

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) kinesthetic. B) tactile. C) auditory. D) visual.

- 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) auditory learner.
C) kinesthetic learner. D) tactile learner.

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

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

- 5) Why should a student use the SQ3R method? 5) _____
A) The SQ3R method provides a student with a strategy for improving test taking skills.
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 taking notes during lecture class.

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

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

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

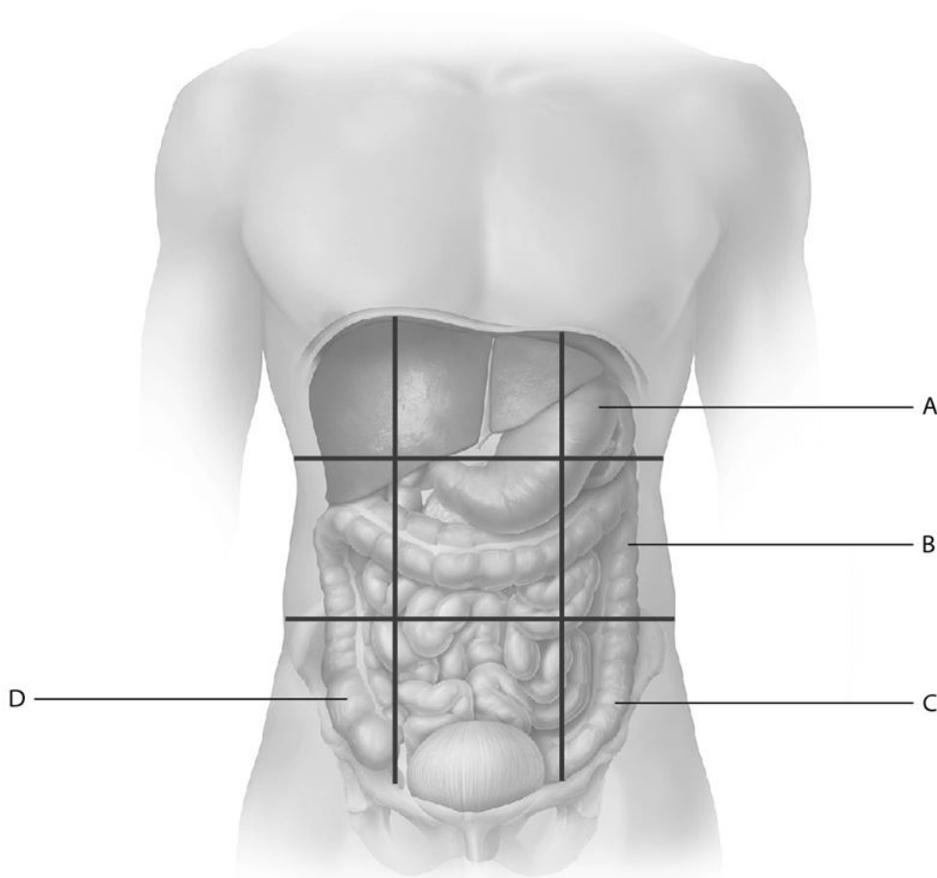
- 9) How could you use the Learning Outcomes in this book to help you study? 9) _____
 A) Recite the Learning Outcomes until you have them memorized.
 B) Write down the answers to the Learning Outcomes.
 C) Read through the Learning Outcomes after you have completed a section.
 D) Rewrite each Learning Outcome in your notes.
- 10) What results when anabolism occurs more than catabolism in an organism? 10) _____
 A) excretion B) irritability C) growth D) movement
- 11) What is the smallest level of structural organization in the human body? 11) _____
 A) chemical level B) organ level C) cellular level D) tissue level
- 12) Which of the following is the most complex structural level of organization? 12) _____
 A) tissue level B) cellular level C) organ level D) chemical level
- 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, tissue level, chemical level, organ level, organ system level, organismal level
 B) chemical level, cellular level, tissue level, organ level, organ system level, organismal level
 C) cellular level, chemical level, tissue level, organ level, organ system level, organismal level
 D) chemical level, tissue level, cellular level, organ system level, organ level, organismal level
- 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) systemic anatomy. B) microscopic anatomy.
 C) gross anatomy. D) regional anatomy.
- 15) In laboratory, you will study tissues. This area of study is known as: 15) _____
 A) histology. B) cytology. C) physiology. D) gross anatomy.
- 16) Which organ system supports the body and protects internal organs? 16) _____
 A) skeletal system B) digestive system
 C) muscular system D) endocrine system
- 17) Which organ system includes blood vessels and the heart? 17) _____
 A) lymphatic system B) respiratory system
 C) cardiovascular system D) endocrine system
- 18) Which two organ systems include the pancreas as a component? 18) _____
 A) digestive and urinary systems B) digestive and endocrine systems
 C) endocrine and lymphatic systems D) respiratory and cardiovascular systems
- 19) What is a major function of the respiratory system? 19) _____
 A) digest food and absorb nutrients into the blood
 B) return excess tissue fluid to the cardiovascular system
 C) produce vitamin D and retain water
 D) deliver oxygen to the blood and remove carbon dioxide from the body

- 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.
- 21) A person who is standing facing forward with hands at the sides, palms facing forward, is in the: 21) _____
 A) anatomical position. B) sagittal position.
 C) frontal position. D) supine position.
- 22) A person in the anatomical position is visualized to be: 22) _____
 A) laying down on his or her back. B) standing upright.
 C) laying down on the stomach. D) sitting down.
- 23) Which directional term indicates the front side of the body? 23) _____
 A) anterior (ventral) B) superior (cranial)
 C) medial D) posterior (dorsal)
- 24) A directional term that means the same as posterior is: 24) _____
 A) dorsal. B) sagittal. C) ventral. D) anterior.
- 25) Body parts that are described as medial are considered to be: 25) _____
 A) toward the head. B) closer to the midline of the body.
 C) closer to the point of origin. D) toward the front.
- 26) Select the appropriate directional term to complete this sentence: The mouth is _____ to the nose. 26) _____
 A) superior (cranial) B) posterior (dorsal)
 C) inferior (caudal) D) distal
- 27) Select the appropriate directional term to complete this sentence: The skeletal muscles are _____ to the skin. 27) _____
 A) deep B) inferior (caudal)
 C) posterior D) superficial
- 28) In the anatomical position, the palms are on the: 28) _____
 A) lateral surface. B) posterior (dorsal) surface.
 C) superior (cranial) surface. D) anterior (ventral) surface.
- 29) The point of the shoulder is also known as the: 29) _____
 A) antebrachial region. B) digital region.
 C) acromial region. D) brachial region.
- 30) James sustained a cut to his mental region, also known as his: 30) _____
 A) cheek. B) chin. C) mouth. D) nose.
- 31) The vertebral region is superior to the: 31) _____
 A) occipital region. B) sacral region.
 C) cervical region. D) cephalic region.

- 32) The hand is also known as the: 32) _____
 A) acromial region. B) pedal region.
 C) manual region. D) plantar region.
- 33) A plane that divides the body into superior and inferior parts is known as a: 33) _____
 A) sagittal plane. B) frontal (coronal) plane.
 C) transverse (horizontal, or cross) plane. D) midsagittal (median) plane.
- 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.
- 35) What are the two subcavities of the dorsal body cavity? 35) _____
 A) pleural and pericardial cavities B) cranial and vertebral (spinal) cavities
 C) abdominal and pelvic cavities D) thoracic and abdominopelvic cavities
- 36) What major organs are housed in the thoracic cavity? 36) _____
 A) urinary bladder, reproductive organs B) lungs, heart, esophagus, trachea
 C) stomach, intestines, liver, pancreas D) brain and spinal cord
- 37) What separates the thoracic cavity from the abdominopelvic cavity? 37) _____
 A) diaphragm B) mediastinum C) pericardium D) pleura
- 38) The thoracic cavity is situated superior to the abdominopelvic cavity and separated by the diaphragm. Therefore, the diaphragm creates a: 38) _____
 A) transverse (horizontal) plane, or cross section.
 B) parasagittal plane.
 C) frontal (coronal) plane.
 D) midsagittal (median) plane.
- 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) diaphragm D) mediastinum
- 40) Which regions of the abdominopelvic cavity are situated medially? 40) _____
 A) right hypochondriac, right lumbar, and right iliac (inguinal) regions
 B) right and left lumbar regions and the umbilical region
 C) right and left hypochondriac regions, and the epigastric region
 D) epigastric, umbilical, hypogastric regions

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

41) _____



A) A

B) B

C) C

D) D

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

42) _____

A) right lumbar region

B) umbilical region

C) epigastric region

D) hypogastric region

43) Serous membranes line certain cavities within the:

43) _____

A) dorsal cavities.

B) ventral cavities.

C) vertebral (spinal) cavity.

D) cranial cavity.

44) What is deep to the visceral pericardium?

44) _____

A) visceral peritoneum

B) parietal pericardium

C) pericardial cavity

D) heart muscle

45) What would a needle travel through as it enters the right lung?

45) _____

A) visceral pleura, serous fluid, parietal pleura, right lung

B) parietal pleura, serous fluid, right lung, visceral pleura

C) visceral pericardium, serous fluid, parietal pericardium, right lung

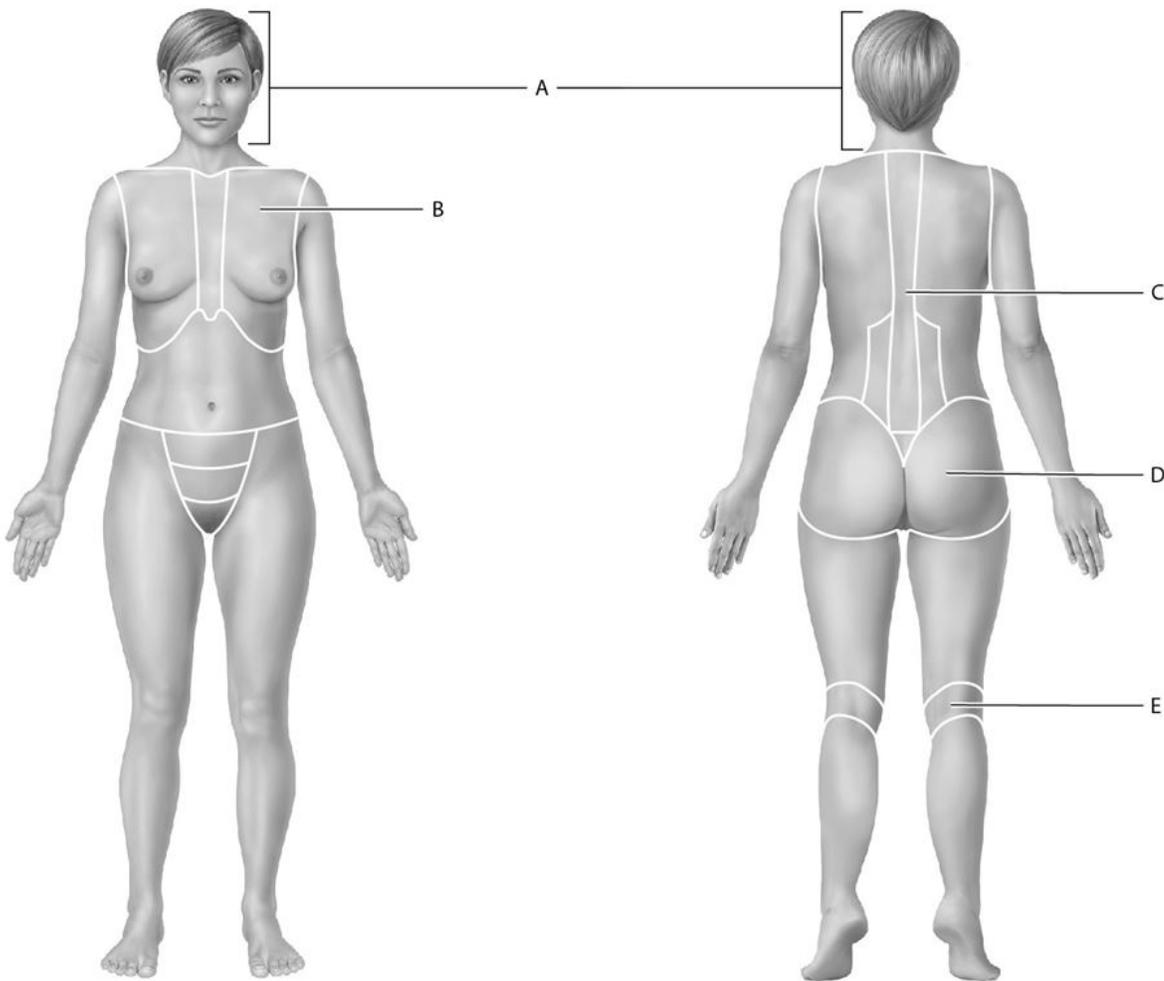
D) parietal pleura, serous fluid, visceral pleura, right lung

- 46) What organ(s) is/are covered by the pleura? 46) _____
 A) lungs B) digestive organs
 C) heart D) brain and spinal cord
- 47) The maintenance of a relatively constant internal environment is termed: 47) _____
 A) effector control. B) integration.
 C) homeostasis. D) positive feedback.
- 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
- 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) receptor. B) effector. C) stimulus. D) regulator.
- 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) sweat glands B) nerve cells
 C) increased body temperature D) brain
- 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) nerve cells B) sweat glands
 C) brain D) increased body temperature
- 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 causes a rapid change in a variable.
 C) The effector increases and reinforces the initial stimulus.
 D) The effector amplifies the response, but does not continue indefinitely.
- 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) principle of complementarity of structure and function.
 B) anatomical position.
 C) a negative feedback loop.
 D) a positive feedback loop.
- 54) The type of feedback that increases or enhances the effects of the variable is: 54) _____
 A) positive. B) responsive. C) negative. D) neutral.

- 67) The transverse (horizontal plane or cross section) plane divides the body into anterior and posterior parts. 67) _____
- 68) Serous fluid lubricates around organs and reduces friction as the organ moves against adjacent structures. 68) _____
- 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) _____
- 70) According to the principle of complementarity of structure and function, structure and function are related only at the cellular level. 70) _____

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. 71) _____
- 72) Identify the vertebral region. 72) _____

73) Identify the cephalic region.

73) _____

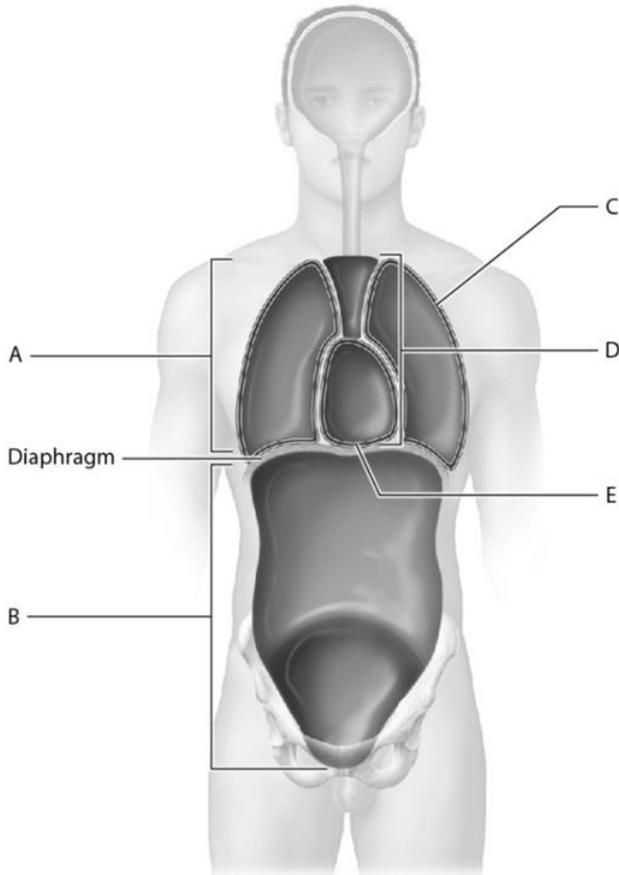
74) Identify the popliteal region.

74) _____

75) Identify the gluteal region.

75) _____

Match the following with the correct body cavity or subdivision.



76) Identify the thoracic cavity.

76) _____

77) Identify the abdominopelvic cavity.

77) _____

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

78) _____

79) Identify the mediastinum.

79) _____

80) Identify the cavity that houses the heart.

80) _____

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.

- 82) Describe the SQ3R method for reading a textbook.
- 83) Define metabolism.
- 84) Explain how gross anatomy and microscopic anatomy differ.
- 85) Describe anatomical position.
- 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.
- 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.
- 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.
- 89) A female patient presents at the emergency room with pain in the right lower quadrant. Which organs might be involved?
- 90) List the four quadrants and nine regions of the abdominopelvic cavity.
- 91) Explain where the pericardial cavity is situated in relation to the pericardial membranes.
- 92) Define homeostasis and homeostatic imbalance.
- 93) List and describe the components of a feedback loop.
- 94) Discuss the role of effector in both the negative and positive feedback loops.
- 95) List the four core principles that relate to homeostasis.
- 96) Summarize the principle of complementarity of structure and function.
- 97) Discuss why anatomical position is used.
- 98) Explain how the popliteal and patellar regions differ.
- 99) Jose is having back surgery. Discuss the specific type of section the surgeon should use to make a cut along his vertebral region.
- 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.
- 101) Explain how scratching a chaffing label on a shirt is an example of a negative feedback loop.

Answer Key

Testname: UNTITLED2

- 1) D
- 2) A
- 3) A
- 4) D
- 5) C
- 6) B
- 7) B
- 8) A
- 9) B
- 10) C
- 11) A
- 12) C
- 13) B
- 14) C
- 15) A
- 16) A
- 17) C
- 18) B
- 19) D
- 20) B
- 21) A
- 22) B
- 23) A
- 24) A
- 25) B
- 26) C
- 27) D
- 28) D
- 29) C
- 30) B
- 31) B
- 32) C
- 33) C
- 34) C
- 35) B
- 36) B
- 37) A
- 38) A
- 39) D
- 40) D
- 41) C
- 42) B
- 43) B
- 44) D
- 45) D
- 46) A
- 47) C
- 48) D
- 49) B
- 50) C

Answer Key

Testname: UNTITLED2

- 51) B
- 52) A
- 53) D
- 54) A
- 55) C
- 56) B
- 57) B
- 58) C
- 59) B
- 60) B
- 61) TRUE
- 62) FALSE
- 63) FALSE
- 64) TRUE
- 65) FALSE
- 66) FALSE
- 67) FALSE
- 68) TRUE
- 69) TRUE
- 70) FALSE
- 71) B
- 72) C
- 73) A
- 74) E
- 75) D
- 76) A
- 77) B
- 78) C
- 79) D
- 80) E
- 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.
- 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 read by 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.
- 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.
- 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.
- 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.
- 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.
- 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.

Answer Key

Testname: UNTITLED2

- 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.
- 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.
- 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.
- 91) The pericardial cavity is situated between the visceral pericardium (attached to the heart muscle) and the outer parietal pericardium.
- 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.
- 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.
- 94) 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.
- 95) 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
- 96) 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.
- 97) 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.
- 98) 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.
- 99) 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.
- 100) 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.
- 101) 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.