

Exam

Name \_\_\_\_\_

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

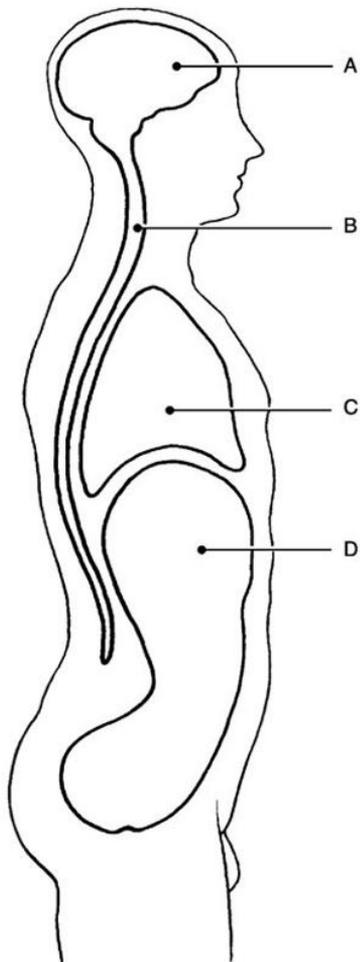


Figure 1.1

Using Figure 1.1, match the following cavities:

1) Thoracic cavity.

Answer: C

2) Cranial cavity.

Answer: A

3) Abdominal cavity.

Answer: D

4) Vertebral cavity.

Answer: B

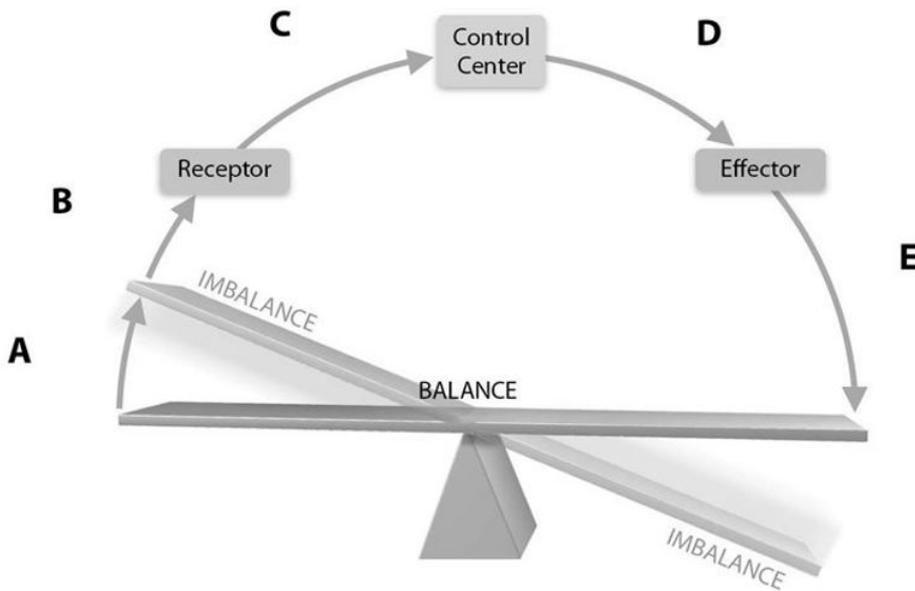


Figure 1.2

Using Figure 1.2, match the following descriptions to the most appropriate letter on the diagram:

- 5) Information about body temperature is sent through afferent pathways to the brain.  
Answer: C
- 6) Free nerve endings in the skin detect changes in skin temperature (getting warmer).  
Answer: B
- 7) Appropriate response information is sent through efferent pathways.  
Answer: D
- 8) A change in the temperature of the external environment (getting warmer).  
Answer: A
- 9) Sweat glands are stimulated as well as blood being distributed to the skin to allow cooling of the body to return the body's temperature to a physiological level.  
Answer: E

MATCHING. Choose the item in column 2 that best matches each item in column 1.

Match the following systems to their functions:

- 10) Provides the force to move bones about their joints.                      A) Muscular  
Answer: A

11) Responds to environmental changes by transmitting appropriate electrical impulses.

Answer: C

A) Integumentary

B) Skeletal

C) Nervous

12) Provides a ridged framework to support the body and stores minerals.

Answer: B

13) Prevents water loss, entry of germs into the body and synthesizes vitamin D.

Answer: A

*Match the following systems to their functions:*

14) Controls the body with chemical molecules called hormones.

Answer: C

A) Lymphatic

B) Immune

15) Delivers oxygen and nutrients to the tissues.

Answer: D

C) Endocrine

D) Cardiovascular

16) A functional organ system which provides a means of protecting us from foreign invaders.

Answer: B

17) Picks up and cleans excess fluid from tissues.

Answer: A

*Match the following examples of feedback mechanisms:*

18) Used for changes in blood glucose levels.

Answer: B

A) Positive feedback

B) Negative feedback

19) Used for changes in blood pressure.

Answer: B

20) Used for blood clotting.

Answer: A

21) Used for childbirth.

Answer: A

*Match the following systems and organs:*

22) Arteries, veins, heart.

Answer: E

23) Trachea, bronchi, alveoli.

Answer: C

24) Adrenal glands, pancreas, pituitary.

Answer: A

25) Esophagus, large intestine, rectum.

Answer: B

26) Kidneys, bladder, ureters.

Answer: D

A) Endocrine

B) Digestive

C) Respiratory

D) Urinary

E) Cardiovascular

*Match the following cavities and organs:*

27) Stomach.

Answer: C

28) Heart.

Answer: A

29) Uterus.

Answer: B

30) Brain.

Answer: D

31) Lungs.

Answer: A

A) Thoracic

B) Pelvic

C) Abdominal

D) Cranial

*Match the following regional terms and common terms:*

32) Arm.

Answer: A

33) Buttock.

Answer: B

A) Brachial

B) Gluteal



48) Lungs carry out an excretory function.

Answer:  True  False

49) Embryology concerns the structural changes that occur in an individual from conception through old age.

Answer:  True  False

50) A tissue consists of groups of similar cells that have a common function.

Answer:  True  False

51) It is important for any organism to maintain its boundaries, so that its internal environment remains distinct from the external environment surrounding it.

Answer:  True  False

52) Without some sort of negative feedback mechanism, it would be impossible to keep our body chemistry in balance.

Answer:  True  False

53) Responsiveness or irritability is the ability to sense changes in the environment and then respond to them.

Answer:  True  False

54) The epigastric region is superior to the umbilical region.

Answer:  True  False

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

55) Histology would be best defined as a study of \_\_\_\_\_.

- A) cells  
B) cell chemistry  
C) the gross structures of the body  
D) tissues

Answer: D

56) The study of large body structures, visible to the naked eye, such as the heart is called \_\_\_\_\_ anatomy.

- A) systemic  
B) microscopic  
C) developmental  
D) gross

Answer: D

57) Expiration (breathing out) is how the body removes excessive carbon dioxide from the blood. This is an example of \_\_\_\_\_.

- A) maintaining boundaries  
B) metabolism  
C) responsiveness  
D) excretion of metabolic waste

Answer: D

58) Generally, what is the result of the negative feedback process?

- A) to maintain homeostasis  
B) to keep the body's blood sugar level high  
C) to regulate excretion via the kidneys  
D) to control body movement

Answer: A

59) The coxal joint is most likely found in the \_\_\_\_\_ region of the body.

- A) groin  
B) hand  
C) foot  
D) hip

Answer: D

60) A structure that is composed of two or more tissue types that work together to perform specific functions for the body is a(n) \_\_\_\_\_.

- A) complex cell                      B) organ system                      C) complex tissue                      D) organ

Answer: D

61) The anatomical position is characterized by all of the following EXCEPT \_\_\_\_\_.

- A) arms at sides                      B) thumbs pointed laterally  
C) body erect                      D) palms turned posteriorly

Answer: D

62) A good example of a positive feedback mechanism would be \_\_\_\_\_.

- A) regulating glucose levels in the blood                      B) body temperature regulation  
C) blood calcium level regulation                      D) enhancement of labor contractions

Answer: D

63) Which of the following describes a parasagittal plane?

- A) any sagittal plane except in the midline  
B) any cut dividing the body into anterior and posterior portions  
C) two cuts dividing the body into left and right halves  
D) a transverse cut just above the knees

Answer: A

64) Which of the following organs or structures would be found in the left iliac region?

- A) stomach                      B) intestines                      C) appendix                      D) liver

Answer: B

65) The parietal pleura would represent a serous membrane \_\_\_\_\_.

- A) lining the thoracic cavity                      B) covering individual lungs  
C) covering the heart                      D) lining the abdominal cavity

Answer: A

66) Which one of the following systems responds fastest to environmental stimuli?

- A) lymphatic                      B) immune                      C) nervous                      D) muscular

Answer: C

67) Choose the anatomical topic and definition that is NOT correctly matched.

- A) Gross anatomy: study of structures visible to the eye.  
B) Cytology: study of the structures in a particular region.  
C) Microscopic anatomy: study of structures too small to be seen by the naked eye.  
D) Embryology: study of the changes in an individual from conception to birth.

Answer: B

68) Homeostasis is the condition in which the body maintains \_\_\_\_\_.

- A) a relatively stable internal environment, within limits  
B) a static state with no deviation from preset points  
C) the lowest possible energy usage  
D) a dynamic state within an unlimited range, depending on circumstances

Answer: A

69) In which body cavities are the lungs located?

- A) pleural, dorsal, and abdominal
- B) pericardial, ventral, and thoracic
- C) mediastinal, thoracic, and ventral
- D) pleural, ventral, and thoracic

Answer: D

70) Choose the following statement that is NOT completely correct regarding serous membranes.

- A) Serous membranes are divided into parietal and visceral membranes with a virtual space between the two.
- B) Visceral pericardium covers the outer surface of the heart, and parietal pericardium lines the internal walls of the heart.
- C) Serosa are very thin, double-layered structures.
- D) Serous membranes secrete a watery lubricating fluid.

Answer: B

71) Place the following in correct sequence from simplest to most complex:

- 1. molecules
- 2. atoms
- 3. tissues
- 4. cells
- 5. organs

- A) 2-1-3-4-5
- B) 1-2-4-3-5
- C) 1-2-3-4-5
- D) 2-1-4-3-5

Answer: D

72) Which of the following imaging devices would best localize a tumor in a person's brain?

- A) DSA
- B) MRI
- C) PET
- D) X-ray

Answer: B

73) Which of these is NOT part of the dorsal cavity?

- A) vertebral cavity
- B) cranial cavity
- C) thoracic cavity
- D) spinal cord

Answer: C

74) In which quadrant of the abdominopelvic cavity is the stomach located?

- A) left upper quadrant
- B) right lower quadrant
- C) left lower quadrant
- D) right upper quadrant

Answer: A

75) Which of the following statements is the most correct regarding homeostatic imbalance?

- A) It is considered the cause of most diseases.
- B) Positive feedback mechanisms are overwhelmed.
- C) Negative feedback mechanisms are functioning normally.
- D) The internal environment is becoming more stable.

Answer: A

76) The term pollex refers to the \_\_\_\_\_.

- A) calf
- B) thumb
- C) great toe
- D) fingers

Answer: B



- 86) The study of anatomy and physiology assumes and describes a healthy body. Select the description below that does NOT explain why this approach is useful.
- A) A healthy body establishes what "normal" is.
  - B) Study of a healthy body provides a foundation for a more complete understanding of all human bodies.
  - C) Study of a healthy body is less intimidating and more familiar to new students.
  - D) A healthy body provides a common standard to compare to.

Answer: C

- 87) One of the descriptions below is from the perspective of anatomical study, the rest are from a physiological perspective. Select the description below that comes from an anatomical perspective.
- A) The extremely thin tissue (simple squamous epithelium) of the lungs allows for the quick diffusion of respiratory gases into and out of the body.
  - B) The direction of blood flow through the heart is directed by one way valves.
  - C) The cell-to-cell connections between heart (cardiac) muscle cells are strong. They hold the tissue together for a life time of forceful contractions.
  - D) The innermost lining of the lungs is composed primarily of a thin tissue called simple squamous epithelium.

Answer: D

- 88) One of the descriptions below is from the perspective of physiological study, the rest are from an anatomical perspective. Select the description below that comes from physiological perspective.
- A) The pancreas lies deep to the stomach within the abdominal cavity.
  - B) The skull is formed by 22 facial and cranial bones.
  - C) The contraction of smooth muscle in blood vessels (vasoconstriction) can reduce the flow of blood through the vessel.
  - D) The chambers of the heart and blood vessels leading to and from the heart are separated by valves composed of fibrous connective tissue.

Answer: C

- 89) Which of the following is the best explanation for why cells are considered the smallest units of living things.
- A) Cells are highly ordered and complex.
  - B) Cells are the simplest structure to fit all of the characteristics necessary to be considered alive.
  - C) Cells have the ability to reproduce identical copies of themselves in a process called mitosis.
  - D) Cells cannot be seen with the naked eye and are considered microscopic.

Answer: B

- 90) Prevention of water loss is a necessary function for life that would best fit in the category of \_\_\_\_\_.
- A) metabolism
  - B) excretion
  - C) maintaining boundaries
  - D) responsiveness

Answer: C

- 91) Anabolic reactions are chemical reactions of the body that build things, make them bigger or more complex. Catabolic reactions break things down making them smaller or less complex. If the rate of anabolic reaction in the body is much faster than the rate of catabolic reactions, which of the following necessary life function will be accomplished?
- A) digestion
  - B) growth
  - C) responsiveness
  - D) movement

Answer: B

- 92) Anatomical position is important because \_\_\_\_\_.
- A) it allows diagrams within textbooks to display a greater surface area of the body with one simple diagram
  - B) it provides the greatest circulation to the extremities
  - C) it is the position most comfortable to hospital patients
  - D) it allows a common point of reference for body position to help communicate anatomical relationships

Answer: D

- 93) Positive feedback differs from negative feedback because \_\_\_\_\_.
- A) positive feedback provides moment-to-moment wellbeing while negative feedback causes a cascade effect
  - B) positive feedback tends to enhance the triggering stimulus while negative feedback tends to return the body to a homeostatic balance or "ideal" level
  - C) positive feedback is critical to health while negative feedback serves only to alert us to potential health threats
  - D) positive feedback is generally beneficial while negative feedback is typically harmful

Answer: B

- 94) When a baby suckles at its mother's breast the stimulus at the breast is sent to the mother's brain (a region called the hypothalamus). The brain responds by releasing hormones to stimulate the production and the ejection of milk from the breast. This helps the newborn to receive nourishment and encourages more suckling. This example is best described as a \_\_\_\_\_.
- A) necessary life function
  - B) negative feedback
  - C) loss of homeostasis
  - D) positive feedback

Answer: D

- 95) Some of the nerve endings in the skin are sensitive to changes in temperature. They are part of a negative feedback mechanism regulating body temperature. These nerve endings represent a(n) \_\_\_\_\_ in the negative feedback mechanism.
- A) control center
  - B) homeostatic balance or "ideal" value
  - C) receptor
  - D) effector

Answer: C

- 96) You are asked to take a person's heart rate at the popliteal pulse point. You will look for this pulse \_\_\_\_\_.
- A) on the palmar side of the hand
  - B) in the distal end of the lower leg
  - C) on the posterior side of the knee
  - D) at the posterior side of the wrist

Answer: C

- 97) You are told to take an axillary temperature on a small child. You will place the thermometer \_\_\_\_\_.
- A) under the tongue
  - B) in the rectum
  - C) on the forehead
  - D) in the armpit

Answer: D

- 98) You are asked to draw blood from the median cubital vein. You will search for this vein in the \_\_\_\_\_.
- A) hand
  - B) proximal arm
  - C) lateral side of the foot
  - D) anterior side of the elbow

Answer: D

- 99) The thoracic cavity contains the \_\_\_\_\_. It is found \_\_\_\_\_ to the vertebral cavity.
- A) heart and lungs; anterior
  - B) kidneys and spleen; deep
  - C) digestive viscera; inferior
  - D) stomach and liver; superficial

Answer: A

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

100) Similar cells that have a common function are called \_\_\_\_\_.

Answer: tissues

101) What does the "principle of complementarity of structures and function" mean?

Answer: Structure is specific to meet the needs of it's function.

102) The term that describes the back of the elbow is \_\_\_\_\_.

Answer: olecranal

103) The term that describes the neck region is \_\_\_\_\_.

Answer: cervical

104) The heart is \_\_\_\_\_ to the lungs.

Answer: medial

105) \_\_\_\_\_ is explained by chemical and physical principles and is concerned with the function of specific organs or organic systems.

Answer: Physiology

106) What is a dynamic equilibrium of your internal environment termed?

Answer: homeostasis

107) Which cavity contains the bladder, some reproductive organs, and the rectum?

Answer: pelvic

108) What is the serous membrane that covers the intestines called?

Answer: visceral peritoneum

109) What broad term covers all chemical reactions that occur within the body cells?

Answer: metabolism

110) What is the function of the serous membranes?

Answer: They act to reduce friction and allow the organs to slide across cavity walls.

111) Can lungs carry out excretory functions? Explain your answer.

Answer: Yes, carbon dioxide is a metabolic waste the lungs excrete.

112) Why is anatomical terminology necessary?

Answer: Anatomical terms are precise words that have limited usage, which prevents confusion when describing the location of body parts.

113) The ability to sense changes in the environment and respond to them is called \_\_\_\_\_.

Answer: responsiveness or excitability

114) What is the single most abundant chemical substance in the body?

Answer: water

- 115) Why must a normal body temperature be maintained in order for chemical reactions to be continued at life-sustaining rates?  
Answer: If body temperature is too low, chemical reactions slow and eventually stop. If body temperature is too high, chemical reactions speed up and body proteins lose their normal shape, resulting in loss of function.
- 116) What is the pathway between the receptor and the control center in the reflex pathway called?  
Answer: afferent pathway
- 117) What type of homeostatic feedback reflex is the withdrawal reflex?  
Answer: negative
- 118) Why are the abdominopelvic cavity organs the most vulnerable to blunt deceleration in an automobile accident with seat belts?  
Answer: The walls of the abdominal cavity are formed only by trunk muscles and are not reinforced by bone. The pelvic organs receive a somewhat greater degree of protection from the bony pelvis.
- 119) What is the action of all of the negative feedback mechanisms of the body?  
Answer: They provide a mechanism to maintain levels of substances within physiological limits.
- 120) Which feedback mechanism causes the variable to deviate further and further from its original value or range?  
Answer: positive feedback
- 121) What can happen when the usual negative feedback mechanisms are overwhelmed and destructive positive feedback mechanisms take over?  
Answer: Homeostatic imbalances increase our risk for disease processes and produce the changes we associate with aging.
- 122) Which body system would be most affected by a lower than normal atmospheric pressure?  
Answer: respiratory system
- 123) Describe the overlap in function between the cardiovascular system and respiratory system. In other words, describe how they work together.  
Answer: The blood is provided a consistent supply of oxygen from the lungs while the circulatory system delivers carbon dioxide which will be removed from the body by the respiratory system.
- 124) Describe the overlap in function between the muscular system and skeletal system. In other words, describe how they work together.  
Answer: The skeleton provides the ridged frame work (levers) for muscles to attach to. Muscles provide the force to move the bones about the joints.
- 125) The integumentary system helps to maintain a boundary between the internal and external environment. Give an example of something that is prevented entry to the body and an example of something prevented from escaping the body by the integumentary system.  
Answer: The integument prevents entry of pathogens (germs, viruses, bacteria) OR harmful chemicals. The integumentary system prevents water (body fluid) loss.
- 126) Describe the opposing ways that the muscular system and integumentary system act as effectors in the regulation of body temperature.  
Answer: The integument cools the body through sweat while the muscular system warms the body by shivering.

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

127) A small family was traveling in its van and had a minor accident. The children in the back seats were wearing lap belts, but still sustained numerous bruises about the abdomen, and had some internal organ injuries. Why is this area more vulnerable to damage than others?

Answer: The abdominal organs are the least protected in the body because they are not surrounded by a bony covering such as the ribs, pelvis, or cranium.

128) Steve was injured in a football accident. X-ray examination showed a fracture underlying his left brachial deformity. What part of his body was injured?

Answer: His left upper arm

129) Judy is 16 years old and collapses on the gym floor with severe pain in her chest wall every time she takes a deep breath. She is rushed by ambulance to the emergency room. Judy is diagnosed with pleurisy and is given an anti-inflammatory drug through the intravenous route. Explain why an anti-inflammatory drug would be prescribed for someone with pleurisy.

Answer: The pleural space contains a small amount of fluid that acts as a lubricant, allowing the pleurae to slide smoothly over each other as the lungs expand and contract. Pleurisy is an inflammation of the pleura around the lungs. When inflammation occurs in the pleural space, the pleurae do not slide smoothly and this causes severe pain that is more directly transmitted by the parietal than the visceral pleura.

130) Sara is giving birth to her first child. She is concerned that her labor is taking longer than she thought it would. Why does giving birth usually take time for the contractions to proceed to the point when the child is born?

Answer: Childbirth is based on the increasing levels of oxytocin that cause the uterine contractions. Under positive feedback, oxytocin levels increase which results in increasing strong contractions by the upper uterus that will ultimately result in the birth of the child. But this positive feedback needs numerous contraction cycles to overcome the muscular resistance to stretching in the lower uterus in order for the head to pass.

131) The nurse charted: "Patient has an open wound located on lateral aspect of leg." Describe where the wound is located.

Answer: The wound is located on the outer side of the leg, the peroneal or fibular area.