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Corret Answers are located at the end of each chapter.

TRUE/FALSE - Write 'T' if the statement is true and 'F' if the statement is false.

1) The study of disease processes aids in the understanding of normal functions.
   - ◎ true
   - ◎ false

2) Phase IV clinical drug trials involve testing a drug only on the specific human population who have the condition that the drug is intended to treat.
   - ◎ true
   - ◎ false

3) Negative feedback results in a response that opposes the original deviation from normal.
   - ◎ true
   - ◎ false

4) Blood clotting is an example of positive feedback since the action of the effector opposes that of the stimulus.
   - ◎ true
   - ◎ false

5) A patient takes a daily thyroid hormone replacement medication to maintain normal thyroid hormone levels.
   - ◎ true
   - ◎ false

6) Stratified epithelial tissue provides little protection, but transports substances between the internal and external environments.
   - ◎ true
   - ◎ false

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7) Sebaceous glands are responsible for the lubrication of the skin.
   ◎ true
   ◎ false

8) Enamel, which is harder than bone or dentin, cannot be regenerated.
   ◎ true
   ◎ false

9) By affecting the diameter of cutaneous blood vessels, motor nerve fibers in the skin can regulate the rate of blood flow.
   ◎ true
   ◎ false

10) Blood plasma and interstitial fluid are separated from each other; therefore, there is little communication and exchange between these fluids.
   ◎ true
   ◎ false

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

11) Physiology_____.
   A) emphasizes cause-and-effect mechanisms
   B) includes the fields of chemistry and psychology
   C) ignores the scientific method
   D) ultimately strives to understand the structures of individual cells

12) The study of how disease or injury alters physiological processes is termed_____.
   A) comparative physiology
   B) the scientific method
   C) pathophysiology
   D) anatomy

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13) The first step in the scientific method involves the formation of a(n)_____.
A) theory
B) law
C) experiment
D) hypothesis

14) Phase_____ clinical trials maximize the number of test participants and include human participants of both sexes, different ethnic groups, and those who have health problems besides the one that the drug is designed to treat.
A) I
B) II
C) III
D) IV

15) Phase I clinical trials do NOT involve testing_____.
A) on the target human population
B) how the drug is metabolized
C) how rapidly the drug is removed from the body
D) the most effective administration of the drug

16) When a scientist performs measurements in an experiment and does not know if the subject is part of the experimental or the control group, it is known as a_____ measurement.
A) blind
B) qualitative
C) null
D) statistical

17) A hypothesis is scientific if it_____.
A) supports other hypotheses
B) can be tested
C) refutes other hypotheses
D) uses observational analyses

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18) For a theory to be scientific and accepted, it must be based on_____.

A) reproducible data
B) the support of the scientific community
C) a proven hypothesis from a well designed research study
D) the word of a professional scientist

19) The normal range of blood glucose concentration after fasting is approximately_____.

A) 50 to 80 mg/100 ml
B) 50 to 110 mg/100 ml
C) 70 to 99 mg/100 ml
D) 75 to 150 mg/100 ml

20) The normal range of arterial blood pH is_____.

A) 6.50–7.50
B) 7.35–7.45
C) 6.95–7.05
D) 7.15–7.25

21) In a feedback loop, the integrating center sends information to the_____.

A) sensor
B) effector
C) brain region
D) thermostat

22) Both _____ and _____ are the regulators of effectors in most feedback loops.

A) enzymes; nerve impulses
B) hormones; paracrines
C) neurotransmitters; enzymes
D) hormones; nerve impulses
E) enzymes; hormones

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23) Homeostatic regulatory mechanisms known as_____ are "built-in" to the organs being regulated.
A) intrinsic
B) extrinsic
C) exothermic
D) passive

24) The endocrine and nervous systems are considered_____ homeostatic regulatory mechanisms.
A) intrinsic
B) active
C) extrinsic
D) passive

25) When blood glucose levels rise, the pancreatic islets are stimulated to release insulin, which acts on target cells to uptake glucose from the blood. Thus, the islets serve as the_____ in the feedback loop.
A) effectors
B) integrating center
C) sensors
D) All of the choices are correct.

26) A decrease in mean arterial pressure is detected by a(n)_____.
A) effector
B) integrating center
C) sensor
D) chemical messenger

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27) When a vessel is damaged, chemicals are released from the vessel walls that attract platelets to the site of the damage. As they accumulate, more chemicals that attract more platelets to the area until the bleeding stops. This represents_____ feedback, with the platelets acting as the_____.

A) negative; sensors
B) positive; integrating center
C) negative; integrating center
D) positive; effectors

28) Dynamic constancy is a term used to describe homeostasis. Select the scenario that is NOT example of dynamic constancy?

A) Sweating or shivering as you move from inside air-conditioned stores to outside on a hot, humid day.
B) Administering IV fluids to a person who presents to the emergency room with dehydration.
C) The pancreas releasing insulin when blood glucose levels are significantly elevated.
D) Adjusting the depth and rate of breathing as blood pH levels change.

29) Estrogen levels cause both increased and decreased hormone secretions from the anterior pituitary and hypothalamus at various points in the menstrual cycle. This indicates that estrogen is_____.

A) secreted in consistent amounts from the ovaries throughout the menstrual cycle
B) NOT involved in any feedback loops
C) involved in both positive and negative feedback with the anterior pituitary and hypothalamus
D) the hormones the ovaries use to serve as the integrating center in a feedback loop with the anterior pituitary and hypothalamus

30) The control of hormone secretion by its own effects is called_____.

A) positive feedback
B) negative feedback
C) negative feedback inhibition
D) antagonist effector

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31) The primary stimulus for insulin secretion is increased_____.

A) blood glucose concentration
B) blood calcium concentration
C) body temperature
D) exposure to sunlight

32) If the blood glucose level decreases from normal, which effects will bring glucose levels back to normal?

A) Increase in insulin; increase in glucagon
B) Increase in insulin; decrease in glucagon
C) Decrease in insulin; increase in glucagon
D) Decrease in insulin; decrease in glucagon

33) Select the basic tissue type that is NOT a primary tissue of the body.

A) Nervous
B) Epithelial
C) Muscular
D) Osseous

34) Contraction of_____ muscle can be consciously controlled.

A) cardiac
B) smooth
C) skeletal
D) striated

35) Intercalated discs couple_____ cells both mechanically and electrically.

A) smooth muscle
B) myocardial
C) skeletal muscle
D) both myocardial and skeletal muscle

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36) You examine a sample of muscle tissue under the microscope, and it has a striped, or striated appearance. This sample could not have been taken from the_____.

A) muscle of the thigh
B) wall of digestive tract
C) wall of heart chamber
D) muscle of the forearm

37) Smooth muscle contains_____.

A) fibers that are striated in appearance
B) tendons
C) intercalated discs that connect adjacent cells
D) several layers in the walls of the digestive tract

38) Neuroglia are supporting cells present in the_____.

A) brain
B) spinal cord
C) effector organs
D) Both brain and spinal cord are correct.

39) Damage to the_____ of a neuron would interfere with its ability to receive sensory input from its surrounding environment.

A) dendrites
B) axons
C) cell body
D) telodendria

40) The primary function of neurons is to_____.

A) bind nervous tissue together
B) help nourish nervous tissue
C) conduct electrical impulses
D) modify the extracellular environment

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41) The peritoneal membrane of the abdominal cavity secretes fluid to reduce friction between adjacent organs in the body. The tissue best suited to this description and function is_____.

A) stratified squamous
B) elastic connective tissue
C) simple columnar
D) simple squamous

42) Cells that are as wide as they are tall have a_____ shape.

A) squamous
B) cuboidal
C) columnar
D) rectangular

43) The_____ is a protein and polysaccharide layer that attaches epithelial tissue to the underlying connective tissue.

A) goblet cell
B) epidermis
C) basement membrane
D) plasma membrane

44) Which types of connections allow epithelial cells to form strong membranes?

A) Basement membranes
B) Intercalated discs
C) Junctional complexes
D) Keratinized

45) Keratinized epithelium_____.

A) has living cells in all layers
B) is a moist membrane
C) allows water to diffuse through
D) is a dry, mostly dead membrane

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46) Epithelial tissues that are more than one layer thick are called_____.
A) simple
B) stratified
C) squamous
D) ciliated

47) Histological examination of a tissue shows several layers of keratinized flattened cells. This sample most likely came from the_____.
A) epidermis of the skin
B) lining of the oral cavity
C) lining of the urinary bladder
D) lining of the digestive tract

48) Which type of epithelial tissue would be found lining the uterine tubes?
A) Simple ciliated columnar epithelium
B) Stratified cuboidal epithelium
C) Nonkeratinized stratified squamous epithelium
D) Simple cuboidal epithelium

49) Specialized unicellular glands found in columnar and pseudostratified columnar epithelium that secrete mucus are called_____.
A) cilia
B) keratin
C) transitional cells
D) goblet cells

50) A single layer of irregularly shaped epithelial cells found lining the respiratory tract is called_____.
A) simple columnar epithelium
B) stratified cuboidal epithelium
C) pseudostratified ciliated columnar epithelium
D) transitional epithelium

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51) The epithelial tissue that lines the urinary bladder and allows distention is called_____.

A) transitional epithelium
B) stratified cuboidal epithelium
C) simple columnar epithelium
D) nonkeratinized stratified squamous epithelium

52) The entire epidermis is replaced every_____.

A) 2–3 days
B) 2 weeks
C) 2–3 hours
D) 2 months

53) One unique function of simple squamous epithelium is to allow_____.

A) protection
B) diffusion
C) distention
D) transport through ciliary action

54) Select the best example of endocrine secretion.

A) Mucous gland that secretes onto respiratory passages.
B) Sweat gland that secretes onto the skin.
C) Salivary gland that secretes into the mouth.
D) Testes cells that secrete testosterone into the blood.

55) Which glands are primarily responsible for thermoregulation?

A) Apocrine sweat glands
B) Endocrine glands
C) Eccrine sweat glands
D) Sebaceous glands

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56) Which tissue attaches skeletal muscles to bones?

A) Ligaments
B) Cartilages
C) Tendons
D) Adipocytes

57) The main distinguishing characteristic of connective tissue is a(n)_____.

A) large amount of closely packed cells
B) large amount of extracellular material
C) ability to conduct an electrical current
D) small amount of extracellular material

58) Tendons are composed of_____.

A) adipose tissue
B) dense regular fibrous connective tissue
C) dense irregular fibrous connective tissue
D) loose connective tissue

59) What protein is present in large amounts in connective tissue proper?

A) Collagen
B) Keratin
C) Enamel
D) Mucin

60) Which type of connective tissue is characterized by a liquid extracellular matrix?

A) Bone
B) Blood
C) Adipose
D) Irregular dense connective tissue

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61) The cells that secrete fibers and matrix that create bone tissue are known as_____.
A) osteocytes
B) osteoblasts
C) osteons
D) chondrocytes

62) Cartilage cells are known as_____.
A) osteocytes
B) osteoblasts
C) chondroblasts
D) chondrocytes

63) Units of bone composed of concentric rings of lamellae with trapped osteocytes are called_____.
A) canaliculi
B) osteons
C) haversian systems
D) Both osteons and haversian systems are correct.

64) Select the function of the skin that the epidermis does NOT provide.
A) Acts as barrier against microorganisms
B) Prevents water loss
C) Protects against abrasion
D) Provides strength and elasticity

65) Skin protects a person from the ultraviolet rays of the sun by producing_____.
A) sweat
B) vitamin D
C) sebum
D) melanin

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66) What produces "goose bumps"?
A) Secretion of sweat
B) Contraction of the arrector pili muscle
C) Flow of sebum onto the skin
D) Dilation of cutaneous blood vessels

67) The_____ layer of the skin contains sweat glands, hair follicles, and sebaceous glands.
A) epidermal
B) dermal
C) hypodermal
D) subdermal

68) The hypodermis is primarily composed of_____.
A) adipose tissue
B) nervous tissue
C) blood vessels
D) hair cells

69) The zygote (fertilized egg) has the ability to produce all the various types of cells found in the body. Therefore, it is a(n)_____ cell.
A) pluripotent
B) multipotent
C) totipotent
D) omnipotent

70) Adult stem cells may be found in_____.
A) hair follicles
B) the brain
C) red bone marrow
D) skeletal muscle
E) All of the choices are correct.

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71) The intracellular fluid compartment_____.

A) is made up of blood plasma and interstitial fluid
B) is regulated by the kidneys
C) makes up 65% of the total body water
D) communicates with the cerebrospinal fluid

72) The main cell type of connective tissue proper is the_____.

A) fibroblast
B) monocyte
C) keratinocyte
D) chondrocyte

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Answer Key

Test name: CH-01

1) TRUE
2) FALSE
3) TRUE
4) FALSE
5) FALSE
6) FALSE
7) TRUE
8) TRUE
9) TRUE
10) FALSE
11) A
12) C
13) D
14) C
15) A
16) A
17) B
18) A
19) C
20) B
21) B
22) D
23) A
24) C
25) D
26) C
27) B
28) B
29) C
30) C
31) A
32) C
33) D
34) C
35) B
36) B
37) D

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38) D
39) A
40) C
41) D
42) B
43) C
44) C
45) D
46) B
47) A
48) A
49) D
50) C
51) A
52) B
53) B
54) D
55) C
56) C
57) B
58) B
59) A
60) B
61) B
62) D
63) D
64) D
65) D
66) B
67) B
68) A
69) C
70) E
71) C
72) A

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