratching a chaffing label on a shirt is an example of a negative feedback loop.

Answer: An irritation to the skin from a chaffing shirt label is a stimulus detected by a receptor (or sensor). The receptor sends this information to a control center, the brain, where it is determined that the skin irritation is out of normal range. The control center sends signals to effectors that cause physiological responses to return the variable to normal homeostatic range. Scratching, the response, stops the chaffing by moving the label off the skin, and thus removes the stimulus.

Page Ref:

Topic:

Answer Key

Testname: UNTITLED1

1) A

Page Ref:

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2) A

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3) B

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4) D

Page Ref:

Topic:

5) C

Page Ref:

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6) B

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7) B

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8) D

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9) D

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10) C

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11) C

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12) B

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13) C

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14) B

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15) D

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Answer Key

Testname: UNTITLED1

16) A

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17) A

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18) D

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20) B

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30) A

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Testname: UNTITLED1

31) B

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32) C

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42) C

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Answer Key

Testname: UNTITLED1

46) B

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48) D

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50) C

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51) A

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57) A

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Answer Key

Testname: UNTITLED1

61) TRUE

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62) FALSE

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63) FALSE

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64) TRUE

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65) FALSE

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66) FALSE

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67) FALSE

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68) TRUE

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69) TRUE

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70) FALSE

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71) B

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72) C

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73) A

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74) E

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75) D

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Answer Key

Testname: UNTITLED1

76) A

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Topic:

77) B

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78) C

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79) D

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80) E

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Topic:

81) Gillian prefers a visual/nonverbal learning style. A visual/nonverbal learner usually best understands concepts through the use of diagrams, illustrations, and other visual media without text. Visual/nonverbal learners may experience more success in studying alone than in study groups.

Page Ref:

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82) The SQ3R method stands for survey, questions, read, recite, and review. First, you should survey the chapter by skimming the material and figures. Next, form questions about the content in the chapter that you can answer as you read. Actively re-taking notes and drawing diagrams. As you read, recite the material by speaking aloud. The final step is to review what you have read. You may choose to answer questions in the book, write summaries, or discuss topics aloud with study partners.

Page Ref:

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83) Metabolism includes the wide range of chemical processes carried out by living organisms. Metabolism includes both "building" processes in which smaller chemicals are combined to form larger ones, and "breaking down" processes in which larger chemicals are broken down into smaller ones.

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84) The field of gross anatomy examines structures, including organs and organ systems that can be seen with the unaided eye. The field of microscopic anatomy examines structures that require a microscope to be seen.

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85) In anatomical position, the body is standing upright, feet are shoulder width apart, upper limbs are at the sides of the trunk, and the head and palms are facing forward.

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86) Instead of using superior and inferior for the limbs, the terms proximal and distal are used. Proximal refers to something being closer to the point of origin (the trunk) while distal refers to something being farther away from the point of origin. Structures nearer the trunk are proximal while structures farther away are distal.

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Answer Key

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- 87) Peggy will have surgery on the wrist, or carpal, region of her right hand. The 3 cm incision will penetrate through the skin and muscle, but will not go as deep into her wrist as the bone.
Page Ref:
Topic:
- 88) A midsagittal plane of section is also known as a median plane of section. Both divide the body or body part into equal left and right parts. Kelly and her lab partner should make a cut so that their specimen is divided into equal left and right parts.
Page Ref:
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- 89) The appendix, the right ovary, the first part of the large intestine, or the last part of the small intestine may be the source of pain in this female patient.
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- 90) The four quadrants are the right upper quadrant, right lower quadrant, left upper quadrant, and left lower quadrant. The nine regions are the right hypochondriac region, epigastric region, left hypochondriac region, right lumbar region, umbilical region, left lumbar region, right iliac (inguinal) region, hypogastric region, and left iliac (inguinal) region.
Page Ref:
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- 91) The pericardial cavity is situated between the visceral pericardium (attached to the heart muscle) and the outer parietal pericardium.
Page Ref:
Topic:
- 92) Homeostasis is maintenance of the body's internal environment. Disturbances in homeostasis, known as homeostatic imbalances, can result in disease or death if uncorrected.
Page Ref:
Topic:
- 93) The components of a feedback loop are the stimulus, receptor (sensor), control center, and effector/response. A stimulus is a regulated variable outside its normal range. A receptor (sensor) is a cellular structure that picks up information and sends it to a control center. The control center is often cells in the brain or an endocrine organ (gland). The control center compares the current value to its set point and determines that it's out of range. The control center sends signals to effectors. Effectors are cells or organs that cause physiological responses that return the variable to the normal homeostatic range.
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Page Ref:
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2) the relationship of structure and function
3) gradients
4) cell-cell communication
Page Ref:
Topic:

Answer Key

Testname: UNTITLED1

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