Essentials of Human Anatomy and Physiology, 10e (Marieb)

Chapter 1 The Human Body: An Orientation

1.1 Short Answer



*Using Figure 1.1, identify the following:*1) Identify the cavity that houses the brain.

2) Label B points to the _____ cavity.

3) Identify and name the cavity formed by the rib cage.

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

5) Label E points to the _____ cavity.

6) Identify the cavity that houses reproductive organs, urinary bladder, and the rectum.

*Fill in the blank or provide a short answer:*7) Groups of cells that have a common function are termed ______.

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

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9) The system that functions in the storage of minerals, such as calcium, is called the system.
10) The system rids the body of indigestible food residue in feces while the system removes nitrogen-containing metabolic waste in urine.
11) refers to all of the chemical reactions in the body.
12) The ability to sense changes and react to them is termed or
13) The component of a control system that provides the means for the control center's response (output) is called the
14) The study of the body's small structures using a microscope is called
15) The role of the effector in the negative feedback mechanism is to the stimulus while it the stimulus in the positive feedback mechanism.
16) The body's ability to maintain stable internal conditions is referred to as
17) The navel is to the spine.
18) The armpit area is called the region.
19) The antebrachial region is to the brachial region.
20) The right and left iliac (inguinal) regions are lateral to the region.
21) The cranial and spinal cavities are subdivisions of the cavity.
22) A section divides the body into equal left and right halves.

23) Ventral is a directional term synonymous with ______ in humans.

24) The three medial regions of the abdominopelvic cavity are _____, ____, and _____.

25) The navel is located in the _____ region of the abdominopelvic cavity.

26) The two major body cavities are _____ and _____.

27) Blood clotting and the birth of a baby are examples of the ______ feedback mechanism.

28) The abdominopelvic cavity has _____ quadrants and _____ regions.

29) The thoracic cavity is ______ to the abdominopelvic cavity.

30) The epigastric region is ______ to the right hypochondriac region of the abdominopelvic cavity.



Figure 1.2

Using Figure 1.2, identify the following:

31) Which region is associated with the hip and is situated lateral to the hypogastric region?

- 32) Which region is the umbilical region?
- 33) Which region is lateral to the umbilical region?
- 34) Which region is associated with the lower ribs?
- 35) The hypogastric region is:
- 36) The epigastric region is:

1.2 Multiple Choice

1) The study of the function of the body and body parts is called:

A) anatomy

- B) physiology
- C) homeostasis
- D) negative feedback
- E) irritability

2) Which of the following activities does NOT represent an anatomical study:

- A) making a section through the heart to observe its interior
- B) examining the surface of a bone
- C) viewing muscle tissue through a microscope
- D) studying how the nerves conduct electrical impulses
- E) observing the parts of a reproducing cell

3) Which of the following is the correct sequence, going from simplest to most complex, in the levels of structural organization of the human body:

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

4) The building blocks of *all* matter are known as:

- A) organs
- B) tissues
- C) atoms
- D) cells
- E) organ systems

5) Hematopoiesis, or blood cell formation, is a function of the:

- A) muscular system
- B) respiratory system
- C) skeletal system
- D) nervous system
- E) integumentary system

6) The main function of the respiratory system is:

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

7) The system that controls and coordinates the body through hormones is the:

- A) integumentary system
- B) skeletal system
- C) nervous system
- D) endocrine system
- E) digestive system

8) 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

9) What is the major function of the urinary system:

- A) return leaked fluids back to the cardiovascular system
- B) produce offspring
- C) eliminate nitrogen-containing metabolic wastes from the body
- D) break down food into absorbable units
- E) secrete hormones to regulate body processes such as growth and reproduction

10) Which of the following is NOT a necessary life *function*:

- A) maintaining boundaries
- B) movement
- C) responsiveness
- D) nutrients
- E) metabolism

11) 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

12) Which of these is NOT a survival need:

A) nutrients

B) oxygen

C) water

D) reproduction

E) body temperature

13) Which of the following is the correct order of elements in a control system:

A) receptor, stimulus, afferent pathway, control center, efferent pathway, effector, response B) receptor, stimulus, efferent pathway, control center, afferent pathway, effector, response C) effector, stimulus, efferent pathway, control center, afferent pathway, receptor, response D) stimulus, receptor, afferent pathway, control center, efferent pathway, effector, response E) stimulus, receptor, efferent pathway, control center, afferent pathway, effector, response

14) Which of the following elements of a control system detects a change:

A) control center

B) stimulus

C) effector

D) receptor

E) efferent pathway

15) Positive feedback systems:

A) regulate heart and breathing rates

B) operate in such a way that the initial stimulus is enhanced and increases

C) operate in such a way that the initial stimulus is shut off or reduced

D) regulate heart and breathing rates, and operate in such a way that the initial stimulus is enhanced and increases

E) regulate heart and breathing rates, and operate in such a way that the initial stimulus is shut off or reduced

16) When correctly situated in anatomical position, where are your feet in relation to your knees:

A) proximalB) medialC) superiorD) distal

E) deep

17) 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 cephalad
- D) anterior and ventral
- E) anterior and dorsal

18) Which of the following orientation terms have opposite meanings (in humans):

- A) superficial and proximal
- B) distal and proximal
- C) medial and distal
- D) medial and anterior
- E) posterior and intermediate

19) Which of the following regional terms means the anterior surface of the elbow:

- A) calcaneal region
- B) scapular region
- C) gluteal region
- D) vertebral region
- E) antecubital region

20) Mandy pulled a muscle in the inguinal region. Where is this region:

A) groinB) buttockC) legD) thighE) hip

21) In describing the relationship between the patellar and popliteal regions:

- 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

22) Which body cavity can be subdivided into four quadrants and nine regions:

- A) thoracic cavity
- B) spinal cavity
- C) nasal cavity
- D) orbital cavity
- E) abdominopelvic cavity

23) The lungs and heart are situated in the _____ body cavity.

- A) dorsal
- B) spinal
- C) thoracic
- D) cranial
- E) abdominopelvic

24) Which of these body regions is located on the anterior side of the body:

- A) popliteal
- B) sternal
- C) lumbar
- D) gluteal
- E) occipital

25) The region that refers to the fingers and toes is the:

A) carpal regionB) digital regionC) antebrachial regionD) brachial region

- D) bracinal legion
- E) axillary region

29) The dorsal body cavity houses the:

A) urinary and reproductive organsB) heart and lungsC) digestive and reproductive organsD) tongueE) spinal cord and brain

30) Which of these regions are associated with the parts of the arm:

A) femoral, popliteal, patellar

B) brachial, antecubital, carpal

C) nasal, oral, occipital

D) acromial, sacral, gluteal

E) pelvic, pubic, inguinal

31) Which of these regions is NOT associated with the ventral (anterior) portion of the head:

A) buccal B) oral

 \mathbf{D}) oral \mathbf{C}) orbit

C) orbital D) occipital

E) nasal

32) A section that divides the body on the longitudinal plane into equal right and left parts is called:

A) median (midsagittal)

B) frontal

C) transverse

D) oblique

E) coronal

33) Which type of section could be used to separate the thoracic cavity from the abdominopelvic cavity:

A) coronal

B) sagittal

C) dorsal

- D) ventral
- E) transverse

34) Which ventral cavity subdivision has no bony protection:

A) thoracicB) pelvicC) abdominalD) cranialE) spinal

35) Which set of regions in the abdominopelvic cavity is medial:

A) umbilical, right lumbar, and left lumbar regions

B) epigastric, umbilical, and hypogastric regions

C) iliac (inguinal), lumbar, and hypogastric regions

D) epigastric, right, and left hypochondriac regions

E) right and left iliac (inguinal), and hypogastric regions

36) The thoracic cavity is ______ to the abdominopelvic cavity.

A) inferior

B) lateral

C) proximal

D) superior

E) dorsal

37) The ribs are located in the:

A) right and left iliac regions

B) right and left lumbar regions

C) right and left pubic regions

D) right and left hypochondriac regions

E) right and left inguinal regions

38) Which of the following statements is correct regarding the location of the stomach:

A) the stomach is located in the left upper quadrant

B) the stomach is located in the right upper quadrant

C) the stomach is located medially

D) the stomach is located in the left lower quadrant

E) the stomach is located in the right lower quadrant

1.3 True/False

1) The highest level of structural organization in humans is the organ level.

2) The adrenals, pancreas, thyroid, and parathryoids are glands of the endocrine system.

3) The lymphatic system collects fluids leaked by the cardiovascular system and returns them to the bloodstream.

4) The maintenance of boundaries between the internal organs of the body and the outside world is achieved by the endocrine system.

5) Most homeostatic control mechanisms are negative feedback reactions.

6) The human body consists of approximately 60% to 80% water.

7) In anatomical positions, the palms are oriented medially.

8) The heel of the foot constitutes the plantar region.

9) Proximal means farther from the origin of a body part.

10) The hypogastric region is directly superior to the umbilical region.

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

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

13) Transverse or horizontal sections divide the body into anterior and posterior parts.

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

1.4 Matching

Match the following:

	A) on the inner side
1) Superior	
	B) behind
2) Dorsal	
	C) away from the body surface
3) Lateral	
	D) in front of
4) Deep	
	E) toward the body surface
5) Distal	
	F) away from the head
6) Medial	
	G) farther from the origin of a body part or the point of attachment of a limb
7) Superficial	
	H) toward the head
8) Proximal	
	I) away from the midline
9) Ventral	
	J) close to the origin of the body part or the point of attachment of a limb
	K) toward the midline

Match the following:

	A) elbow
10) Axillary	
11) Olecranal	B) anterior knee
	C) posterior knee
12) Deltoid	
13) Antebrachial	D) curve of shoulder
13/7 Inteofuentia	E) leg
14) Popliteal	
15) Umbilical	F) forearm
13) Ontonical	G) lateral surface of leg
16) Occipital	
17) Fibular	H) posterior surface of head
	I) navel
18) Patellar	
	J) armpit
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Match the following.

20) Produces hormones	A) endocrine system
	B) digestive system
21) Cleansing of blood by lymph nodes	
22) Site of hematopoiesis	C) muscular system
	D) integumentary system
23) Regulation of water and electrolytes	E) urinary system
24) Skeletal muscles move the bones	
25) Helps regulate body temperature	F) skeletal system
	G) lymphatic system
	H) respiratory system

1.5 Essay

1) Distinguish between anatomy and physiology.

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

3) Of the eight necessary human life functions, which one do you think is not absolutely necessary for us to survive on an organismal level? Explain your choice.

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

5) Describe how a *midsagittal* section differs from a *sagittal* section.

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

7) Explain how scratching an itch is an example of the negative feedback mechanism.

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

9) Describe the role of the effector in the negative feedback system.

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