***Essentials of Human Anatomy & Physiology, 13e* (Marieb)**

**Chapter 1 The Human Body: An Orientation**

1.1 Multiple Choice Part I Questions

Short Description:
A lateral view diagram highlights the following six cavities, from top to bottom. A, in the head. B, along the back. C, in the chest. D, between the cavity in the chest and cavity abdomen, E, in the abdomen. F, in the pelvis.

**Figure 1.1**

*Using Figure 1.1, identify the following:*

1) Identify the cavity that houses the spinal cord.

A) Label A

B) Label B

C) Label C

D) Label D

E) Label E

F) Label F

Answer: B

Page Ref: 16

Bloom's: 1-2: Remembering/Understanding

2) Label E points to the \_\_\_\_\_\_\_\_ cavity.

A) thoracic

B) pelvic

C) cranial

D) abdominal

Answer: D

Page Ref: 16

Bloom's: 1-2: Remembering/Understanding

3) Identify the cavity that houses the heart and lungs (and other organs).

A) Label A

B) Label B

C) Label C

D) Label D

E) Label E

F) Label F

Answer: C

Page Ref: 16

Bloom's: 1-2: Remembering/Understanding

4) Identify the structure that separates the thoracic cavity from the rest of the ventral cavity.

A) Label A

B) Label B

C) Label C

D) Label D

E) Label E

F) Label F

Answer: D

Page Ref: 16

Bloom's: 1-2: Remembering/Understanding

5) Label F points to the \_\_\_\_\_\_\_\_ cavity.

A) thoracic

B) pelvic

C) cranial

D) abdominal

Answer: B

Page Ref: 16

Bloom's: 1-2: Remembering/Understanding

6) Identify the cavity that houses the stomach, liver, and other digestive organs.

A) Label A

B) Label B

C) Label C

D) Label D

E) Label E

F) Label F

Answer: E

Page Ref: 16

Bloom's: 1-2: Remembering/Understanding

7) Which of the following is the smallest unit of all living things?

A) Organ

B) Tissue

C) Cell

D) Organ system

Answer: C

Page Ref: 2

Bloom's: 1-2: Remembering/Understanding

8) The heart and blood vessels are the primary organs of the \_\_\_\_\_\_\_\_ system.

A) lymphatic

B) integumentary

C) cardiovascular

D) muscular

Answer: C

Page Ref: 4

Bloom's: 1-2: Remembering/Understanding

9) The skeletal muscles that contract and shorten to move the bones form the \_\_\_\_\_\_\_\_ system.

A) skeletal

B) muscular

C) endocrine

D) reproductive

Answer: B

Page Ref: 4

Bloom's: 1-2: Remembering/Understanding

10) The \_\_\_\_\_\_\_\_ system rids the body of indigestible food residue in feces while the \_\_\_\_\_\_\_\_ system removes nitrogen-containing metabolic waste in urine.

A) urinary; digestive

B) cardiovascular; urinary

C) digestive; urinary

D) reproductive; digestive

Answer: C

Page Ref: 4, 7

Bloom's: 1-2: Remembering/Understanding

11) The ability to sense a mosquito landing on your arm and swat it away is described as \_\_\_\_\_\_\_\_.

A) metabolism

B) homeostasis

C) excretion

D) responsiveness (irritability)

Answer: D

Page Ref: 7-8

Bloom's: 1-2: Remembering/Understanding

12) What accounts for 60 to 80 percent of the body's weight, depending on the age of the individual?

A) Water

B) Carbon

C) Carbohydrates

D) Minerals

Answer: A

Page Ref: 9

Bloom's: 1-2: Remembering/Understanding

13) When our body temperature rises above 37°C or 98.6°F, a negative feedback mechanism will be triggered to lower the body temperature. As a result, our sweat glands release sweat to cool the body temperature. What part of the negative feedback mechanism is the sweat gland?

A) Stimulus

B) Effector

C) Receptor

D) Control center

Answer: B

Page Ref: 19

Bloom's: 1-2: Remembering/Understanding

14) What type of sensor monitors and responds to changes in the environment in a negative feedback loop?

A) Effector

B) Receptor

C) Control center

D) Stimulus

Answer: B

Page Ref: 18

Bloom's: 1-2: Remembering/Understanding

15) When we imagine a person exhibiting anatomical position, the palms of the hands are assumed to be facing \_\_\_\_\_\_\_\_.

A) to the side

B) forward

C) down

D) behind

Answer: B

Page Ref: 11

Bloom's: 1-2: Remembering/Understanding

16) The body's ability to maintain stable internal conditions is referred to as \_\_\_\_\_\_\_\_.

A) metabolism

B) homeostasis

C) irritability

D) output

Answer: B

Page Ref: 18

Bloom's: 1-2: Remembering/Understanding

17) The acromial region is \_\_\_\_\_\_\_\_ to the antebrachial region.

A) superior (proximal)

B) inferior (distal)

C) anterior

D) posterior

Answer: A

Page Ref: 12, 13

Bloom's: 1-2: Remembering/Understanding

18) Edna tore a ligament in the patellar region and anticipates having difficulty with her \_\_\_\_\_\_\_\_.

A) wrist

B) knee

C) ankle

D) elbow

Answer: B

Page Ref: 13

Bloom's: 1-2: Remembering/Understanding

19) The spinal cord is best described as

A) lateral.

B) proximal.

C) ventral (anterior).

D) medial.

Answer: D

Page Ref: 12

Bloom's: 1-2: Remembering/Understanding

20) The central region of the thoracic cavity containing the heart is called the \_\_\_\_\_\_\_\_.

A) pleural cavity

B) mediastinum

C) quadrant

D) visceral cavity

Answer: B

Page Ref: 16

Bloom's: 1-2: Remembering/Understanding

21) The right and left iliac (inguinal) regions are lateral to the \_\_\_\_\_\_\_\_ region.

A) hypogastric (pubic)

B) right hypochondriac

C) right lumbar

D) left hypochondriac

Answer: A

Page Ref: 17

Bloom's: 1-2: Remembering/Understanding

22) A young child sustained a baseball hit to his cranial cavity. Which bones were fractured?

A) Ribs

B) Vertebrae

C) Hips

D) Skull

Answer: D

Page Ref: 16

Bloom's: 1-2: Remembering/Understanding

23) The diaphragm creates a \_\_\_\_\_\_\_\_ section by dividing the ventral body cavity into superior and inferior subdivisions.

A) transverse (cross)

B) median

C) midsagittal

D) frontal (coronal)

Answer: A

Page Ref: 16

Bloom's: 1-2: Remembering/Understanding

24) The hypogastric (pubic) region is \_\_\_\_\_\_\_\_ to the umbilical region.

A) superior

B) inferior

C) posterior

D) medial

Answer: B

Page Ref: 17

Bloom's: 1-2: Remembering/Understanding

25) Ventral is a directional term synonymous with \_\_\_\_\_\_\_\_ in humans.

A) posterior

B) dorsal

C) anterior

D) medial

Answer: C

Page Ref: 12

Bloom's: 1-2: Remembering/Understanding

26) Select all of the regions of the abdominopelvic cavity that are medial.

1) right iliac (inguinal) region

2) epigastric region

3) hypogastric region

4) left lumbar region

5) left hypochondriac region

A) 1, 4, and 5

B) 1, 3, and 4

C) 2 and 3

D) 1, 2, 4, and 5

Answer: C

Page Ref: 17

Bloom's: 1-2: Remembering/Understanding

27) The navel is located in the \_\_\_\_\_\_\_\_ region of the abdominopelvic cavity.

A) epigastric

B) hypogastric

C) umbilical

D) right lumbar

Answer: C

Page Ref: 17

Bloom's: 1-2: Remembering/Understanding

28) The two major internal body cavities are the \_\_\_\_\_\_\_\_ cavity and the \_\_\_\_\_\_\_\_ cavity.

A) abdominopelvic; thoracic

B) ventral; dorsal

C) cranial; dorsal

D) thoracic; ventral

Answer: B

Page Ref: 16

Bloom's: 1-2: Remembering/Understanding

29) Which of these internal body cavities is the most inferior?

A) Pelvic cavity

B) Thoracic cavity

C) Abdominal cavity

D) Cranial cavity

Answer: A

Page Ref: 16

Bloom's: 3-4: Applying/Analyzing

30) The orbital cavities house the \_\_\_\_\_\_\_\_.

A) mouth

B) nose

C) eyes

D) ears

Answer: C

Page Ref: 18

Bloom's: 1-2: Remembering/Understanding

31) Which body cavity can be further subdivided into quadrants and regions?

A) Cranial

B) Spinal

C) Dorsal

D) Abdominopelvic

Answer: D

Page Ref: 16-17

Bloom's: 1-2: Remembering/Understanding

32) To perform heart surgery, an incision is made into the \_\_\_\_\_\_\_\_ cavity.

A) abdominal

B) pelvic

C) thoracic

D) cranial

Answer: C

Page Ref: 16

Bloom's: 1-2: Remembering/Understanding

33) The epigastric region is \_\_\_\_\_\_\_\_ to the right hypochondriac region of the abdominopelvic cavity.

A) medial

B) superior

C) dorsal

D) lateral

Answer: A

Page Ref: 17

Bloom's: 1-2: Remembering/Understanding

Short Description: 
An anterior view diagram shows the abdominal area divided into 9 regions in a 3 by three grid. Five regions are highlighted. A. Top left. B. Top center. C. Middle center. D. Middle left. E. Bottom center. F. Bottom left.


**Figure 1.2**

*Using Figure 1.2, identify the following:*

34) In which region is the stomach located?

A) Label A

B) Label B

C) Label C

D) Label D

E) Label E

F) Label F

Answer: A

Page Ref: 17

Bloom's: 1-2: Remembering/Understanding

35) Which region is the umbilical region?

A) Label A

B) Label B

C) Label C

D) Label D

E) Label E

F) Label F

Answer: C

Page Ref: 17

Bloom's: 1-2: Remembering/Understanding

36) Which region is lateral to the umbilical region?

A) Label A

B) Label B

C) Label C

D) Label D

E) Label E

F) Label F

Answer: D

Page Ref: 17

Bloom's: 1-2: Remembering/Understanding

37) Which region is associated with the lower ribs?

A) Label A

B) Label B

C) Label C

D) Label D

E) Label E

F) Label F

Answer: B

Page Ref: 17

Bloom's: 1-2: Remembering/Understanding

38) The hypogastric (pubic) region is \_\_\_\_\_\_\_\_.

A) Label A

B) Label B

C) Label C

D) Label D

E) Label E

F) Label F

Answer: E

Page Ref: 17

Bloom's: 1-2: Remembering/Understanding

39) Which region is situated inferior to the right lumbar region?

A) Label A

B) Label B

C) Label C

D) Label D

E) Label E

F) Label F

Answer: F

Page Ref: 17

Bloom's: 1-2: Remembering/Understanding

1.2 Multiple Choice Part II Questions

1) The study of the structure and shape of the body and its parts and their relationships to one another is called \_\_\_\_\_\_\_\_.

A) anatomy

B) physiology

C) homeostasis

D) negative feedback

E) irritability

Answer: A

Page Ref: 1

Bloom's: 1-2: Remembering/Understanding

2) Which of the following activities represents a physiological study?

A) Making a section through the kidney to observe its interior

B) Examining the surface of a bone

C) Viewing muscle tissue through a microscope

D) Studying how the layers of the skin are organized

E) Observing how the heart contracts to pump blood

Answer: E

Page Ref: 2

Bloom's: 1-2: Remembering/Understanding

3) Which of the following levels of organization is inclusive of all others?

A) Chemical level

B) Tissue level

C) Organ level

D) Organ system level

E) Cellular level

Answer: D

Page Ref: 2

Bloom's: 1-2: Remembering/Understanding

4) Which of the following represents the chemical level of structure in the human body?

A) Organs

B) Tissues

C) Atoms

D) Cells

E) Organ systems

Answer: C

Page Ref: 2

Bloom's: 1-2: Remembering/Understanding

5) The major organs of the skeletal system are the \_\_\_\_\_\_\_\_.

A) skeletal muscles

B) pharynx, larynx, trachea, bronchi, and lungs

C) bones, cartilages, and joints

D) brain, spinal cord, nerves, and sensory receptors

E) heart and blood vessels

Answer: C

Page Ref: 3-4

Bloom's: 1-2: Remembering/Understanding

6) The main function of the respiratory system is to \_\_\_\_\_\_\_\_.

A) transport oxygen, nutrients, and wastes to and from body cells and tissues

B) produce sperm and eggs

C) supply the body with oxygen and remove carbon dioxide

D) control body activities through hormones released into the blood

E) break down food and deliver the products to the blood for dispersal

Answer: C

Page Ref: 4

Bloom's: 1-2: Remembering/Understanding

7) The system that controls and coordinates the body using hormones is the \_\_\_\_\_\_\_\_.

A) integumentary system

B) skeletal system

C) nervous system

D) endocrine system

E) digestive system

Answer: D

Page Ref: 4

Bloom's: 1-2: Remembering/Understanding

8) The nervous system consists of \_\_\_\_\_\_\_\_.

A) receptors and effectors

B) muscles of the heart

C) glands that produce hormones

D) lymphatic vessels, lymph nodes, and lymphoid organs

E) bones, cartilages, and joints

Answer: A

Page Ref: 4

Bloom's: 1-2: Remembering/Understanding

9) Which two organ systems include the pancreas?

A) Digestive and endocrine systems

B) Urinary and respiratory systems

C) Reproductive and urinary systems

D) Digestive and respiratory systems

E) Endocrine and respiratory systems

Answer: A

Page Ref: 4

Bloom's: 1-2: Remembering/Understanding

10) Which system covers the external surface of the body and protects deeper tissues?

A) Endocrine system

B) Integumentary system

C) Nervous system

D) Lymphatic system

E) Skeletal system

Answer: B

Page Ref: 3

Bloom's: 1-2: Remembering/Understanding

11) What is the major function of the lymphatic system?

A) Return leaked fluids back to the cardiovascular system, so there is enough blood to circulate

B) Deliver oxygen, nutrients, and hormones via the blood to the body's cells

C) Eliminate nitrogen-containing metabolic wastes from the blood in the form of urine

D) Break down food and deliver the nutrients to the blood

E) Secrete hormones into the blood to regulate body processes such as growth and reproduction

Answer: A

Page Ref: 4

Bloom's: 1-2: Remembering/Understanding

12) What are two organ systems that are involved in the excretion of wastes from the body?

A) Digestive and urinary

B) Cardiovascular and skeletal

C) Muscular and skeletal

D) Endocrine and nervous

E) Cardiovascular and nervous

Answer: A

Page Ref: 4, 7

Bloom's: 1-2: Remembering/Understanding

13) Which of the following systems is matched most accurately to the life function it provides?

A) Integumentary system — movement

B) Nervous system — excretion

C) Muscular system — maintaining boundaries

D) Nervous system — responsiveness

E) Respiratory system — digestion

Answer: D

Page Ref: 7

Bloom's: 1-2: Remembering/Understanding

14) Which of the following is *not* considered a nutrient?

A) Carbohydrates

B) Proteins

C) Water

D) Minerals

E) Vitamins

Answer: C

Page Ref: 9

Bloom's: 1-2: Remembering/Understanding

15) Place these components of a homeostatic control system in the proper order.

1) effector

2) efferent pathway

3) receptor

4) control center

5) afferent pathway

A) 1, 5, 4, 2, and 3

B) 3, 2, 4, 5, and 1

C) 3, 5, 2, 4, and 1

D) 3, 5, 4, 2, and 1

E) 5, 3, 4, 1, and 2

Answer: D

Page Ref: 19

Bloom's: 3-4: Applying/Analyzing

16) Blood calcium levels are maintained by a negative feedback homeostatic mechanism. When blood calcium levels rise beyond their set point, a hormone called calcitonin is released by the thyroid gland to lower blood calcium levels back to their set point. What role does the thyroid gland play in this mechanism?

A) Control center

B) Stimulus

C) Effector

D) Receptor

E) Variable

Answer: C

Page Ref: 19

Bloom's: 3-4: Applying/Analyzing

17) Milk production increases during breastfeeding when a newborn suckles from his mother's nipple. This type of feedback mechanism in which the stimulus pushes milk production farther from its original value best describes \_\_\_\_\_\_\_\_.

A) negative feedback

B) an abnormal physiological mechanism

C) homeostatic imbalance

D) positive feedback

E) both negative and positive feedback

Answer: D

Page Ref: 20

Bloom's: 1-2: Remembering/Understanding

18) A body part that is considered lateral is understood to be \_\_\_\_\_\_\_\_.

A) toward the head end of the body

B) toward or at the front of the body

C) away from the midline of the body

D) close to the origin of a body part

E) toward the midline of the body

Answer: C

Page Ref: 12

Bloom's: 1-2: Remembering/Understanding

19) When correctly situated in anatomical position, where are your feet in relation to your knees?

A) Proximal

B) Medial

C) Superior

D) Distal

E) Deep

Answer: D

Page Ref: 11-12

Bloom's: 1-2: Remembering/Understanding

20) Which of the following orientation and directional terms have the same meaning (in humans)?

A) Superior and caudal

B) Inferior and cranial

C) Inferior and cephalic

D) Anterior and ventral

E) Anterior and dorsal

Answer: D

Page Ref: 12

Bloom's: 1-2: Remembering/Understanding

21) Which directional term best describes the location of the human nose?

A) Distal

B) Posterior

C) Inferior

D) Anterior

E) Lateral

Answer: D

Page Ref: 12-13

Bloom's: 1-2: Remembering/Understanding

22) A football player broke a bone in the tarsal region. This region is in the \_\_\_\_\_\_\_\_.

A) calf

B) thigh

C) groin

D) ankle

E) wrist

Answer: D

Page Ref: 13

Bloom's: 1-2: Remembering/Understanding

23) A weight lifter experiences nerve pain in his posterior elbow region. Which term best describes this body region?

A) Carpal

B) Olecranal

C) Antecubital

D) Antebrachial

E) Popliteal

Answer: B

Page Ref: 13

Bloom's: 1-2: Remembering/Understanding

24) In reference to the relationship between the patellar and popliteal regions, which of the following statements is correct?

A) The patellar region is superior to the popliteal region.

B) The patellar region is proximal to the popliteal region.

C) The patellar region is distal to the popliteal region.

D) The patellar region is lateral to the popliteal region.

E) The patellar region is anterior to the popliteal region.

Answer: E

Page Ref: 12-13

Bloom's: 1-2: Remembering/Understanding

25) Which body cavity subdivision is part of the dorsal cavity?

A) Thoracic cavity

B) Spinal cavity

C) Nasal cavity

D) Orbital cavity

E) Abdominopelvic cavity

Answer: B

Page Ref: 16

Bloom's: 1-2: Remembering/Understanding

26) The lungs and heart are situated in the \_\_\_\_\_\_\_\_ body cavity.

A) dorsal

B) spinal

C) thoracic

D) cranial

E) abdominopelvic

Answer: C

Page Ref: 16

Bloom's: 1-2: Remembering/Understanding

27) Which of these body regions is located on the posterior body surface?

A) Antebrachial

B) Umbilical

C) Gluteal

D) Pectoral

E) Pubic

Answer: C

Page Ref: 14

Bloom's: 1-2: Remembering/Understanding

28) The region that refers to the fingers and toes is the \_\_\_\_\_\_\_\_.

A) carpal region

B) digital region

C) antebrachial region

D) brachial region

E) axillary region

Answer: B

Page Ref: 14

Bloom's: 1-2: Remembering/Understanding

29) The dorsal body cavity houses the \_\_\_\_\_\_\_\_.

A) urinary and reproductive organs

B) heart and lungs

C) digestive and reproductive organs

D) tongue

E) spinal cord and brain

Answer: E

Page Ref: 16

Bloom's: 1-2: Remembering/Understanding

30) Place these body regions in order from superior (proximal) to inferior (distal):

1) coxal

2) tarsal

3) femoral

4) crural

5) patellar

A) 1, 3, 4, 5, and 2

B) 1, 3, 5, 4, and 2

C) 1, 4, 3, 5, and 2

D) 2, 4, 5, 3, and 1

E) 2, 5, 4, 3, and 1

Answer: B

Page Ref: 13-14

Bloom's: 3-4: Applying/Analyzing

31) Which of these regions is *not* associated with the ventral (anterior) portion of the head?

A) Buccal

B) Oral

C) Orbital

D) Occipital

E) Nasal

Answer: D

Page Ref: 13-14

Bloom's: 1-2: Remembering/Understanding

32) A surgeon created an opening in the chest during surgery. The incision was made along a plane that equally separated the right and left halves of the thoracic cavity. This section is known as a(n) \_\_\_\_\_\_\_\_.

A) median (midsagittal) section

B) frontal section

C) transverse section

D) horizontal section

E) parasagittal section

Answer: A

Page Ref: 15

Bloom's: 1-2: Remembering/Understanding

33) Which type of plane separates the thoracic cavity from the abdominopelvic cavity?

A) Coronal

B) Sagittal

C) Dorsal

D) Ventral

E) Transverse (cross)

Answer: E

Page Ref: 15-16

Bloom's: 1-2: Remembering/Understanding

34) Which body cavity includes all others?

A) Thoracic cavity

B) Ventral cavity

C) Abdominal cavity

D) Pelvic cavity

E) Mediastinum

Answer: B

Page Ref: 16

Bloom's: 1-2: Remembering/Understanding

35) A broken rib on the right side of the body would likely be felt in the

A) right lumbar region.

B) epigastric region.

C) right hypochondriac region.

D) right iliac (inguinal) region.

E) hypogastric region.

Answer: C

Page Ref: 17-18

Bloom's: 3-4: Applying/Analyzing

36) An X-ray indicates a fracture in the distal portion of the tibia bone. You understand the fracture to be on which part of the bone?

A) The part of the bone farther from the attachment of the femur to the body

B) The part of the bone closer to the attachment of the femur to the body

C) The backside of the bone

D) The part of the bone closer to the midline of the body

E) The surface of the bone

Answer: A

Page Ref: 12

Bloom's: 3-4: Applying/Analyzing

37) A patient in the emergency department complains of pain in her right upper quadrant (RUQ). What organ is *least* likely to be the cause for her pain?

A) Liver

B) Gallbladder

C) Large intestine

D) Urinary bladder

E) Small intestine

Answer: D

Page Ref: 17

Bloom's: 3-4: Applying/Analyzing

38) Considering the homeostatic control of body temperature when we become too hot, predict what would happen to body temperature if the effector was unable to perform its job.

A) The body would no longer be able to detect changes in the environment.

B) Changes in the environment would not cause a change in the set value for body temperature.

C) The body would not be able to transport information to the control center.

D) The body would not be able to reduce the effect of the stimulus.

E) The body would not be able to transport information from the control center to the effector.

Answer: D

Page Ref: 19

Bloom's: 5: Evaluating

39) A patient previously had abdominal surgery and has a scar from a transverse (cross) section. Now, he'll have another surgery that requires a parasagittal section, which will intersect the transverse section. What will his scars look like when his surgical incision heals? Assume this patient is in anatomical position.

A) X

B) T

C) +

D) Two parallel lines

E) Y

Answer: C

Page Ref: 15-16

Bloom's: 5: Evaluating

40) A patient with a brain injury shows no signs of being able to move any part of his body. What would you recommend to determine if his brain shows any signs of responsiveness (irritability)?

A) Shine a light in his eyes to see if his pupils constrict

B) Bring food in the room to see if the patient is hungry

C) Check to see if your patient has a pulse

D) Turn the lights off in the room to see if the patient can sleep

E) Call the patient's relatives

Answer: A

Page Ref: 7-8

Bloom's: 5: Evaluating

41) An outpatient is having a scan performed to check for lung cancer. The lung should be scanned showing the lungs image in a left to right view. What type of plane do you recommend?

A) Transverse (cross) plane

B) Median (midsagittal) plane

C) Frontal (coronal) plane

D) Parasagittal plane

E) Sagittal plane

Answer: A

Page Ref: 15-16

Bloom's: 5: Evaluating

1.3 True/False Questions

1) Cells are the building blocks of all matter.

Answer: FALSE

Page Ref: 2

Bloom's: 1-2: Remembering/Understanding

2) The stomach is an example of an organ; therefore, it is made of different types of tissues.

Answer: TRUE

Page Ref: 2

Bloom's: 1-2: Remembering/Understanding

3) Glands of the nervous system release chemicals called hormones into the blood.

Answer: FALSE

Page Ref: 4

Bloom's: 1-2: Remembering/Understanding

4) The cardiovascular and lymphatic systems work together to ensure blood circulation to the body's cells is adequate.

Answer: TRUE

Page Ref: 4

Bloom's: 1-2: Remembering/Understanding

5) The digestive system is often called the excretory system for its role in removing nitrogen-containing wastes from the body.

Answer: FALSE

Page Ref: 7

Bloom's: 1-2: Remembering/Understanding

6) Most homeostatic control mechanisms are negative feedback mechanisms.

Answer: TRUE

Page Ref: 19

Bloom's: 1-2: Remembering/Understanding

7) Survival needs include nutrients, oxygen, water, and appropriate temperature and atmospheric pressure.

Answer: TRUE

Page Ref: 9

Bloom's: 1-2: Remembering/Understanding

8) In anatomical position, a person is assumed to be standing erect.

Answer: TRUE

Page Ref: 11

Bloom's: 1-2: Remembering/Understanding

9) The regional term pedal refers to the foot.

Answer: TRUE

Page Ref: 13-14

Bloom's: 1-2: Remembering/Understanding

10) The tarsal region is proximal to the patellar region.

Answer: FALSE

Page Ref: 12-14

Bloom's: 1-2: Remembering/Understanding

11) The hypogastric (pubic) region is directly superior to the umbilical region.

Answer: FALSE

Page Ref: 17

Bloom's: 1-2: Remembering/Understanding

12) The thoracic cavity is separated from the abdominopelvic cavity by the diaphragm.

Answer: TRUE

Page Ref: 16

Bloom's: 1-2: Remembering/Understanding

13) The spinal cavity is part of the ventral body cavity.

Answer: FALSE

Page Ref: 12, 16

Bloom's: 1-2: Remembering/Understanding

14) Transverse or cross sections divide the body into anterior and posterior parts.

Answer: FALSE

Page Ref: 16

Bloom's: 1-2: Remembering/Understanding

15) There is no physical structure that separates the abdominal cavity from the pelvic cavity.

Answer: TRUE

Page Ref: 16

Bloom's: 1-2: Remembering/Understanding

1.4 Matching Questions

*Match the following:*

A) farther from the origin of a body part or the point of attachment of a limb to the body trunk

B) away from the midline

C) behind

D) toward the midline

E) external

F) anterior

G) above

H) internal

1) Superior

Page Ref: 12

Bloom's: 1-2: Remembering/Understanding

2) Dorsal

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Bloom's: 1-2: Remembering/Understanding

3) Lateral

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4) Deep

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I) close to the origin of the body part or the point of attachment of a limb to the body trunk

5) Distal

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6) Medial

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7) Superficial

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8) Proximal

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Bloom's: 1-2: Remembering/Understanding

9) Ventral

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Bloom's: 1-2: Remembering/Understanding

Answers: 1) G 2) C 3) B 4) H 5) A 6) D 7) E 8) I 9) F

*Match the following:*

A) thigh

B) calf

C) forearm

D) arm

E) curve of shoulder

F) hip

G) anterior leg

H) groin

I) armpit

J) ankle

10) Axillary

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Bloom's: 1-2: Remembering/Understanding

11) Tarsal

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12) Deltoid

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13) Antebrachial

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14) Femoral

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15) Sural

Page Ref: 13-14

Bloom's: 1-2: Remembering/Understanding

16) Coxal

Page Ref: 13-14

Bloom's: 1-2: Remembering/Understanding

17) Inguinal

Page Ref: 13-14

Bloom's: 1-2: Remembering/Understanding

18) Brachial

Page Ref: 13-14

Bloom's: 1-2: Remembering/Understanding

19) Crural

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Bloom's: 1-2: Remembering/Understanding

Answers: 10) I 11) J 12) E 13) C 14) A 15) B 16) F 17) H 18) D 19) G

*Match the following organ systems with their functions:*

A) lymphatic system

B) digestive system

C) urinary system

D) muscular system

E) integumentary system

F) endocrine system

20) Glands secrete hormones to regulate other structures

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Bloom's: 1-2: Remembering/Understanding

21) Breaks down food for distribution by blood to the body's cells

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Bloom's: 1-2: Remembering/Understanding

22) Movement of the body as a whole

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Bloom's: 1-2: Remembering/Understanding

23) Removes nitrogen-containing wastes from the blood and disposes of them in the urine

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24) Picks up fluids leaked from blood vessels and returns it to blood

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Bloom's: 1-2: Remembering/Understanding

25) Excretes salts in perspiration and helps regulate body temperature

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Bloom's: 1-2: Remembering/Understanding

Answers: 20) F 21) B 22) D 23) C 24) A 25) E

1.5 Essay Questions

1) Explain the relationship between anatomy and physiology.

Answer: Anatomy is the study of the structure and shape of the body and its parts and their relationships to one another. Physiology is the study of how the body and its parts work or function. Structure (anatomy) determines what functions (physiology) can take place in the human body.

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Bloom's: 1-2: Remembering/Understanding

2) List, and briefly define, the human body's organization levels from smallest to largest.

Answer:

1. Chemical level:

a. atoms are the basic building blocks of matter.

b. molecules are units formed by atoms combining.

2. Cellular level: Cells are the smallest living units in living organisms.

3. Tissue level: Tissues are groupings of cells performing a common function.

4. Organ level: An organ is a structure consisting of two or more tissue types.

5. Organ system level: An organ system describes a group of organs functioning cooperatively for a common purpose.

6. Organism level: A human organism consists of all of the organ systems of the body working together to promote healthy functioning (homeostasis).

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Bloom's: 1-2: Remembering/Understanding

3) Identify the organ system that bears the major responsibility for responsiveness, one of the necessary life functions, and briefly explain the system's role in the body.

Answer: The nervous system bears the major responsibility for responsiveness (or irritability), the ability to sense changes (stimuli) in the environment and then react to them. Nerve cells are highly irritable and can communicate rapidly via electrical and is thus the fast-acting control system of the body. This system responds to internal and external changes by activating appropriate muscles and glands.

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Bloom's: 1-2: Remembering/Understanding

4) List and explain the five survival needs of humans.

Answer:

1. Nutrients include carbohydrates, proteins, fats, and vitamins and minerals, which are taken in via the diet for energy and cell building.

2. Oxygen is required to release energy from food.

3. Water accounts for 60 to 80 percent of the body weight and provides the basis for various body fluids.

4. Normal body temperature should be around 37°C or 98.6°F. When body temperature becomes too high or too low, physiological activities cease, primarily because chemical reactions are affected.

5. Appropriate atmospheric pressure is the force exerted on the surface of the body by the weight of air; it is essential for normal operation of the respiratory system and breathing.

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Bloom's: 1-2: Remembering/Understanding

5) A young child needs an X-ray to determine if she has fractured some bones in her arm. The X-ray should be taken with the arm in the lateral view. The radiology technologist makes an error and performs a frontal (coronal) view instead. Evaluate her error.

Answer: There should be concern for this error as the lateral view is a side view of the elbow while the anterior view is a front view of the elbow. The lateral X-ray view may reveal certain structures or fractures not seen in an anterior view. The anterior view may not allow a fracture to be seen due to the positioning of the bones in the elbow joint. This positioning error could lead to a possible misdiagnosis.

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Bloom's: 5: Evaluating

6) Identify the two dorsal body cavities, and state their locations and the organs contained therein.

Answer:

1. Cranial cavity—the superior posterior space inside the bony skull that houses the brain.

2. Spinal cavity—the inferior posterior space inside the bony vertebral column that houses the spinal cord.

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Bloom's: 1-2: Remembering/Understanding

7) You are preparing to give an injection to a patient in his deltoid region. Explain specifically where you will administer this injection.

Answer: The deltoid region is a visible landmark on the anterior body surface. The injection will be administered into the area formed by the large deltoid muscle and the curve of the shoulder.

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Bloom's: 1-2: Remembering/Understanding

8) Explain how the roles of the receptor and effector differ in the negative feedback mechanism to maintain homeostasis.

Answer: In the negative feedback mechanism, the receptor is a type of sensor that monitors and responds to changes, called stimuli, in the environment. The receptor sends input information to a control center in the feedback loop. The control center analyzes the information it receives and determines an appropriate course of action. The effector provides the means for the control center's response (output) to the stimulus. The results of the response then feedback to influence the stimulus.

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Bloom's: 1-2: Remembering/Understanding

9) Explain the terms *distal* and *proximal* using an example.

Answer: The term distal means farther from the origin of a body part or point or the attachment of a limb to the trunk. The *ankle is distal to the knee* means the ankle is farther from the leg's attachment to the trunk than the knee. The term proximal means closer to the origin of a body part of the point of attachment of a limb to the trunk. The *knee is proximal to the ankle* means the knee is closer to the leg's attachment to the trunk than the ankle.

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Bloom's: 1-2: Remembering/Understanding

10) We sometimes hear stories of medical mistakes being made such an amputation of the left leg when the right leg was the intended limb. How should the use of anatomical position help medical professionals avoid these types of errors?

Answer: Anatomical position is defined as standing erect, feet parallel, the arms hanging at the sides with the palms facing forward. Anatomical position is used because it is a standard position; it also helps us to avoid confusion. Additionally, anatomical position is a reference point that helps us accurately describe body parts and position no matter the actual position the body happens to be in. Medical professionals should remember to look at the patient's own left and right sides–not their own–as that will help reduce errors in practice.

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Bloom's: 3-4: Applying/Analyzing

11) Explain homeostasis as it relates to the human body.

Answer: Homeostasis is the body's ability to maintain relative stable internal conditions even though the outside world is continuously changing. Homeostasis is a dynamic state of equilibrium, or a balance in which internal conditions change and vary but always within relatively narrow limits. The body demonstrates homeostasis when its needs are being adequately met, and it is functioning smoothly.

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Bloom's: 1-2: Remembering/Understanding

12) Burn patients have difficulty in regulating their body temperatures, in part due to the loss of their protective covering. Given your knowledge of how homeostatic control systems operate, predict why burn patients may often be cold.

Answer: Sensory receptors located in the skin alert us to what is happening at the body surface. While these receptors are situated in the integumentary system, they are part of the nervous system. Skin sensory receptors normally detect changes in temperature and send messages along an afferent pathway to the control center (central nervous system). When a person experiences burns, these sensory receptors can be damaged. They may no longer send messages to the control center about changes in temperature, such as when a person is too cold. As a result, the control center will not receive adequate input to alert effectors to warm the body when needed. As a result, the patient will be cold.

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Bloom's: 3-4: Applying/Analyzing