Name Chapter 1--Introduction to Physiology and Homeostasis

Description
Instructions Modify

Add Question Here

Question 1 **Multiple Choice** **0 points** Modify Remove

Question Select the incorrect association.
Answer
anatomy/body structure
human body/multicellular
✓ oxygen/cell waste product
physiology/body function
unicellular/one-celled

Add Question Here

Question 2 **Multiple Choice** **0 points** Modify Remove

Question Which of the following is a mechanistic rather than a teleological explanation of a physiological phenomenon?
Answer
A person breathes to obtain oxygen.
A person sweats to cool off.
✓ A person's stomach secretes digestive juices because it is stimulated by the nervous system.
A person's heart beats to pump blood.
A person's kidneys produce urine to eliminate wastes from the body.

Add Question Here

Question 3 **Multiple Choice** **0 points** Modify Remove

Question When a blood capillary is cut, a clot forms under which influence?
Answer
negative feedback
✓ positive feedback
extrinsic control
negative feedback and extrinsic control
none of these

Add Question Here

Question 4 **Multiple Choice** **0 points** Modify Remove

Question The term *smooth* refers to a type of ____ tissue.
Answer
connective
epithelial
glandular
✓ muscle
nervous

Add Question Here

Question 5 **Multiple Choice** **0 points** Modify Remove

Question Which of the following factors of the internal environment are homeostatically maintained?
Answer
concentration of nutrient molecules
concentration of oxygen and carbon dioxide
pH
temperature
✓ all of these

Add Question Here

Question 6 **Multiple Choice** **0 points** Modify Remove

Question The outer layer of the skin consists of ____ tissue.
Answer
connective
endocrine
✓ epithelial
muscle
nervous

Add Question Here

Question 7 **Multiple Choice** **0 points** Modify Remove

Question The respiratory system
Answer
obtains O_2 from and eliminates CO_2 to the internal environment
includes the heart and lungs
✓ helps regulate the pH of the internal environment by removing acid-forming CO_2 from the blood
all of the these
obtains O_2 from and eliminates CO_2 to the internal environment and helps regulate the pH of the internal environment by removing acid-forming CO_2 from the blood

Add Question Here

Question 8 **Multiple Choice** **0 points** Modify Remove

Question Select the incorrect statement about connective tissue.
Answer
Bone is an example.
Blood is an example.
Elastin may be found in the extracellular material.

✔ It has tightly-packed cells.
It is a primary tissue type.

Add Question Here

Question 9 **Multiple Choice** **0 points** Modify Remove

Question Which of the following body systems is not directed entirely toward maintaining homeostasis?
Answer
reproductive system
endocrine system
nervous system
all of these
✔ reproductive and nervous systems

Add Question Here

Question 10 **Multiple Choice** **0 points** Modify Remove

Question Which sequence represents the correct hierarchy of biological organization in a human?
Answer
cell-organ-tissue-system-organism
✔ cell-tissue-organ-system-organism
tissue-cell-system-organism-organ
organ-tissue-cell-organism-system
system-cell-organ-organism-tissue

Add Question Here

Question 11 **Multiple Choice** **0 points** Modify Remove

Question The internal environment
Answer
is not in direct contact with the body's cells
consists of the intracellular fluid
must be maintained at absolutely unchanging composition, temperature, and volume for survival of the body
✔ is in direct contact with the body's cells and consists of the extracellular fluid
consists of the intracellular fluid and must be maintained at absolutely unchanging composition, temperature, and volume for survival of the body

Add Question Here

Question 12 **Multiple Choice** **0 points** Modify Remove

Question Extracellular fluid
Answer
is the internal environment of the body
is outside the cells but inside the body
consists of the plasma and interstitial fluid
exhibits a dynamic steady state in regard to composition, temperature, and volume
✔ all of these

Add Question Here

Question 13 **Multiple Choice** **0 points** Modify Remove

Question Nutrients and oxygen are distributed through the body mainly by the ____ system.
Answer
✔ circulatory
digestive
endocrine
integumentary
skeletal

Add Question Here

Question 14 **Multiple Choice** **0 points** Modify Remove

Question Which of the following statements about negative feedback is incorrect?
Answer
It exists when a change in a regulated variable triggers a response that opposes the change.
It exists when the input to a system increases the output and the output inhibits the input.
✔ The control system's input and output continue to enhance each other.
It is the method by which most of the body's control mechanisms operate.
It helps maintain the body's dynamic, steady state.

Add Question Here

Question 15 **Multiple Choice** **0 points** Modify Remove

Question Identify the characteristics associated with endocrine glands.
Answer
lack ducts
secrete chemicals directly into the blood
derived from epithelial tissue
include the parathyroids
✔ all of these

Add Question Here

Question 16 **Multiple Choice** **0 points** Modify Remove

Question Which of the following is least related to connective tissue?
Answer
✔ thymus
bone
blood
tendon
elastin

Add Question Here

Question 17 **Multiple Choice** **0 points** Modify Remove

Question Which of the following is not an example of negative feedback?

Answer
- A low grade on an exam causes a student to study harder for the next exam.
- ✓ A small stone rolls down a hill and starts an avalanche.
- A person goes to eat in the cafeteria when he/she gets hungry.
- You change a flat tire so you can continue on a journey in your car.
- A person's body shivers after the person falls into a cold river.

Add Question Here

Question 18 **Multiple Choice** **0 points** Modify Remove

Question Evaporation of sweat cooling the body is an example of

Answer
- ✓ negative feedback
- positive feedback
- a feedforward mechanism
- an intrinsic (local) control mechanism
- autoregulation

Add Question Here

Question 19 **Multiple Choice** **0 points** Modify Remove

Question The two systems concerned with the control of body functioning are:

Answer
- nervous and respiratory
- ✓ nervous and endocrine
- endocrine and respiratory
- endocrine and lymphatic
- circulatory and endocrine

Add Question Here

Question 20 **Multiple Choice** **0 points** Modify Remove

Question Calcium is stored mainly in the ____ system.

Answer
- digestive
- endocrine
- integumentary
- muscular
- ✓ skeletal

Add Question Here

Question 21 **Multiple Choice** **0 points** Modify Remove

Question If a letter in the alphabet is equated to a cell, then ____ would be most like an organ.

Answer
- two paragraphs
- a paragraph
- a word
- ✓ a sentence
- two sentences

Add Question Here

Question 22 **Multiple Choice** **0 points** Modify Remove

Question Identify the correct statement(s) about stem cells.

Answer
- They are undifferentiated embryonic cells.
- They may reproduce many times.
- Their daughter cells may differentiate into a number of different specialized cell types.
- ✓ All of these.
- None of these.

Add Question Here

Question 23 **Multiple Choice** **0 points** Modify Remove

Question Which of the following is a feedforward phenomenon?

Answer
- ✓ increasing the amount of insulin secreted before nutrients in food enter the blood
- shivering in response to having cold air around the body
- sweating after being in a sauna for 10 minutes
- eating a doughnut because you are hungry
- shivering in response to having cold air around the body and sweating after being in a sauna for 10 minutes

Add Question Here

Question 24 **True/False** **0 points** Modify Remove

Question Cells eliminate carbon dioxide as a waste product.

Answer
- ✓ True
- False

Add Question Here

Question 25 **True/False** **0 points** Modify Remove

Question All cells that are not pluripotent can reproduce.

Answer
- True
- ✓ False

Add Question Here

Question 26 · **True/False** **0 points** Modify Remove

Question Highly differentiated tissues such as nervous and cardiac muscle are incapable of reproduction because they are pluripotent.
Answer
True
✓ False

Add Question Here

Question 27 · **True/False** **0 points** Modify Remove

Question Enzymes are carbohydrates that speed up chemical reactions in the body.
Answer
True
✓ False

Add Question Here

Question 28 · **True/False** **0 points** Modify Remove

Question A mechanistic explanation of why a person breathes is to obtain oxygen.
Answer
True
✓ False

Add Question Here

Question 29 · **True/False** **0 points** Modify Remove

Question A teleological (non-mechanistic) explanation of why a person sweats is to cool off.
Answer
✓ True
False

Add Question Here

Question 30 · **True/False** **0 points** Modify Remove

Question Tissues are composed of two or more types of cells organized to perform a particular function or functions.
Answer
True
✓ False

Add Question Here

Question 31 · **True/False** **0 points** Modify Remove

Question Blood is a type of connective tissue that contains small fibers of elastin protein in the extracellular material called plasma.
Answer
True
✓ False

Add Question Here

Question 32 · **True/False** **0 points** Modify Remove

Question Glands are formed during embryonic development by pockets of epithelial tissue that dip inward from the surface.
Answer
✓ True
False

Add Question Here

Question 33 · **True/False** **0 points** Modify Remove

Question Endocrine glands secrete hormones through ducts into the blood.
Answer
True
✓ False

Add Question Here

Question 34 · **True/False** **0 points** Modify Remove

Question Insulin is a hormone that is secreted into the lumen of the intestine in response to the presence of food.
Answer
True
✓ False

Add Question Here

Question 35 · **True/False** **0 points** Modify Remove

Question The epidermis that covers the skin is a simple organ.
Answer
True
✓ False

Add Question Here

Question 36 · **True/False** **0 points** Modify Remove

Question The external environment is found outside cells but inside the body.
Answer
True
✓ False

Add Question Here

Question 37 · **True/False** **0 points** Modify Remove

Question Factors that are homeostatically regulated are maintained at a constant, fixed level unless disease is present.
Answer
True
✓ False

Add Question Here

Question 38 **True/False** **0 points** Modify Remove

Question The lungs remove carbon dioxide from the blood plasma.
Answer
✓ True
False

Add Question Here

Question 39 **True/False** **0 points** Modify Remove

Question To sustain life, the internal environment must be maintained in an absolutely unchanging state.
Answer
True
✓ False

Add Question Here

Question 40 **True/False** **0 points** Modify Remove

Question Some activities performed by the muscular and nervous systems are not directed toward maintaining homeostasis.
Answer
✓ True
False

Add Question Here

Question 41 **True/False** **0 points** Modify Remove

Question The plasma surrounds and bathes all of the body's cells.
Answer
True
✓ False

Add Question Here

Question 42 **True/False** **0 points** Modify Remove

Question The concentration of salt in the extracellular fluid influences how water enters and leaves cells.
Answer
✓ True
False

Add Question Here

Question 43 **True/False** **0 points** Modify Remove

Question Exocrine glands are the only structures in the body capable of secretion.
Answer
True
✓ False

Add Question Here

Question 44 **True/False** **0 points** Modify Remove

Question Secretion in response to appropriate stimulation refers to the release of specific products that have, in large part, been synthesized by the cell.
Answer
✓ True
False

Add Question Here

Question 45 **True/False** **0 points** Modify Remove

Question The endocrine system relies on the circulatory system for the transport of hormones.
Answer
✓ True
False

Add Question Here

Question 46 **True/False** **0 points** Modify Remove

Question One organ can belong to more than one body system.
Answer
✓ True
False

Add Question Here

Question 47 **True/False** **0 points** Modify Remove

Question The integumentary system contains specialized organs called sweat glands, which are important in regulating body temperature.
Answer
✓ True
False

Add Question Here

Question 48 **True/False** **0 points** Modify Remove

Question Negative feedback operates to maintain a controlled factor in a relatively steady state.
Answer
✓ True
False

Add Question Here

Question 49 **True/False** **0 points** Modify Remove

Question Positive feedback moves a controlled variable even further away from a steady state.
Answer
✓ True

False

Add Question Here

Question 50 **True/False** **0 points** Modify Remove

Question With positive feedback, a control system's input and output continue to enhance each other.
Answer
✓ True
False

Add Question Here

Question 51 **True/False** **0 points** Modify Remove

Question Feedforward mechanisms bring about a response in reaction to a change in a regulated variable.
Answer
True
✓ False

Add Question Here

Question 52 **True/False** **0 points** Modify Remove

Question Most homeostatic mechanisms operate on the principle of positive feedback.
Answer
True
✓ False

Add Question Here

Question 53 **True/False** **0 points** Modify Remove

Question A single pluripotent cell without dividing can differentiate into more than one kind of mature body cell.
Answer
True
✓ False

Add Question Here

Question 54 **Fill in the Blank** **0 points** Modify Remove

Question Complete each of the following statments.

The smallest unit capable of carrying out the processes associated with life is the _____.
Answer cell

Add Question Here

Question 55 **Fill in the Blank** **0 points** Modify Remove

Question Complete each of the following statments.

_____ cells are specialized to send electrical signals.
Answer Nerve

Add Question Here

Question 56 **Fill in the Blank** **0 points** Modify Remove

Question Complete each of the following statments.

_____ muscle tissue composes the heart.
Answer Cardiac

Add Question Here

Question 57 **Fill in the Blank** **0 points** Modify Remove

Question Complete each of the following statments.

_____ are composed of two or more types of primary tissue organized to perform a particular function or functions.
Answer Organs

Add Question Here

Question 58 **Fill in the Blank** **0 points** Modify Remove

Question Complete each of the following statments.

_____ glands secrete through ducts, whereas _____ glands secrete directly into the blood.
Answer Exocrine, endocrine

Add Question Here

Question 59 **Fill in the Blank** **0 points** Modify Remove

Question Complete each of the following statments.

A(n) _____ is a collection of organs that perform related functions and interact to accomplish a common activity that is essential for survival of the whole body.
Answer system

Add Question Here

Question 60 **Fill in the Blank** **0 points** Modify Remove

Question Complete each of the following statments.

The internal environment consists of the _____, which is made up of _____; the fluid portion of the blood; and _____, which surrounds and bathes all cells.
Answer extracellular fluid, plasma, interstitial fluid

Add Question Here

Question 61 **Fill in the Blank** **0 points** Modify Remove

Question Complete each of the following statments.

The _____ is the liquid part of the blood.
Answer plasma

Add Question Here

Question 62 **Fill in the Blank** **0 points** Modify Remove

Question Complete each of the following statments.

The body cells are in direct contact with, and make life-sustaining exchanges with, the _____.
Answer internal environment (extracellular fluid)

Add Question Here

Question 63 **Fill in the Blank** **0 points** Modify Remove

Question Complete each of the following statments.

_____ refers to maintenance of a relatively stable internal environment.
Answer Homeostasis

Add Question Here

Question 64 **Fill in the Blank** **0 points** Modify Remove

Question Complete each of the following statments.

_____ tissue is composed of cells specialized for contraction and force generation.
Answer Muscle

Add Question Here

Question 65 **Fill in the Blank** **0 points** Modify Remove

Question Complete each of the following statments.

The _____ system consists of all hormone-secreting tissues.
Answer endocrine

Add Question Here

Question 66 **Fill in the Blank** **0 points** Modify Remove

Question Complete each of the following statments.

The two major control systems of the body are the _____ and the _____.
Answer nervous system, endocrine system

Add Question Here

Question 67 **Fill in the Blank** **0 points** Modify Remove

Question Complete each of the following statments.

_____ are the blood vessels where materials are exchanged between the blood and the interstitial fluid.
Answer Capillaries

Add Question Here

Question 68 **Fill in the Blank** **0 points** Modify Remove

Question Complete each of the following statments.

The spleen is part of the _____ system.
Answer immune (lymphatic)

Add Question Here

Question 69 **Fill in the Blank** **0 points** Modify Remove

Question Complete each of the following statments.

The _____ system eliminates waste products other than carbon dioxide and plays a key role in regulating the volume, electrolyte composition, and acidity of the extracellular fluid.
Answer urinary

Add Question Here

Question 70 **Fill in the Blank** **0 points** Modify Remove

Question Complete each of the following statments.

The _____ system controls and coordinates bodily activities that require swift responses, especially to changes in the external environment.
Answer nervous

Add Question Here

Question 71 **Fill in the Blank** **0 points** Modify Remove

Question Complete each of the following statments.

_____ refers to the abnormal functioning of the body associated with disease.
Answer Pathophysiology

Add Question Here

Question 72 **Fill in the Blank** **0 points** Modify Remove

Question Complete each of the following statments.

"Reaction counteracts stress" would be a shorthand way of defining _____ feedback.

Answer negative

Add Question Here

Question 73 **Fill in the Blank** **0 points** Modify Remove

Question Complete each of the following statments.

_____ cells are not specialized for a specific function but can divide to give rise to highly specialized cells.

Answer Stem

Add Question Here

Question 74 **Fill in the Blank** **0 points** Modify Remove

Question Complete each of the following statments.

_____ stem cells are partially differentiated, harvested from adults, and can become highly differentiated, specialized cell types.

Answer Tissue-specific

Add Question Here

Question 75 **Fill in the Blank** **0 points** Modify Remove

Question Complete each of the following statments.

_____ stem cells are undifferentiated cells that result from the early divisions of a fertilized egg and ultimately give rise to all specialized cells of the body.

Answer Embryonic stem

Add Question Here

Question 76 **Matching** **0 points** Modify Remove

Question Indicate whether the following physiological event represents:

Answer

Match	Question Items	Answer Items
A. -	A. Increased blood flow into muscle tissue in response to a localized increase in carbon dioxide	A. intrinsic control
B. -	B. Release of a hormone to lower blood calcium levels when they get too high	B. negative feedback control
B. -	C. Increased cardiac activity to elevate blood pressure when systemic pressure is low	C. positive feedback control
C. -	D. Rapid clotting of blood due to increasing levels of platelet activity at a site of vessel damage	D. feedforward control

Add Question Here

Question 77 **Matching** **0 points** Modify Remove

Question Use the following answer code to indicate which tissue is being identified.

Answer

Match	Question Items	Answer Items
C. -	A. Composed of cells specialized for contraction	A. nervous tissue
B. -	B. Includes cells specialized for exchanging material between plasma and interstitial fluid	B. epithelial tissue
D. -	C. Connects, supports, and anchors body parts	C. muscle tissue
C. -	D. Primary component of the heart	D. connective tissue
D. -	E. Primary component of a bone	
B. -	F. Includes cells that form glands	
B. -	G. Lines the digestive tract	
A. -	H. Primary component of the brain	
D. -	I. Includes blood as a major type	
D. -	J. Has relatively few cells within an extracellular material	
C. -	K. Has one specific type classified as "smooth"	

Add Question Here

Question 78 **Matching** **0 points** Modify Remove

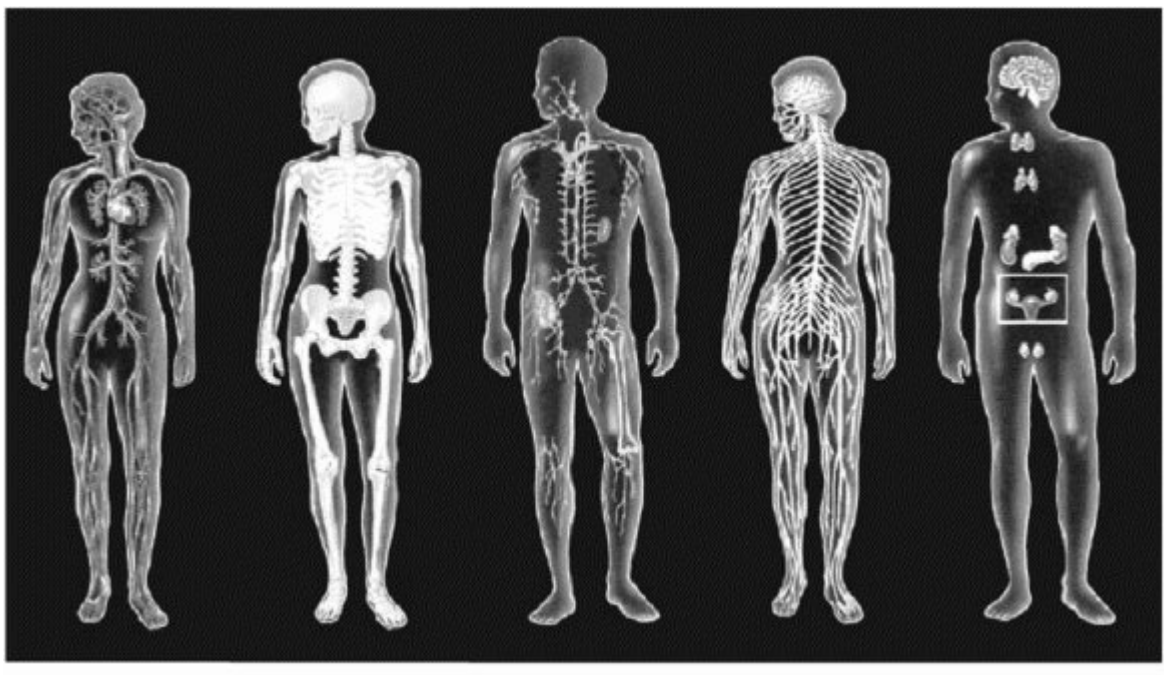
Question Temperature-sensitive nerve cells monitor the body temperature and provide information about its status to a temperature-control center in the hypothalamus, a part of the brain. The hypothalamus can bring about adjustments in body temperature by inducing shivering or sweating, among other things. Indicate the roles served by each component of this control system using the following answer code.

Answer

Match	Question Items	Answer Items
A. -	A. Body temperature	A. controlled variable
C. -	B. Temperature-sensitive nerve cells	B. integrator
D. -	C. Skeletal muscles and sweat glands	C. sensor
B. -	D. Hypothalamus	D. effector

Add Question Here

Question 79 **Essay** **0 points** Modify Remove



Question

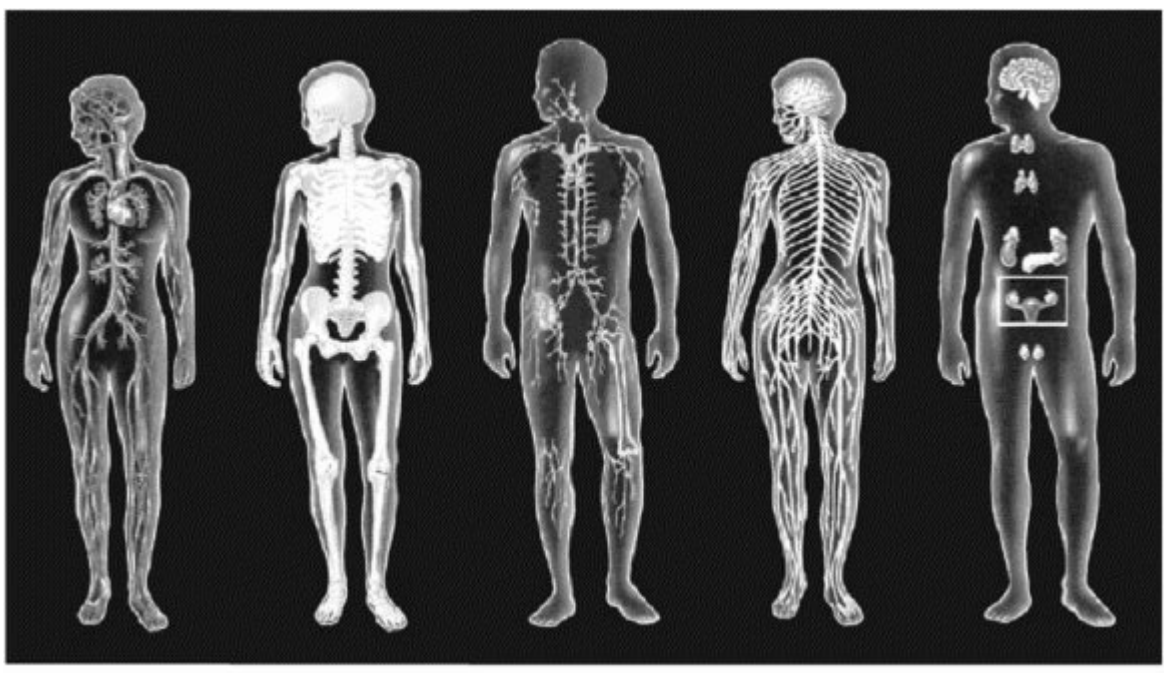
Use the figure above to answer the corresponding questions.

Which number identifies the system that serves as the source of all blood cells?
a. 1
b. 2
c. 3
d. 4
e. 5

Answer b

Add Question Here

Question 80 **Essay** **0 points** Modify Remove



Question

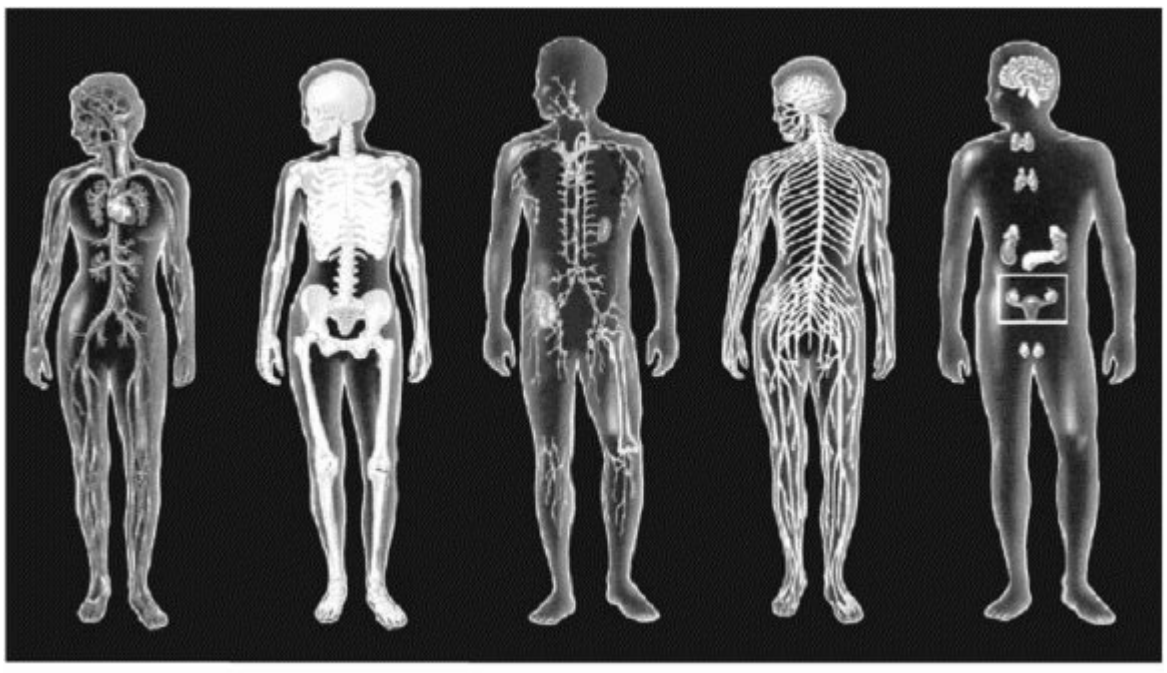
Use the figure above to answer the corresponding questions.

Which number identifies the system that serves as a regulatory system in which the duration of activity is more important than the speed of activity?
a. 1
b. 2
c. 3
d. 4
e. 5

Answer e

Add Question Here

Question 81 **Essay** **0 points** Modify Remove



Question

Use the figure above to answer the corresponding questions.

Which number identifies the system that serves as the site of nutrient and waste exchange between cells and the interstitial fluid?
a. 1
b. 2
c. 3
d. 4
e. 5

Answer a

Add Question Here

Question 82 **Essay** **0 points** Modify Remove

Question Beginning with the chemical level and ending with the system level, compare the different levels of organization in the human body with the following things found on a page in a book: sentence, letter, word, ink in a letter, paragraph, and all paragraphs on a page.

Answer *The ink would be like the chemical level and it forms the letters, which would be like cells. Two or more letters together make up a word, which is like a tissue. Two or more words make up a sentence, which is like an organ; and two or more sentences make up a paragraph, which is like a body system. All paragraphs on a page would be like all body systems together, which make up the human body.*

Add Question Here

Question 83 **Essay** **0 points** Modify Remove

Question The pancreas is part of the endocrine system and secretes the hormone insulin, which allows most body cells to absorb glucose from the blood. A lack of insulin can result in hyperglycemia (high blood glucose), which can adversely affect one's health. Describe the roles of the digestive system, circulatory system, and endocrine systems in maintaining glucose homeostasis when a person eats a sugary meal.

Answer *The digestive system breaks down the sugary meal and transports the sugars into the blood. The circulatory system transports the sugars throughout the body. If the level of glucose in the blood increases above optimum, the endocrine system releases insulin that causes body cells to absorb glucose, thus lowering the glucose to optimum levels in the blood.*

Add Question Here

Question 84 **Essay** **0 points** Modify Remove

Question Explain the long-term adaptations made by the heart in response to an exercise regimen of sufficient intensity and duration, and explain how this is beneficial to the heart and to the athlete.

Answer *The heart increases its strength and efficiency so that it pumps more blood per beat. This allows the muscles to receive more oxygen to meet the increased demand. Because of the increased pumping ability, the heart does not have to beat as rapidly to pump a given quantity of blood as it did before beginning the exercise regimen.*

Add Question Here