

TEST BANK

RUBIN'S PATHOLOGY

Clinicopathologic Foundations

Of Medicine

7TH EDITION

Chapter 1: Cell Adaptation, Injury and Death

1. Ischemia and other toxic injuries increase the accumulation of intracellular calcium as a result of:
 - A) release of stored calcium from the mitochondria.
 - B) improved intracellular volume regulation.
 - C) decreased influx across the cell membrane.
 - D) attraction of calcium to fatty infiltrates.

2. The patient is found to have liver disease, resulting in the removal of a lobe of his liver. Adaptation to the reduced size of the liver leads to _ of the remaining liver cells.
 - A) metaplasia
 - B) organ atrophy
 - C) compensatory hyperplasia
 - D) physiologic hypertrophy

3. A person eating peanuts starts choking and collapses. His airway obstruction is partially cleared, but he remains hypoxic until he reaches the hospital. The prolonged cell hypoxia caused a cerebral infarction and resulting _ in the brain.
 - A) caspase activation
 - B) coagulation necrosis
 - C) rapid phagocytosis
 - D) protein p53 deficiency

4. Bacteria and viruses cause cell damage by _____, which is unique from the intracellular damage caused by other injurious agents.

- A) disrupting the sodium/potassium ATPase pump
- B) interrupting oxidative metabolism processes
- C) replicating and producing continued injury
- D) decreasing protein synthesis and function

5. The patient has a prolonged interruption in arterial blood flow to his left kidney, causing hypoxic cell injury and the release of free radicals. Free radicals damage cells by:

- A) destroying phospholipids in the cell membrane.
- B) altering the immune response of the cell.
- C) disrupting calcium storage in the cell.
- D) inactivation of enzymes and mitochondria.

6. Injured cells have impaired flow of substances through the cell membrane as a result of:

- A) increased fat load.
- B) altered permeability.
- C) altered glucose utilization.
- D) increased surface receptors.

7. Reversible adaptive intracellular responses are initiated by:

- A) stimulus overload.
- B) genetic mutations.
- C) chemical messengers.
- D) mitochondrial DNA.

8. Injured cells become very swollen as a result of:

- A) increased cell protein synthesis.
- B) altered cell volume regulation.
- C) passive entry of potassium into the cell.
- D) bleb formation in the plasma membrane.

9. A diabetic patient has impaired sensation, circulation, and oxygenation of his feet. He steps on a piece of glass, the wound does not heal, and the area tissue becomes necrotic. The necrotic cell death is characterized by:

- A) rapid apoptosis.
- B) cellular rupture.
- C) shrinkage and collapse.
- D) chronic inflammation.

10. A 99-year-old woman has experienced the decline of cell function associated with age. A group of theories of cellular aging focus on programmed:

- A) changes with genetic influences.
- B) elimination of cell receptor sites.
- C) insufficient telomerase enzyme.
- D) DNA mutation or faulty repair.

11. An 89-year-old female patient has experienced significant decreases in her mobility and stamina during a 3-week hospital stay for the treatment of a femoral head fracture. Which of the following phenomena most likely accounts for the patients decrease in muscle function

that underlies her reduced mobility?

- A) Impaired muscle cell metabolism resulting from metaplasia
- B) Dysplasia as a consequence of inflammation during bone remodeling
- C) Disuse atrophy of muscle cells during a prolonged period of immobility
- D) Ischemic atrophy resulting from vascular changes while on bedrest

12. A 20-year-old college student has presented to her campus medical clinic for a scheduled Papanicolaou (Pap) smear. The clinician who will interpret the smear will examine cell samples for evidence of:

- A) changes in cell shape, size, and organization.
- B) the presence of unexpected cell types.
- C) ischemic changes in cell samples.
- D) abnormally high numbers of cells in a specified field.

13. Which of the following pathophysiologic processes is most likely to result in metastatic calcification?

- A) Benign prostatic hyperplasia
- B) Liver cirrhosis
- C) Impaired glycogen metabolism
- D) Hyperparathyroidism

14. Despite the low levels of radiation used in contemporary radiologic imaging, a radiology technician is aware of the need to minimize her exposure to ionizing radiation. What is the primary rationale for the technicians precautions?

- A) Radiation stimulates pathologic cell hypertrophy and hyperplasia.

- B) Radiation results in the accumulation of endogenous waste products in the cytoplasm.
- C) Radiation interferes with DNA synthesis and mitosis.
- D) Radiation decreases the action potential of rapidly dividing cells.

15. The parents of a 4-year-old girl have sought care because their daughter has admitted to chewing and swallowing imported toy figurines that have been determined to be made of lead. Which of the following blood tests should the care team prioritize?

- A) White blood cell levels with differential
- B) Red blood cell levels and morphology
- C) Urea and creatinine levels
- D) Liver function panel

16. A 70-year-old male patient has been admitted to a hospital for the treatment of a recent hemorrhagic stroke that has left him with numerous motor and sensory deficits. These deficits are most likely the result of which of the following mechanisms of cell injury?

- A) Free radical injury
- B) Hypoxia and ATP depletion
- C) Interference with DNA synthesis
- D) Impaired calcium homeostasis

17. Which of the following processes associated with cellular injury is most likely to be reversible?

- A) Cell damage resulting from accumulation of fat in the cytoplasm
- B) Cellular changes as a result of ionizing radiation
- C) Cell damage from accumulation of free radicals

D) Apoptosis

18. The extrinsic pathway of apoptosis can be initiated by:

A) damage to cellular DNA.

B) decreased ATP levels.

C) activation of the p53 protein.

D) activation of death receptors on the cell surface.

19. A patient with severe peripheral vascular disease has developed signs of dry gangrene on the great toe of one foot. Which of the following pathophysiologic processes most likely contributed to this diagnosis?

A) Inappropriate activation of apoptosis

B) Bacterial invasion

C) Impaired arterial blood supply

D) Metaplastic cellular changes

20. Which of the following facts underlies the concept of replicative senescence?

A) Genes controlling longevity are present or absent in varying quantities among different individuals.

B) Telomeres become progressively shorter in successive generations of a cell.

C) The damaging influence of free radicals increases exponentially in later generations of a cell.

D)

Answer Aging produces mutations in DNA and deficits in DNA repair.

Key

1. A

2. C

3. B

4. C

5. A

6. B

7. C

8. B

9. B

10. A

11. C

12. A

13. D

14. C

15. B

16. B

17. A

18. D

19. C

20. B

Chapter 2: Inflammation

MULTIPLE CHOICE

1. Tears are considered to be part of the:

1. first line of defense.

- 2. second line of defense.
- 3. third line of defense.
- 4. specific defenses.
- 5. nonspecific defenses.
- a. 1, 4
- b. 1, 5
- c. 3, 4
- d. 2, 5

ANS: B

- 2. A specific defense for the body is:
 - a. phagocytosis.
 - b. sensitized T lymphocytes.
 - c. the inflammatory response.
 - d. intact skin and mucous membranes.

ANS: B

- 3. The inflammatory response is a nonspecific response to:
 - a. phagocytosis of foreign material.
 - b. local vasodilation.
 - c. any tissue injury.
 - d. formation of purulent exudates.

ANS: C

- 4. Chemical mediators released during the inflammatory response include:
 - a. albumin and fibrinogen.
 - b. growth factors and cell enzymes.
 - c. macrophages and neutrophils.

d. histamine and prostaglandins.

ANS: D

5. Which of the following result directly from the release of chemical mediators following a moderate burn injury?

1. Pain

2. Local vasoconstriction

3. Increased capillary permeability

4. Pallor

a. 1, 2

b. 1, 3

c. 2, 3

d.

ANS: B 6. Granulation tissue 2, 4

is best described as:

a. highly vascular, very fragile, and very susceptible to infection.

b. an erosion through the wall of viscera, leading to complications.

c. a type of adhesion with no vascularization.

d. a form of stenosis, in a duct, that is extremely tough and resists attack by microbes.

ANS: A

7. Edema associated with inflammation results directly from:

a. increased fluid and protein in the interstitial compartment.

b. increased phagocytes in the affected area.

c. decreased capillary permeability.

d. general vasoconstriction.

ANS: A

8. The warmth and redness related to the inflammatory response results from:
- increased interstitial fluid.
 - production of complement.
 - a large number of white blood cells (WBCs) entering the area.
 - increased blood flow into the area.

ANS: D

9. What is the correct order of the following events in the inflammatory response immediately after tissue injury?

- Increased permeability of blood vessels
 - Dilation of blood vessels
 - Transient vasoconstriction
 - Migration of leukocytes to the area
 - Hyperemia
- 5, 3, 2, 1, 4
 - 1, 2, 4, 5, 3
 - 2, 3, 5, 4, 1
 - 3, 2, 5, 1, 4

ANS: D

10. The process of phagocytosis involves the:
- ingestion of foreign material and cell debris by leukocytes.
 - shift of fluid and protein out of capillaries.
 - formation of a fibrin mesh around the infected area.
 - movement of erythrocytes through the capillary wall.

ANS: A

11. Systemic effects of severe inflammation include:

- a. erythema and warmth.
- b. loss of movement at the affected joint.
- c. fatigue, anorexia, and mild fever.
- d. abscess formation.

ANS: C

12. The term leukocytosis means:

- a. increased white blood cells (WBCs) in the blood.
- b. decreased WBCs in the blood.
- c. increased number of immature circulating leukocytes.
- d. significant change in the proportions of WBCs.

ANS: A

13. Which of the following statements applies to fever?

- a. Viral infection is usually present.
- b. Heat-loss mechanisms have been stimulated.
- c. It is caused by a signal to the thalamus.
- d. It results from release of pyrogens into the circulation.

ANS: D

14. Mechanisms to bring an elevated body temperature down to the normal level include:

- a. general cutaneous vasodilation.
- b. generalized shivering.
- c. increased heart rate.
- d. increased metabolic rate.

ANS: A

15. Replacement of damaged tissue by similar functional cells is termed:

- a. fibrosis.
- b. regeneration.
- c. resolution.
- d. repair by scar tissue.

ANS: B

16. Scar tissue consists primarily of:

- a. granulation tissue.
- b. epithelial cells.
- c. collagen fibers.
- d. new capillaries and smooth muscle fibers.

ANS: C

17. Which of the following promotes rapid healing?

- a. Closely approximated edges of a wound
- b. Presence of foreign material
- c. Exposure to radiation
- d. Vasoconstriction in the involved area

ANS: A

18. Glucocorticoids are used to treat inflammation because they directly:

- a. promote the release of prostaglandins at the site.
- b. decrease capillary permeability.
- c. mobilize lymphocytes and neutrophils.
- d. prevent infection.

ANS: B

19. Patients taking glucocorticoids for long periods of time are likely to develop all of the following EXCEPT:

- a. decreased bone density.
- b. wasting of skeletal muscle.
- c. opportunistic infections.
- d. increased leukocyte production.

ANS: D

20. Which of the following drugs relieves fever and some types of pain but is NOT an anti-inflammatory agent?

- a. Acetaminophen
- b. Prednisone
- c. Aspirin
- d. Ibuprofen

ANS: A

21. A burn area in which the epidermis and part of the dermis is destroyed is classified as:

- a. full-thickness.
- b. deep partial-thickness.
- c. superficial partial-thickness.
- d. first-degree.

ANS: B

22. A woman has burns on the anterior surfaces of her right arm, chest, and right leg. The percentage of body surface area burned is approximately:

- a. 13.5%.
- b. 18%.
- c. 22.5%.
- d. 31.5%.

ANS: C

23. The characteristic appearance of a full-thickness burn is:

- a. painful with multiple blisters.
- b. heavy bleeding.
- c. red with some swelling.
- d. dry, firm, charred, or hard white surface.

ANS: D

24. A typical source of infection in burn areas is:

- a. the skin grafts.
- b. microbes surviving in the hair follicles in the burn area.
- c. circulating blood bringing microbes to the burn wound.
- d. opportunistic virus in digestive tract.

ANS: B

25. A large burn area predisposes to decreased blood pressure because:

- a. bleeding occurs under the burn surface.
- b. the heart is damaged by toxic materials from the burn.
- c. fluid and protein shift out of the blood.
- d. vasoconstriction occurs in the burn area.

ANS: C

26. During an inflammatory response, hyperemia is caused by:

- a. increased blood flow in the area.
- b. increased capillary permeability.
- c. irritation of sensory nerve endings by histamine.
- d. increased leukocytes in the area.

ANS: A

27. The advantages of applying a biosynthetic skin substitute to a large area of full- thickness burns include:

1. reduced risk of infection.
 2. decreased loss of plasma protein and fluid.
 3. developing stronger fibrous scar tissue.
 4. more rapid healing.
 5. regeneration of all glands, nerves, and hair follicles.
- a. 1, 3
 - b. 4, 5
 - c. 1, 2, 4
 - d. 2, 3, 5

ANS: C

28. Purulent exudates usually contain:
- a. small amounts of plasma protein & histamine in water.
 - b. red blood cells & all types of white blood cells.
 - c. numerous leukocytes, bacteria, and cell debris.
 - d. large amounts of water containing a few cells.

ANS: C

29. Isoenzymes in the circulating blood:
- a. are a type of plasma protein normally present in the circulating blood.
 - b. often indicate the precise location of an inflammatory response.
 - c. are normally released from leukocytes during the inflammatory response.
 - d. are pyrogens, causing low-grade fever.

ANS: B

30. A serous exudate is best described as a:
- a. thin, watery, colorless exudate.

- b. thick, sticky, cloudy secretion.
- c. thick, greenish material containing microbes.
- d. brownish, clotted material.

ANS: A

31. Systemic manifestations of an inflammatory response include:

- a. edema and erythema.
- b. area of necrosis and loss of function.
- c. pain and tenderness.
- d. fever and malaise.

ANS: D

32. Some local effects of a general inflammatory response would include:

- a. high, spiking fever and chills.
- b. redness, warmth, and swelling.
- c. leukopenia and reduced erythrocyte sedimentation rate (ESR).
- d. anorexia and headaches.

ANS: B

33. Prolonged administration of glucocorticoids such as prednisone may cause:

- 1. atrophy of lymphoid tissue.
 - 2. increased resistance to infection.
 - 3. thrombocytopenia.
 - 4. decreased protein synthesis.
- a. 1, 2
 - b. 1, 3
 - c. 1, 4

d. 2, 4

ANS: C

34. Application of ice to an injured knee reduces edema by:

- a. promoting return of lymph fluid.
- b. causing local vasoconstriction.
- c. increasing the rate of tissue repair.
- d. causing systemic vasodilation.

ANS: B

35. Healing of large areas of skin loss (including dermis and epidermis) would be most successful through:

- a. rapid mitosis and regeneration of skin layers.
- b. resolution of damaged cells in the area.
- c. covering the area with biosynthetic skin substitute.
- d. graft of fibrous tissue to the area.

ANS: C

36. Prostaglandins are produced from _____ and cause _____.

- a. activated plasma protein; increased capillary permeability
- b. mast cells; vasodilation and pain
- c. platelets; attraction of neutrophils, chemotaxis
- d. mast cell granules; activation of histamines and kinins

ANS: B

37. The number of neutrophils in the blood is increased significantly:

- a. during allergic reactions.
- b. during chronic inflammation.
- c. to produce antibodies.

- d. in order to promote phagocytosis.

ANS: D

38. An abscess contains:

- a. serous exudate.
- b. purulent exudate.
- c. fibrinous exudate.
- d. hemorrhagic exudate.

ANS: B

39. Nonspecific agents that protect uninfected cells against viruses are called:

- a. neutrophils.
- b. macrophages.
- c. interferons.
- d. pyrogens.

ANS: C

40. Causes of inflammation include:

- a. direct physical damage such as cuts and sprains.
- b. allergic reactions.
- c. infection.
- d. All the above

ANS: D

41. In normal capillary exchange, what is net hydrostatic pressure based on?

- a. The difference between the hydrostatic pressure within the capillary, as compared with the hydrostatic pressure of the interstitial fluid
- b. The relative osmotic pressures in the blood and the interstitial fluid

- c. The difference between the hydrostatic pressure and osmotic pressure within the capillary
- d. The difference between the concentrations of blood cells, plasma proteins, and dissolved substances the blood and the interstitial fluid

ANS: A

42. The cardinal signs of inflammation include all of the following EXCEPT:
- a. redness.
 - b. loss of function.
 - c. nausea.
 - d. swelling.

ANS: C

43. Drugs that have anti-inflammatory, analgesic, and antipyretic activities include:
- 1. COX-2 inhibitors (NSAIDs).
 - 2. glucocorticoids (e.g., prednisone).
 - 3. ibuprofen (NSAID).
 - 4. acetaminophen.
 - 5. aspirin (ASA).
- a. 1, 2
 - b. 2, 4
 - c. 1, 3, 5
 - d. 1, 4, 5

ANS: C 44. Aspirin (ASA) is discouraged for treatment of viral infection in children because of:

- a. decreased bone growth after puberty.
- b. frequent production of blood clots.
- c. formation of a granuloma filled with virus.

- d. the risk of developing Reyes syndrome.

ANS: D

45. Systemic manifestations of inflammation include all EXCEPT:

- a. pyrexia.
- b. malaise.
- c. local swelling.
- d. anorexia.

ANS: C

46. Which of the following cellular elements found in the inflammatory response are responsible for phagocytosis?

- a. Macrophages
- b. Basophils
- c. B lymphocytes
- d. T lymphocytes
- e. Eosinophils

ANS: A

47. Which chemical mediator is involved in prolonging the inflammatory response?

- a. Bradykinin
- b. Histamine
- c. Leukotrienes
- d. Chemotactic factors

ANS: C

48. Potential complications after healing by scar formation include all the following EXCEPT:

- a. lack of sensory function in the area.
- b. contractures and adhesions.
- c. increased hair growth.

- d. keloid formation.

ANS: C

49. All of the following are correct statements regarding wound healing EXCEPT:

- a. Resolution occurs where there is minimal tissue damage and the cells can recover.
- b. Granulation tissue forms a permanent replacement for damaged tissue.
- c. Regeneration occurs where the cells are capable of mitosis.
- d. Scar tissue forms where the surrounding cells are incapable of mitosis.

ANS: B

50. Which of the following statements regarding inflammation is incorrect?

- a. Inflammation caused by an allergen or a burn will typically produce a serous exudate.
- b. Infection is one cause of inflammation.
- c. Inflammation is the body's nonspecific response to tissue injury.
- d. Disorders are named using the ending -sarcoma to indicate inflammation.

ANS: D

51. Which of the following helps to localize and wall off the foreign material during an inflammatory response?

- a. Lymphocytes
- b. Increased fluid
- c. Fibrinogen
- d. Antibodies

ANS: C

52. Why is an application of cold recommended as part of the RICE first aid measures immediately following an inflammatory response due to injury?

- a. It improves circulation in the area removing chemical mediators.
- b. It causes local vasoconstriction to reduce local edema.

- c. It draws more phagocytic cells to the area to remove debris.
- d. It promotes immediate healing.

ANS: B

53. One goal for current research in tissue engineering is to:
- a. create a functional replacement tissue when regeneration is not possible.
 - b. adapt cells from the injured organ to produce replacement tissue.
 - c. design a nonliving synthetic replacement tissue.
 - d. use stem cells as a temporary covering for damaged tissue.

ANS: A

54. Identify the proper sequence in the healing process.
- a. A blood clot forms; granulation tissue grows into the gap; new blood vessels develop; phagocytosis foreign material and cell debris occurs; and collagen fibers form a tight, strong scar.
 - b. A blood clot forms; phagocytes remove foreign material and cell debris; granulation tissue grows in gap; new blood vessels form; and collagen fibers promote formation of a tight, strong scar.
 - c. Collagen fibers form in the damaged area; a blood clot forms; granulation tissue grows into the gap angiogenesis takes place; and foreign material and cell debris are removed by phagocytes.
 - d. Foreign material and cell debris are removed by phagocytes; a blood clot forms; granulation tissue into the gap; new blood vessels form; and collagen fibers grow and cross-link.

ANS: B

55. All of the following are factors that promote healing EXCEPT:
- a. good nutrition: protein, vitamins A and C.
 - b. a clean, undisturbed wound.
 - c. effective circulation.

- d. advanced age.

ANS: D

56. Identify the correct statement about burns:

- a. The severity of the burn depends on the temperature, duration, and extent of the burn.
- b. Young children are less likely to suffer severe burns from immersion in excessively hot water.
- c. Burns to the palms of the hands are more damaging than burns on the face.
- d. With a major burn, excessive bleeding usually causes shock.

ANS: A

57. Which statement applies to the recommended emergency care for burns?

- a. Drop and lie completely still on your back.
- b. Call a neighbor for help if the burn appears to be extensive.
- c. Apply lotion and cover burn tightly with a sheet or towel.
- d. Cover the burn area with clean, cool, or tepid water and remove nonsticking clothing.

ANS: D

58. Inhalation of carbon monoxide is a threat for many burn patients because this gas:

- a. causes swelling in the trachea.
- b. quickly reduces the available oxygen in the blood.
- c. prevents full expansion of the lungs.
- d. is toxic to the nervous system.

ANS: B

59. How does scar tissue usually cause obstructions to develop in tube-like structures?

- a. Scar tissue continues to grow and spread, causing a blockage.
- b. Scar tissue does not stretch, but rather shrinks in time, causing narrowing.
- c. Scar tissue twists and forms knots as it develops.

- d. Scar tissue attaches to nearby normal tissue, causing obstruction.

ANS: B

60. Which of the following is a serious potential complication found only with the anti-inflammatory COX-2 inhibitor drugs?

- a. Increased risk of infection at the site of inflammation
- b. Reyes syndrome developing in children and young adults
- c. Increased incidence of heart attacks
- d. Greatly delayed blood clotting

ANS: C

Chapter 3: Repair, Regeneration and Fibrosis

MULTIPLE CHOICE

1. A public health nurse is teaching the community about health promotion. Which information should the nurse include for innate immunity? Innate immunity is gained:

- a. Following an illness
- b. At birth
- c. Via injection of specific antibodies
- d. In adulthood

ANS: B

Innate immunity is present at birth.

Innate immunity is present at birth and does not require an illness. Innate immunity is present at birth and does not require injection. Innate immunity is present at birth.

REF:

2. Which statement indicates teaching was successful regarding collectins? Collectins are produced by the:

- a. Kidneys
- b. Bowel
- c. Lungs
- d. Integument

ANS: C

Collectins are produced by the lungs.

Collectins are produced by the lungs, not the kidneys. Collectins are produced by the lungs, not the bowel. Collectins are produced by the lungs, not the integument. REF:

3. A 20-year-old male received a knife wound to the arm during an altercation. Which of the following types of immunity was compromised?

- a. Innate immunity
- b. Inflammatory response
- c. Adaptive immunity
- d. Specific immunity

ANS: A

The epithelial cells of the skin are a part of innate immunity. The inflammatory response is not a type of immunity.

Adaptive immunity is represented by the normal flora of the bowel.

Specific immunity is a type of adaptive immunity and is not associated with a break in skin integrity.

REF:

4. Biochemical secretions that trap and kill microorganisms include:

- a. Hormones
- b. Neurotransmitters
- c. Earwax
- d. Gastric acid

ANS: C

Epithelial cells secrete several substances that protect against infection, including earwax. Hormones do not contain biochemical secretions that trap and kill microorganisms.

Neurotransmitters carry important messages, but they do not contain biochemical secretions.

Gastric acid helps break down food into its component parts, but does not contain biochemical secretions.

5. A 25-year-old female presents to her primary care provider reporting vaginal discharge of a white, viscous, and foul-smelling substance. She reports that she has been taking antibiotics for the past 6 months. Which finding will the nurse most likely see on the microorganism report?

- a. Clostridium difficile overgrowth
- b. Decreased Lactobacillus
- c. Streptococcus overgrowth
- d. Decreased Candida albicans

ANS: B

Diminished colonization with Lactobacillus that occurs as a result of prolonged antibiotic treatment increases the risk for vaginal infections, such as vaginosis.

Clostridium difficile occurs in the colon, not the vagina.

Streptococcus overgrowth will occur in the mouth.

Candida albicans occurs in the colon, not the vagina.

6. When an aide asks the nurse what is a purpose of the inflammatory process, how should the nurse respond?

- a. To provide specific responses toward antigens
- b. To lyse cell membranes of microorganisms
- c. To prevent infection of the injured tissue
- d. To create immunity against subsequent tissue injury

ANS: C

One purpose of the inflammatory process is to prevent infection and further damage by contaminating microorganisms.

Specific response toward antigens is a part of the complement system that assists in the inflammatory response, but not its purpose.

Lysis of cell membranes is part of the process of phagocytosis, which removes foreign material, but this is not the purpose of the inflammatory response.

Immunity cannot be achieved against future tissue injury.

7. A child fell off the swing and scraped the right knee. The injured area becomes painful.

What else will the nurse observe upon assessment?

- a. Vasoconstriction at injured site
- b. Decreased RBC concentration at injured site
- c. Pale skin at injured site
- d. Edema at injured site

ANS: D

Increased vascular permeability and leakage of fluid out of the vessel cause edema at the site of injury.

Vasodilation occurs, not vasoconstriction. Increased RBCs come to the site, not fewer. Redness occurs, not paleness, during inflammation.

8. A nurse recalls the mast cell, a major activator of inflammation, initiates the inflammatory response through the process of:

- a. Chemotaxis
- b. Endocytosis
- c. Degranulation
- d. Opsonization

ANS: C

Degranulation of mast cells is a major cellular component of inflammation. Chemotaxis is the process of white cell migration.

Endocytosis is a part of phagocytosis and is not a factor in mast cell response. Opsonization is part of phagocytosis and is not a factor in mast cell response.

9. Which of the following individuals would be at greatest risk for an opportunistic infection?
- a. 18-year-old with diabetes
 - b. 70-year-old with congestive heart failure
 - c. 24-year-old who is immunocompromised
 - d. 30-year-old with pneumonia

ANS: C

Opportunistic microorganisms can cause disease if the individual's defenses are compromised.

An 18-year-old with diabetes would not be immunocompromised and would not be at risk.

A 70-year-old with congestive heart failure would not be immunocompromised and would not be at risk.

A 30-year-old with pneumonia would not be immunocompromised and would not be at risk.

10. The directional migration of leukocytes along a chemical gradient is termed:
- a. Chemotaxis
 - b. Endocytosis
 - c. Margination
 - d. Diapedesis

ANS: A

Chemotaxis is the process by which leukocytes undergo directed migration. Endocytosis is a form of engulfment and a part of phagocytosis.

Margination occurs when leukocytes adhere to endothelial cells in the walls of vessels. Diapedesis is the emigration of the cells through cell junctions that have loosened in response to inflammatory mediators.

11. A 20-year-old male shoots his hand with a nail gun while replacing roofing shingles. Which of the following cell types would be the first to aid in killing bacteria to prevent infection in his hand?
- a. Eosinophils
 - b. Neutrophils
 - c. Leukotrienes

- d. Monocytes

ANS: B

Neutrophils are the predominant phagocytes in the early inflammatory site, arriving within 6 to 12 hours after the initial injury.

Eosinophils help limit and control inflammation. Leukotrienes are activators of the inflammatory response. Monocytes enter much later and replace leukocytes.

12. The predominant phagocyte of early inflammation is the:

- a. Eosinophil
- b. Neutrophil
- c. Lymphocyte
- d. Macrophage

ANS: B

Neutrophils are the predominant phagocytes in the early inflammatory site, arriving within 6 to 12 hours after the initial injury.

Eosinophils help limit and control inflammation, but they are not the prominent phagocyte.

Lymphocytes are part of the innate immune response. Macrophages kill microorganisms.

13. A 25-year-old female experiences a headache and takes aspirin for relief. A nurse recalls aspirin relieves the headache by:

- a. Decreasing leukotriene production
- b. Increasing histamine release
- c. Decreasing prostaglandin production
- d. Increasing platelet-activating factor

ANS: C

Aspirin is a prostaglandin inhibitor.

Aspirin inhibits prostaglandins; it does not affect leukotriene production. Aspirin inhibits prostaglandins; it does not affect histamine release.

Aspirin does not play a role in the platelet activating factor; this is a leukotriene response.

14. Which factor will help the nurse differentiate leukotrienes from histamine?

- a. Site of production
- b. Vascular effect
- c. Chemotactic ability
- d. Time of release

ANS: D

Leukotrienes are released slower and longer than histamine. Leukotrienes and histamine are produced from mast cells. Leukotrienes and histamine have similar vascular effects.

Leukotrienes and histamine have similar chemotactic ability.

15. A 25-year-old male is in a car accident and sustains a fracture to his left femur with extensive soft tissue injury. The pain associated with the injury is related to:

- a. Histamine and serotonin
- b. Kinins and prostaglandins
- c. Vasoconstriction
- d. Immune complex formation

ANS: B

Prostaglandins cause increased vascular permeability, neutrophil chemotaxis, and pain by direct effects on nerves. Kinins also promote pain.

Prostaglandins produce pain; histamine promotes vasodilation. Prostaglandins produce pain, not vasoconstriction.

Prostaglandins produce pain, not the immune complex.

16. The complement, clotting, and kinin systems share which of the following characteristics?

- a. Activation of a series of proenzymes
- b. Phagocytosis initiation
- c. Granulocyte production
- d. Activated by interferon

ANS: A

The complement system, the clotting system, and the kinin system are normally in inactive forms, but can activate in a series as proenzymes and are involved in the inflammatory process.

The complement system, the clotting system, and the kinin system do not play a role in phagocytosis, but do play a role in the inflammatory response as proenzymes.

The complement system, the clotting system, and the kinin system do not play a role in granulocyte production, but they function as proenzymes in the inflammatory response. The complement system, the clotting system, and the kinin system are not activated by interferon, but are activated by enzymatic action.

17. Which statement indicates teaching was successful regarding the classic pathway of the complement system? The classic pathway of the complement system is activated by:

- a. Histamine
- b. Antigen-antibody complexes
- c. Leukotrienes
- d. Prostaglandins

ANS: B

The classic pathway of the complement system is activated by antibodies of the immune system.

The classic pathway of the complement system is activated by antibodies, not by histamine.

The classic pathway of the complement system is activated by antibodies, not by leukotrienes.

The classic pathway of the complement system is activated by antibodies, not by prostaglandins.

18. A patient has researched bradykinin on the Internet. Which information indicates the patient understands the functions of bradykinin? Bradykinin is involved in:

- a. Increasing vascular permeability
- b. Vasoconstricting blood vessels
- c. Stimulating the clotting system
- d. Increasing degradation of prostaglandins

ANS: A

Bradykinin increases vascular permeability.

Bradykinin increases vascular permeability; it does not promote vasoconstriction. Bradykinin increases vascular permeability; it does not stimulate clotting.

Bradykinin promotes pain; thus, it does not degrade prostaglandins but supports them.

19. After teaching the staff about the clotting system, which statement indicates teaching was successful? The end product of the clotting system is:

- a. Plasmin
- b. Fibrin
- c. Collagen
- d. Factor X

ANS: B

The end product of the clotting system is fibrin. Plasmin activates the complement cascade.

Collagen plays a factor in wound healing. Factor X is a first step in the clotting system.

20. A 5-year-old male is diagnosed with a bacterial infection. Cultures of the bacteria revealed lipopolysaccharides on the bacterial cell surface. Which of the complement pathways would be activated in this case?

- a. Classical pathway
- b. Lectin pathway
- c. Alternative pathway
- d. Kinin pathway

ANS: C

The alternative pathway is activated by several substances found on the surface of infectious organisms, such as those containing lipopolysaccharides.

The classical pathway is primarily activated by antibodies that are proteins of the acquired immune system.

The lectin pathway is similar to the classic pathway but is independent of antibody. It is activated by several plasma proteins.

The kinin pathway is involved in coagulation.

21. An 8-year-old female presents with edema of the cutaneous and mucosal tissue layers. Her mother reports that the condition is recurrent and seems to occur more often during stressful situations. The child is diagnosed with hereditary angioedema. Which of the following is deficient in this child?

- a. C1 esterase inhibitor
- b. Carboxypeptidase
- c. Neutrophils
- d. Plasmin

ANS: A

A genetic defect in C1 esterase inhibitor (C1 INH deficiency) results in hereditary angioedema.

Hereditary angioedema is due to C1 esterase inhibitor. Carboxypeptidase degrades kinins. Hereditary angioedema is due to C1 esterase inhibitor, not a disorder of neutrophils.

Plasmin is not associated with hereditary angioedema, but is associated with clots.

22. A nurse is preparing to teach on the subject of opsonins. Which information should the nurse include? Opsonins are molecules that:

- a. Are composed of fatty acids
- b. Regulate inflammation
- c. Degranulate mast cells
- d. Enhance phagocytosis

ANS: D

Opsonins coat the surface of bacteria and increase their susceptibility to being phagocytized.

Opsonins are not composed of fatty acids; they are antibodies.

Opsonins coat the surface of bacteria and increase their susceptibility to being phagocytized. They do not regulate inflammation; mast cells do.

Opsonins coat the surface of bacteria and increase their susceptibility to being phagocytized; they do not react with mast cells.

23. A 10-year-old male is diagnosed with a parasite. Which lab result should the nurse check for a response to the parasite?

- a. Monocytes
- b. Eosinophils
- c. Neutrophils
- d. Macrophages

ANS: B

Eosinophils serve as the body's primary defense against parasites.

Monocytes are not the body's primary defense against parasite; eosinophils are. Monocytes are phagocytic.

Neutrophils are phagocytic; they are not the body's defense against parasites. Macrophages are not active against parasites; they act as long-term defense against infections.

24. A 65-year-old female is diagnosed with metastatic breast cancer. She has developed muscle wasting. Which of the following substances would be produced in large quantities to eliminate the tumor cells and cause muscle wasting?

- a. Interleukin-6
- b. Eosinophils
- c. Tumor necrosis factor
- d. Platelets

ANS: C

Tumor necrosis factor causes muscle wasting.

Interleukin-6 stimulates growth and differentiation of blood cells. Eosinophils are stimulated for parasites.

Platelets stimulate clotting.

25. When phagocytes begin to stick avidly to capillary walls, which process is occurring?

- a. Margination
- b. Exudation
- c. Integration

d. Emigration

ANS: A

Both leukocytes and endothelial cells secrete substances that increase adhesion, or stickiness, causing the leukocytes to adhere more avidly to the endothelial cells in the walls of the capillaries and venules in a process called margination.

Exudation is the process of pus formation and does not result in stickiness. Integration occurs in cells but is not a major function and does not lead to stickiness. Emigration is similar to diapedesis and is not associated with increased stickiness.

26. An infant develops a fever secondary to a bacterial infection. Which of the following most likely triggered the fever?

- a. Interleukin-1
- b. Interleukin-6
- c. Interleukin-10
- d. Interferons (INFs)

ANS: A

Interleukin-1 is responsible for fever production.

Interleukin-6 stimulates growth and differentiation of blood cells. Interleukin-10 helps decrease the immune response.

INFs are members of a family of cytokines that protect against viral infections.

27. A 54-year-old male intravenous (IV) drug user is diagnosed with chronic hepatitis C. Testing revealed that he is a candidate for treatment. Which of the following could be used to treat his condition?

- a. Interleukin-1
- b. Interleukin-6
- c. Interleukin-10
- d. INFs

ANS: D

INFs are members of a family of cytokines that protect against viral infections. Interleukin-1 is responsible for fever production.

Interleukin-6 stimulates growth and differentiation of blood cells. Interleukin-10 helps decrease the immune response.

28. A 35-year-old male is diagnosed with lobar pneumonia (lung infection). Which of the following exudates would be present in highest concentration at the site of this advanced inflammatory response?

- a. Serous
- b. Purulent
- c. Hemorrhagic
- d. Fibrinous

ANS: D

Fibrinous exudates occur in the lungs of individuals with pneumonia. Serous fluid is watery fluid, as in a blister.

Purulent is characterized by an abscess, such as pus.

Hemorrhagic occurs when the exudates are filled with erythrocytes.

29. During inflammation, the liver is stimulated to release plasma proteins, collectively known as:

- a. Opsonins
- b. Acute phase reactants
- c. Antibodies
- d. Phagolysosome

ANS: B

The synthesis of many plasma proteins by the liver is increased during inflammation. These proteins, which can be either proinflammatory or antiinflammatory in nature, are referred to as acute phase reactants.

Opsonins coat the surface of bacteria and increase their susceptibility to being phagocytized.

Antibodies are proteins of the immune system. Phagolysosome destroys bacterium.

30. A 3-year-old is making play cakes in a sandbox and is eating the play cakes. The sand was also being used by cats as a litter box and was contaminated with toxoplasmosis. Which of the following would most likely also be present?

- a. Granuloma formation
- b. Degranulation
- c. Blood clots
- d. Exudate production

ANS: A

Infections caused by bacteria such as toxoplasmosis can result in granuloma formation. Degranulation is a part of mast cell destruction.

Blood clots are not expected with chronic inflammation. Exudate production is pus formation.

31. A 12-year-old male is fighting with another child when he receives a puncture wound from a pencil. The school nurse cleans and bandages the wound. After about 1 week, the wound would be in which phase of healing?

- a. Debridement
- b. Primary intention
- c. Resolution
- d. Maturation

ANS: C

Resolution occurs when repaired tissue is approaching close to normal.

Debridement is the scraping away of dead tissue and is not a phase of wound healing. Primary intention is the stage of healing of wounds that are closely proximated.

Maturation is the result of severe wounds which would begin several weeks after injury and may take 2 years.

32. The macrophage secretion that stimulates procollagen synthesis and secretion is:

- a. Angiogenesis factor
- b. Matrix metalloproteinase
- c. Vascular endothelial growth factor
- d. Transforming growth factor-beta

ANS: D

Macrophages secrete transforming growth factor-beta to stimulate fibroblasts to secrete the collagen precursor procollagen.

Angiogenesis factor supports the growth of new vessels.

Matrix metalloproteinase remodels proteins at the site of injury. Vascular endothelial growth factors are also involved in vessel growth.

33. A 30-year-old male was involved in a motor vehicle accident. The glass from the shattered window cut his face and neck. The scar, however, was raised and extended beyond the original boundaries of the wound. This pattern of scarring is caused by impaired:

- a. Nutritional status
- b. Collagen synthesis
- c. Epithelialization
- d. Contraction

ANS: B

Impaired production of collagen can cause surface overhealing, leading to a keloid or a hypertrophic scar.

Nutritional deficiencies would lead to healing problems, but not extended scarring. Necrosis or steroid use leads to impaired epithelialization.

Impaired contraction would lead to drawing of tissues, not raised.

34. The nurse is reviewing the lab data of a newly admitted patient. The nurse notes the patient had an erythrocyte sedimentation done, and the results are quite elevated. The nurse would focus the care plan on which of the following conditions?

- a. Anemia
- b. Infection
- c. Inflammation
- d. Electrolyte imbalance

ANS: C

Common laboratory tests for inflammation measure levels of acute phase reactants. An increase in fibrinogen is associated with an increased erythrocyte sedimentation rate, which is considered a good indicator of an acute inflammatory response.

Anemia would not result in an increased erythrocyte sedimentation rate.

An infection would result in an increase in white blood cell count, but not the erythrocyte sedimentation rate.

An electrolyte imbalance would not cause a rise in the sedimentation rate.

35. Healing by secondary intention would occur in which of the following patients? A patient with a:

- a. Sutured surgical wound
- b. Stage IV pressure ulcer
- c. Paper cut
- d. Sunburn

ANS: B

A patient with a stage IV pressure ulcer would heal by secondary intention. A patient with a surgical wound would heal by primary intention.

A patient with a paper cut would heal by primary intention.

A patient with a sunburn would heal without needing either primary or secondary intention.

36. The post-surgical patient is experiencing delayed wound healing. The dietician believes the delay is related to nutritional intake. A deficiency in which of the following substances could directly affect healing?

- a. Vitamin D
- b. Ascorbic acid
- c. Melanin
- d. Cholesterol

ANS: B

Most of the factors that interfere with the production of collagen in healing tissues are nutritional. Scurvy, for example, is caused by lack of ascorbic acid one of the cofactors required for collagen

formation by fibroblasts. The results of scurvy are poorly formed connective tissue and greatly impaired healing.

Vitamin D deficiency will not directly affect healing; ascorbic acid does. Melanin deficiency will not directly affect healing; ascorbic acid does.

Cholesterol deficiency will not directly affect healing; ascorbic acid does.

MULTIPLE RESPONSE

1. A nurse remembers the primary actions of the complement cascade include (select all that apply):

- a. Increased vascular permeability
- b. Vasoconstriction
- c. Chemotaxis
- d. Opsonization
- e. Cell killing
- f. Increased clotting

ANS: A, C, D, E

The actions of the complement cascade include increased vascular permeability and vasodilation, chemotaxis, opsonization, and cell killing. It does not involve vasoconstriction or increased clotting.

2. The nurse is assessing a patient with a diagnosis of inflammation. The nurse would expect to find which of the following signs and symptoms consistent with acute inflammation? (Select all that apply.)

- a. Heat
- b. Erythema
- c. Pain
- d. Swelling
- e. Exudates
- f. Loss of function

ANS: A, B, C, D, F

The classic symptoms of acute inflammation include redness (erythema), heat, swelling, pain, and loss of function. Exudates would indicate infection, not inflammation.

3. The nurse identified each of the following clinical manifestations of inflammation. Which would the nurse classify as a local response? (Select all that apply.)

- a. Fever
- b. Redness
- c. Swelling
- d. Heat
- e. Pain

ANS: B, C, D, E

Local manifestations of inflammation are the result of the vascular changes associated with the inflammatory process, including vasodilation and increased capillary permeability. The symptoms include redness, heat, swelling, and pain.

4. Physical barriers that offer the body protection from damage and infection are located in the (select all that apply):

- a. Gastrointestinal tract
- b. Genitourinary tract
- c. Respiratory tract
- d. Lymph system
- e. Hematopoietic system

ANS: A, B, C

The physical barriers that cover the external parts of the human body offer considerable protection from damage and infection. These barriers are composed of tightly associated epithelial cells of the skin and of the linings of the gastrointestinal, genitourinary, and respiratory tracts.

Chapter 4: Immunopathology

MULTIPLE CHOICE

1. Neutrophils:
 - a. are phagocytic cells.
 - b. produce histamine.
 - c. produce antibodies.
 - d. are elevated during an allergic response.

ANS: A

2. Which cells are required to process and present antigens from foreign material as the initial step in the immune response?

- a. T helper cells

- b. Macrophages
- c. Eosinophils
- d. Monocytes

ANS: B

3. Humoral immunity is mediated by:
- a. natural killer cells.
 - b. T lymphocytes (T cells).
 - c. B lymphocytes (B cells).
 - d. neutrophils.

ANS: C

4. A secondary immune response differs from the primary immune response in that:
- a. it is more rapid than the primary response and results in higher antibody levels.
 - b. it is slower than the primary response and doesn't change the antibody levels.
 - c. it occurs at the same time as the primary response but results in a decrease in antibodies.
 - d. it only occurs in hyperallergic reactions and results in a decrease of antibodies.

ANS: A

5. Which type of immunity is provided by a vaccination?
- a. Active natural
 - b. Active artificial
 - c. Passive natural
 - d. Passive artificial

ANS: B

6. When an allergen binds with IgE antibodies on mast cells, resulting in release of chemical mediators, this reaction is called:
- a. cytotoxic hypersensitivity.
 - b. immune complex hypersensitivity.

- c. type I hypersensitivity.
- d. type IV hypersensitivity.

ANS: C

7. The role of memory cells is to:
- a. change into an antibody-secreting cell following activation.
 - b. immediately secrete antibodies following the first exposure to antigen.
 - c. recognize the antigen and stimulate the immune response.
 - d. bind complement to the antibody.

ANS: C

8. Which statement applies to contact dermatitis?
- a. It occurs when IgE antibodies on the skin react with the causative substance.
 - b. It may result from ingested foods.
 - c. Urticaria (hives) gradually spread over the body.
 - d. A type IV reaction occurs in affected areas.

ANS: D

9. Which of the following causes anaphylaxis?
- a. A severe, systemic allergic reaction
 - b. Type III hypersensitivity
 - c. Cell-mediated hypersensitivity
 - d. Immune complex deposits in many tissues

ANS: A

10. Following a positive HIV antibodies blood test and ELISA test, what is the test commonly used for confirmation?
- a. Agglutination
 - b. Double immunodiffusion test

- c. Western blot test
- d. Sedimentation rate test

ANS: C

11. Incompatible blood transfusions result in:

- a. hemolysis of erythrocytes.
- b. a type I immune response.
- c. deposits in multiple organs.
- d. immune deficiency.

ANS: A

12. An autoimmune disease is:

- a. excessive formation of antibodies following exposure to foreign material.
- b. an extreme response to normally harmless material in the environment.
- c. an abnormal response to ingested food and drugs.
- d. failure of the immune system to distinguish self from nonself.

ANS: D

13. Systemic lupus erythematosus is caused by:

- a. a chronic allergic condition.
- b. development of an immune-deficient state.
- c. a deficiency of T lymphocytes.
- d. immune complex deposits of antinuclear antibodies.

ANS: D

14. Distinguishing clinical features of systemic lupus erythematosus include:

- a. inflammation in multiple organs.
- b. lack of a specific diagnostic blood test.

- c. acute onset and nonprogressive course.
- d. typical skin rash on the chest and back.

ANS: A

15. Which of the following are the target cells for HIV?

- a. Helper T lymphocytes (CD4 lymphocytes)
- b. B lymphocytes
- c. Natural killer cells
- d. Macrophages

ANS: A

16. A diagnosis of HIV positive means that:

- a. the number of T lymphocytes in the circulating blood is decreased.
- b. significant opportunistic infection is present in the body.
- c. the individual has AIDS.
- d. the virus and its antibodies are present in the blood.

ANS: D

17. HIV infection impairs:

- a. humoral immunity.
- b. cell-mediated immunity.
- c. both humoral and cell-mediated immunity.
- d. neither type of immunity.

ANS: C

18. Immunodeficiencies may result in an increased risk of infections by normally harmless microorganisms. These infections are referred to as:

- a. opportunistic.
- b. prophylactic.
- c. abnormal.

d. transient.

ANS: A

19. Serious infections frequently occurring in patients with AIDS include:

1. tuberculosis.

2. Pneumocystis carinii pneumonia.

3. influenza.

4. tetanus.

a. 1, 2

b. 1, 4

c. 2, 3

20. Which of the following statements does NOT apply to major histocompatibility complex (MHC) proteins or molecules?

a. They are genes on chromosome 6.

b. All members of a family have identical MHCs.

c. They alert the immune system to virus-infected cells.

d. A close match is essential for successful tissue transplants.

ANS: B

21. CD4-positive helper T cells function by:

a. direct cytotoxic action.

b. facilitating all immune system activity.

c. producing immunoglobulins.

d. inactivating allergens.

ANS: B

22. Host-versus-graft disease refers to:

a. hyperacute rejection of tissue.

- b. T cells in grafted tissue attacking host cells.
- c. infection resulting from immunosuppression therapy.
- d. transplant rejection by the recipients immune system.

ANS: D

23. Which of the following complications does NOT occur frequently in AIDS patients?

- a. Kaposi sarcoma
- b. Wasting syndrome
- c. Lymphoma
- d. Polyarthrititis

ANS: D

24. Which of the following characteristics apply to HIV?

- 1. It contains two strands of DNA.
 - 2. It tends to mutate frequently to form new strains.
 - 3. The incubation period is extremely short.
 - 4. It is inactivated by heat and many disinfectants.
- a. 1, 2
 - b. 1, 3
 - c. 2, 4
 - d. 3, 4

ANS: C

25. In cases of HIV infection, the window period refers to the time between:

- a. entry of the virus into the blood and the initial manifestations.
- b. entry of the virus into the body and the appearance of antibodies in the blood.
- c. entry of the virus into the body and a significant drop in CD4 T-helper lymphocyte count.

- d. diagnosis of HIV positive and diagnosis of AIDS.

ANS: B

26. Which of the following is an effect of cytokines? They:

- a. activate and stimulate proliferation of B and T lymphocytes.
- b. destroy antigens quickly.
- c. increase the rate of mitosis in tumors.
- d. cause immediate pain.

ANS: A

27. What does seroconversion mean in relation to HIV and AIDS?

- a. The virus has been identified in the blood and body fluids.
- b. Antibodies for HIV have been identified in the blood.
- c. HIV was found in lymphocytes.
- d. Active infection has developed in the patient.

ANS: B

28. Which of the following statements is TRUE regarding a patient who is HIV positive?

- a. No medication is required until the CD4 cell count drops below normal range.
- b. Antibodies are present, destroying the virus and preventing transmission to others.
- c. Antibodies in the blood indicate presence of virus and possible transmission to others.
- d. Enzymes have not yet converted RNA to DNA for replication.

ANS: C

29. The term tolerance refers to:

- a. surveillance and destruction of new cancer cells by the immune system.
- b. the ability of the immune system to ignore self cells.
- c. the ability of T and B lymphocytes to work together.
- d. the role of lymphoid tissue in the body defenses.

ANS: B

30. Which of the following statements applies to the complement system?
- a. It is activated by IgE.
 - b. It blocks the inflammatory response.
 - c. It consists of proteins in the blood that must be activated.
 - d. It may destroy antibodies in the circulation.

ANS: C

31. Which of the following statements regarding immunoglobulins is TRUE?
- a. They consist of a unique sequence of amino acids.
 - b. They are produced in the red bone marrow.
 - c. They are attached to mucosal membranes at entry points into the body.
 - d. IgA binds to allergens.

ANS: A

32. Which of the following is NOT a cause of immunodeficiency?
- a. Hypoplasia of the thymus
 - b. Delayed hypersensitivity
 - c. Immunosuppressive drugs
 - d. Atrophy of the lymph nodes

ANS: B

33. Which statement is TRUE regarding infants born to HIV-infected mothers?
- a. Infants usually test negative for HIV after birth.
 - b. There is little risk of infected mothers passing the virus to their infants during delivery.
 - c. Breast milk does not contain HIV or antibodies.
 - d. Infants test positive for HIV because of the presence of maternal antibodies.

ANS: D

34. The most common cause of death in patients who have AIDS is:

- a. HIV encephalopathy.
- b. tuberculosis.
- c. Pneumocystis carinii pneumonia.
- d. Candida infection.

ANS: C

Chapter 5: Neoplasia

MULTIPLE CHOICE

1. What is a benign neoplasm originating from adipose tissue called?

- a. Adenoma
- b. Lipoma
- c. Fibrosarcoma
- d. Adenocarcinoma

ANS: B

2. What are malignant neoplasms arising from connective tissue cells called?

- a. Carcinomas
- b. Sarcomas
- c. Melanomas
- d. Fibromas

ANS: B

3. Which of the following is a characteristic of a benign tumor?

- a. It is unencapsulated and invasive.
- b. It consists of undifferentiated cells.
- c. It exerts systemic effects.
- d. Cells appear relatively normal.

ANS: D

4. Which factor provides the basis for the grading of newly diagnosed malignant tumors?

- a. Size of the tumor
- b. Number of metastases
- c. Degree of differentiation of the cells
- d. Number of lymph nodes involved

ANS: C

5. A warning sign of possible cancer would be any of the following EXCEPT:

- a. persistent, unusual bleeding.
- b. a change in bowel habits.
- c. sudden development of fever, nausea, and diarrhea.
- d. a change in shape, color, or surface of a skin lesion.

ANS: C

6. The common local effects of an expanding tumor mass include:

- 1. obstruction of a tube or duct.
 - 2. anemia and weight loss.
 - 3. cell necrosis and ulceration.
 - 4. tumor markers in the circulation.
- a. 1, 2
 - b. 1, 3

c. 2, 4

d. 3, 4

ANS: B

7. Which of the following does paraneoplastic syndrome refer to?

a. The effects of substances such as hormones secreted by the tumor cells

b. Severe weight loss and cachexia associated with advanced cancer

c. The decreased resistance to infection resulting from malignant tumors

d. The effects of multiple metastatic tumors

ANS: A

8. Which term refers to the spread of malignant cells through blood and lymph to distant sites?

a. Invasiveness

b. Seeding

c. Metastasis

d. Systemic effect

ANS: C

9. One reason for staging a malignant tumor at the time of diagnosis is to:

a. identify the original cell from which the tumor developed.

b. locate and identify the primary tumor.

c. decide the initiating factor for a particular tumor.

d. determine the best treatment and prognosis.

ANS: D

10. The process of carcinogenesis usually begins with:

a. exposure to promoters causing dysplasia.

b. development of defective genes.

- c. an irreversible change in the cell DNA.
- d. a single exposure to a known risk factor causing temporary cell damage.

ANS: C

11. What would be an external source of ionizing radiation?
- a. A needle containing a radioisotope implanted beside the tumor
 - b. Gamma rays delivered by a cobalt machine
 - c. A dose of a radioactive drug to be ingested
 - d. A fluid containing radioactive material instilled in a body cavity

ANS: B

12. Radiation therapy destroys:
- a. all cells in the tumor at one time.
 - b. the cells in the center of the tumor.
 - c. primarily rapidly dividing cells.
 - d. radioresistant cells.

ANS: C

13. The most critical adverse effects of chemotherapy and radiation therapy are:
- a. thrombocytopenia and leucopenia.
 - b. headache and lethargy.
 - c. nausea and constipation.
 - d. alopecia and weight loss.

ANS: A

14. Chemotherapy usually involves a combination of drugs in order to:
- 1. reduce the adverse effects.
 - 2. guarantee that all cancer cells are destroyed.

- 3. be effective in more phases of the cell cycle.
- 4. totally block the mitotic stage.
- a. 1, 3
- b. 1, 4
- c. 2, 3
- d. 3, 4

ANS: A

- 15. Why does ovarian cancer have a poor prognosis?
- a. The ovaries are inaccessible for examination.
- b. Specific signs rarely appear until after secondary tumors have developed.
- c. The same tumor markers are present with many types of cancer.
- d. No effective treatment is available.

ANS: B

- 16. Select the correct pair representing a malignant tumor and its marker:
- a. colon cancer: carcinoembryonic antigen (CEA)
- b. hepatic cancer: CA125, AFP
- c. prostate cancer: human chorionic gonadotropin (hCG)
- d. testicular cancer: Philadelphia chromosome

ANS: A

- 17. Antiangiogenesis drugs act on a malignant tumor by:
- a. promoting the immune response and removal of abnormal tumor cells.
- b. blocking hormonal stimulation of tumor cells.
- c. reducing blood flow and nutrient supply to tumor cells.
- d. transporting radioisotopes into the tumor.

ANS: C

18. The development of neutropenia during chemotherapy for cancer means:

- a. the cancer cells are being destroyed quickly.
- b. the patient is likely to hemorrhage.
- c. higher doses of chemotherapy could be tolerated by this patient.
- d. the patient is at high risk for infection.

ANS: D

19. Malignant brain tumors:

- a. metastasize quickly to all parts of the body.
- b. spread first to lungs and bone.
- c. spread to other parts of CNS.
- d. do not metastasize anywhere at any time.

ANS: C

20. Identify the common dose-limiting factor for chemotherapy:

- a. Alopecia
- b. Bone marrow depression
- c. Nausea and vomiting
- d. Weight loss

ANS: B

21. Glucocorticoids are often prescribed during a course of chemotherapy and radiation because:

- a. glucocorticoids greatly potentiate the effect of chemotherapy.
- b. the immune system is stimulated.
- c. skeletal muscle atrophy will be decreased.
- d. inflammation around the tumor may be reduced.

ANS: D

22. Vomiting frequently follows a chemotherapy treatment because:

- a. the gastrointestinal tract is irritated.
- b. the chemicals stimulate the emetic center.
- c. the drugs have an unpleasant odor.
- d. A and B

ANS: D

23. What type of normal cells are often damaged during chemotherapy and radiation treatments?

- a. Epithelial cells
- b. Skeletal muscle cells
- c. Nerve tissue
- d. Collagen and fibrous tissue

ANS: A

24. Remission for cancer is generally defined as a period in which:

- a. chemotherapy cannot be used.
- b. signs and symptoms are absent.
- c. complications are evident.
- d. metastases occur.

ANS: B

25. All of the following are correct statements about skin cancers EXCEPT:

- a. They are difficult to diagnose and treat.
- b. They usually develop slowly on the head, neck, or back of individuals with fair skin.
- c. The number of skin cancer cases is increasing.
- d. Basal cell carcinoma is the most common form of skin cancer.

ANS: A

26. High risk factors for cancer include:

1. human papilloma virus.
 2. chronic irritation and inflammation.
 3. repeated sun exposure.
 4. high family incidence.
- a. 1, 3
 - b. 3, 4
 - c. 1, 2, 4
 - d. 1, 2, 3, 4

ANS: D

27. The term apoptosis refers to:

- a. programmed cell death.
- b. abnormal or immature cells.
- c. degree of differentiation of cells.
- d. the development of new capillaries in a tumor.

ANS: A

28. The warning signs for cancer include:

- a. unusual bleeding.
- b. change in a wart or mole (e.g., color).
- c. a new solid lump, often painless.
- d. All the above

ANS: D

29. A classification process that applies to a specific malignant tumor and describes the extent of the disease at a given time is called:

- a. seeding.
- b. mutation.

- c. staging.
- d. grading.

ANS: C

30. Benign tumors can often be differentiated from malignant tumors because benign tumors:

- a. often have systemic effects.
- b. contain cells showing increased mitosis and atypical rapid growth.
- c. are encapsulated and slow-growing.
- d. can metastasize or invade nearby tissue.

ANS: C

31. Benign tumors in the brain are often life-threatening because they:

- a. metastasize early in their development.
- b. create excessive pressure within the skull.
- c. cannot be removed.
- d. cause serious systemic effects.

ANS: B

32. Drugs or agents that augment the natural immune response in the body to improve identification and removal of abnormal cells are called:

- a. biological response modifiers.
- b. angiogenesis stimulators.
- c. analgesic complements.
- d. targeted receptor modifiers.

ANS: A

33. The method that can be used as an alternative to surgical removal of a tumor by using heat generated by a needle inserted into the tumor is referred to as:

- a. radiation therapy.

- b. thermolysis intervention.
- c. brachytherapy.
- d. radiofrequency ablation.

ANS: D

34. Staging systems used to classify a malignant tumor at the time of diagnosis are based on which of the following factors?

- a. Size of the tumor, involvement of lymph nodes, metastases
- b. Location of tumor, size, type of cellular abnormality
- c. Size, encapsulated or non-encapsulated, invasion into neighboring tissue
- d. Type of cellular abnormality, size of secondary tumors, location/tissue affected

ANS: A

35. One of the general effects of a malignant cancer is cachexia, which is:

- a. severe bleeding.
- b. severe tissue wasting.
- c. severe fatigue.
- d. multiple opportunistic infections.

ANS: B

Chapter 6: Developmental and Genetic Diseases

MULTIPLE CHOICE

1. Which of the following statements applies to the sex chromosomes?
 - a. They are identified as XY in the female.
 - b. They are numbered pair 23 in the karyotype.
 - c. They contain the same genes as in the other pairs of chromosomes.
 - d. They are found only in the cells in the gonads (the ovaries and the testes).

ANS: B

2. What is the term for an arrangement of the chromosomes from an individual's cell, organized in pairs based on size and shape?
 - a. Pedigree
 - b. Punnett squares
 - c. Karyotype
 - d. Genotype

ANS: C

3. What is characteristic of a congenital disorder?

- a. Genes are not involved.
- b. It is strictly a developmental anomaly.
- c. A cause is known.
- d. It is usually manifested in the neonatal period.

ANS: D

4. What is the probability of two parents, both carriers of a defective recessive gene, producing a homozygous child (with each pregnancy)?

- a. 0%
- b. 25%
- c. 50%
- d. 75%

ANS: B

5. In the case of an X-linked recessive disorder, a carrier mother and unaffected father could produce a/an:

- a. normal female.
- b. affected female.
- c. male carrier.

ANS: A

6. Down syndrome is an example of a/an:

- a. autosomal dominant disorder.
- b. multifactorial disorder.
- c. developmental defect.
- d. chromosomal disorder.

ANS: D

7. Agents that cause damage during embryonic or fetal development are called:

- a. teratogenic.
- b. mutagenic.
- c. multifactorial agents.
- d. polygenic agents.

ANS: A

8. What is an example of a multifactorial congenital disorder?

- a. Type AB blood
- b. Down syndrome
- c. Color blindness
- d. Cleft lip and palate

ANS: D

9. Ultrasonography during pregnancy would be helpful in detecting fetal:

- a. enzyme deficits.
- b. structural anomalies.
- c. chromosomal defects.
- d. hormonal abnormalities.

ANS: B

10. Which of the following statements regarding Down syndrome is TRUE?

- a. The typical physical characteristics are present at birth.
- b. All children with Down syndrome have the same organ defects and medical problems.
- c. The extent of cognitive impairment can be assessed at birth.
- d. The birth of a child with Down syndrome is only a risk to mothers over age 35.

ANS: A

11. Which of the following statements applies to Huntingtons disease?

- a. The effects are obvious at birth.
- b. There is a test for the defective gene.
- c. There is a 50% probability that the child of an affected parent will be a carrier.
- d. The child must inherit the defective gene from both parents in order to be affected.

ANS: B

12. A mother is a carrier of Duchenne muscular dystrophy; the father is unaffected. They have one son with muscular dystrophy. Another male child is expected. The probability of the second son having muscular dystrophy is:

- a. 100%
- b. 50%
- c. 25%
- d. 0%

ANS: B

13. Hemophilia A has been diagnosed in a young boy. He has inherited this defective gene from:

- a. his father.
- b. his mother.
- c. both parents.

ANS: B

14. A father affected with hemophilia A, whose wife is unaffected, will pass on the defective gene to:

- a. all of his sons, who will be affected.
- b. 50% of his sons, who will be affected.
- c. all of his daughters, who will be carriers.
- d. 50% of his daughters, who will be carriers.

ANS: C

15. Which of the following are common manifestations of Down syndrome?

1. Congenital heart defect
 2. Cleft lip and palate
 3. Large protruding tongue
 4. Limited intellectual development
- a. 1, 2
 - b. 1, 3
 - c. 2, 4
 - d. 1, 3, 4

ANS: D

16. A spontaneous alteration in genetic material that may result from exposure to harmful substances is termed:

- a. autosome.
- b. genotype.
- c. meiosis.
- d. mutation.

ANS: D

17. A person with sickle cell trait that is heterozygous has:

- a. an incomplete dominant gene.
- b. a multifactorial condition.
- c. co-dominant genes.
- d. X-linked dominant trait.

ANS: A

18. TORCH is an acronym for routine prenatal screening tests for high-risk maternal infections; TORCH stands for:

- a. toxoplasmosis, other (hepatitis B, mumps, rubeola, varicella, gonorrhea, syphilis), rubella, cytomegalovirus, and herpes.

b. tuberculosis, other (hepatitis B, mumps, rubeola, varicella, gonorrhea, syphilis), rabies, cytomegalovirus, and HIV.

c. toxoplasmosis, other (hepatitis B, mumps, rubeola, varicella, gonorrhea, syphilis), rabies, cytomegalovirus, and HIV.

d. tuberculosis, other (hepatitis B, mumps, rubeola, varicella, gonorrhea, syphilis), rabies, cytomegalovirus, and herpes.

ANS: A

19. Which statement applies to the effects of exposure to harmful substances during embryonic life?

1. During the first two weeks, exposure will usually cause death of the embryo.

2. Organs or body structures may be altered by exposure during the first two months.

3. The effects of exposure depend on the stage of development at the time of exposure.

4. Metabolic abnormalities usually follow exposure to teratogens.

a. 1, 3

b. 2, 4

c. 1, 2, 3

d. 2, 3, 4

ANS: C

20. Exposure to cocaine during pregnancy leads to increased risk of:

a. premature birth.

b. respiratory problems.

c. sudden infant death syndrome.

d. A, B, and C

ANS: D

21. Which term refers to prenatal diagnosis through examination of amniotic fluid?
- a. Chorionic villus testing
 - b. Preparing a family pedigree
 - c. Amniocentesis
 - d. Triple-screen test

ANS: C

22. The laboratory practice of changing DNA sequences in microorganisms is called:
- a. the genotype.
 - b. gene mutation.
 - c. genetic engineering.
 - d. gene therapy.

ANS: C

23. The purpose of the Human Genome Project was to:
- a. map the nucleotide sequence and identify the genes on each human chromosome.
 - b. study the common patterns of inheritance of single-gene disorders.
 - c. manipulate the sequence of DNA in microorganisms and animals.
 - d. identify spontaneous alterations in genetic material caused by teratogens.

ANS: A

24. Developmental disorders can result from all the following EXCEPT:
- a. exposure to radiation.
 - b. mercury in foods and water.
 - c. drugs and alcohol.
 - d. folic acid.

ANS: D

25. Genes located at the same site on a pair of homologous chromosomes that are also matched for function are called:

- a. alleles.
- b. genotypes.
- c. autosomes.
- d. phenotypes.

ANS: A

26. Which of the following can easily pass through the placental barrier?

- a. Many viruses
- b. Some heavy metals
- c. Certain chemicals
- d. All of the above

ANS: D

27. The term proteomics refers to the study of:

- a. DNA sequences with unknown functions.
- b. gene sequences in individual chromosomes.
- c. the proteins resulting from activation of specific genes.
- d. identifying certain base pairs in DNA.

ANS: C

28. The most invasive prenatal screening test for fetal abnormalities is:

- a. ultrasonography.
- b. amniocentesis.
- c. X-ray.
- d. blood tests.

ANS: B

29. Which of the following can be detected using amniotic fluid?

- a. Chromosomal abnormalities
- b. Metabolic disorders
- c. Certain structural abnormalities
- d. All the above

ANS: D

30. Blood tests are performed on neonates primarily to:

- a. determine need for immediate surgical correction of anomalies.
- b. identify disorders requiring immediate treatment.
- c. identify the presence of any inherited disorders.
- d. rule out the presence of any infection.

ANS: B

31. When genetic influences combine with environmental factors to cause an abnormality, the result is called a:

- a. chromosomal disorder.
- b. developmental disorder.
- c. multifactorial disorder.
- d. single-gene disorder.

ANS: C

32. The cellular division process that produces the chromosomes that are in the sperm and ova is called:

- a. meiosis.
- b. mitosis.
- c. organogenesis.
- d. polysomy.

ANS: A

Chapter 7: Hemodynamic Disorders MULTIPLE CHOICE

1. What are the four types of shock?
 - a. Multiple organ, cardiogenic, renal, and anaphylactic
 - b. Cardiogenic, renal, hypovolemic, and septic
 - c. Renal, hypervolemic, obstructive shock, and neurogenic
 - d. Hypovolemic, cardiogenic, obstructive shock, and vasogenic ANS: D

The four large categories of shock are hypovolemic (low-circulating volume), cardiogenic (low-cardiac output), obstructive (occluded vascular pathway), and vasogenic (massive vasodilation).

2. Although several life-supporting systems of the body are involved in the pathophysiologic characteristics of shock, shock itself results from failure of which

system?

- a. Circulatory
- b. Endocrine
- c. Neurologic
- d. Respiratory ANS: A

When the heart fails as a pump, the lack of tissue perfusion follows and deprives all the body's cells of oxygen and the removal of wastes.

3. A nurse is assessing a patient who is in shock. What should the nurse be aware that one common sign will be, regardless of the cause of the shock?
 - a. The skin is cool and dry with cyanotic nail beds.

- b. The skin is cool and moist with cyanotic nail beds.
- c. The nail beds are reddened, and the skin is moist and warm.
- d. The nail beds are reddened, and the skin is dry and warm. ANS: B

Venous blood pools in the extremities of the fingers as a result of the lack of adequate perfusion of tissues, which makes the skin cool and moist from a lack of oxygen and waste exchanges.

4. What should a nurse assessing a patient in the progressive stage of shock expect to find?
- a. Bounding pulse, decreased respirations, and decreased blood pressure
 - b. Bounding pulse, shallow respirations, and significantly increased blood pressure
 - c. Thready pulse and deep respirations with decreased blood pressure
 - d. Thready pulse and irregular respirations with increased blood pressure ANS: C

When the heart fails as a pump, the pulse is weak; the respirations increase in an effort to decrease the carbon dioxide level; and, with less volume being pumped, the blood pressure falls.

5. What should a nurse expect of a patient's respirations caused by the falling blood pressure and impaired blood circulation during the refractory stage of shock?
- a. Rapid and deep
 - b. Rapid and shallow
 - c. Slow and deep
 - d. Slow and shallow ANS: D

During the refractory stage of shock, as the body systems are failing, the respirations become slow, shallow, and irregular. Death is imminent at this stage.

6. A licensed practical/vocational nurse (LPN/LVN) is assisting in developing a nursing care plan for a patient in shock. Which nursing diagnosis should be included?
- a. Increased cardiac output, related to hypertension
 - b. Increased cardiac output, related to hypotension
 - c. Decreased cardiac output, related to hypovolemia
 - d. Decreased cardiac output, related to hypertension ANS: C

Decreased amount of blood is ejected from the heart because of a decreased volume of fluid in the intravascular compartment.

7. How does the intraaortic balloon pump (IABP) assist a patient who is in cardiogenic shock to increase cardiac output?

- a. Provides generalized vasoconstriction
 - b. Inflates during the diastole phase
 - c. Constricts the vena cava
 - d. Adds hypertonic fluid to the circulating volume
- ANS: B

The IABP inflates during diastole (relaxation) phase and deflates during the systole (constriction) phase, which improves cardiac output.

8. A nurse is explaining to a family member the pathophysiologic characteristic of vasogenic shock. What information should the nurse include?

- a. The intravascular compartment fills beyond capacity, allowing fluid to leak out, compressing vital organs.
- b. The circulating volume causes excessive constriction of the vessels, causing blood pooling.
- c. Widely fluctuating blood pressures stimulate vascular collapse, causing severe alterations in peripheral perfusion.
- d. Although the circulating volume is intact, excessive vascular dilation causes drastic drops in the blood pressure.

ANS: D

Blood pooling from dilated vessels drops the blood pressure without loss of circulating volume.

9. A nurse is caring for a patient who has a cervical spine injury and assesses progressive hypotension. What does this signify?

- a. Anaphylaxis
 - b. Respiratory alkalosis
 - c. Multiple organ dysfunction syndrome (MODS)
 - d. Neurogenic shock
- ANS: D

Gradually decreasing blood pressure in a person with a spinal injury is an indicator of neurogenic shock related to the parasympathetic stimulation, which causes generalized vasodilation.

10. While shopping in the mall, a nurse sees a lady suddenly fall to the floor. On immediate assessment, the nurse realizes she is not in cardiac arrest and has no need for cardiopulmonary resuscitation (CPR). What should be the immediate actions by the nurse?

- a. Check the pulse and respirations and call for a blood pressure cuff.
- b. Check the pulse, respirations, skin color, and temperature.
- c. Call for help and check the pulse, respiration, and mental status.
- d. Ask someone to help place large blankets or coats under her legs and trunk. ANS: C

Shock treatment requires expert medical implementation. However, the nurse may provide first-line support until such help arrives. Circulatory collapse has to be monitored first; pulse, respiration, and mental status should be assessed to evaluate whether oxygen is reaching the brain.

11. A nurse is explaining the rationale behind the use of Hypothermic devices to a patient's family. When relaying information what explanation should the nurse provide when asked why this garment provides compression to the legs and abdomen?

- a. To help restore cellular perfusion
- b. Decreases internal hemorrhage
- c. Cools the patient to create less metabolic demand
- d. Applies pressure during the systole phase and relax pressure during the diastole phase ANS: A

Hypothermic devices compress the vessels in the legs and abdomen to increase both blood pressure and cardiac output.

12. A nurse is speaking to the family of a 65-year-old Latino woman. To whom should the nurse address most of the conversation to keep in mind cultural considerations?

- a. 66-year-old husband
- b. Entire family, in general
- c. 42-year-old daughter (oldest child)
- d. 40-year-old son (only son) ANS: A

Many older Latino families recognize the older men in the family, the father or husband, as the decision makers.

13. In treating a person outside of a medical facility, a nurse knows that immediate circulatory support for the vital organs must begin as quickly as possible because, without oxygen, the brain cells will begin to die in how many minutes?

- a. 4
- b. 6
- c. 14
- d. 24 ANS: A

Brain cells must have oxygen to live; they are very sensitive to lack of oxygen and begin to die in 4 minutes.

14. The stages of shock proceed in a definite sequence. What is the correct order?

- a. Progressive, compensatory, refractory
- b. Refractory, progressive, compensatory
- c. Compensatory, progressive, refractory
- d. Distributive, compensatory, refractory ANS: C

Understanding the sequence of the progression of shock allows the medical team to plan and implement the correct steps to reverse it.

15. What causes the cool, damp skin of patients in compensatory shock?

- a. Constriction of peripheral blood vessels because of the shunting of blood to the vital organs
- b. Action of the antidiuretic hormone released in shock by the adrenal glands
- c. Decreasing levels of arterial carbon dioxide, which are pooling in the arms and legs
- d. Activation of the baroreceptors in the renal arteries ANS: A

When overall blood volume is reduced in shock, the remaining blood volume is shunted to vital organs.

16. Which position enhances cerebral blood flow to counteract the symptoms of compensatory shock?

- a. Fowler
- b. Trendelenburg

- c. Gravity neutral
- d. Side lying ANS: B

The Trendelenburg position, with the patients head down, allows gravity to pull blood to the cerebrum. All other positions are ineffective for improving cerebral perfusion.

17. A nurse is administering heparin, subcutaneous twice daily, to a patient in cardiogenic shock. What is the expected action of this drug?

- a. Inotropic to improve cardiac contractibility
- b. Anticoagulant to prevent blood clots
- c. Antidysrhythmic to restore normal cardiac contractibility
- d. Vasopressor to increase blood pressure ANS: B

Cardiogenic shock may produce clots because of blood stasis, and the heparin will delay clot formation.

18. Which nursing interventions will best assist a patient cope with decreased cardiac output?

- a. Dovetailing nursing care tasks allows rest periods for the patient.
- b. Maintaining enough cover prevents the patient from shivering.
- c. Turning, coughing, deep breathing, and ambulating the patient every 2 hours reduce the risk of embolism.
- d. Analgesics should be administered cautiously. ANS: A

Care should be designed to reduce the metabolic demands on the failing heart. Shivering and physical activity increase the demands; analgesics may reduce output more.

19. One of the most important assessments that a nurse makes is to check urine output. Which value objectively validates minimal acceptable renal perfusion for the average- size person?

- a. 0.5 mL/kg/hr
- b. 0.5 mL/lb/hr
- c. 1 mL/lb/hr
- d. 0.2 mL/kg/hr ANS: A

When the kidneys produce at least 0.5 mL/kg/hr of urine, the indication is that the vital organs are also being perfused.

20. A patient is in the compensatory stage of shock. What symptoms displayed by the patient would indicate the need to implement immediate nursing action?

- a. Irritable and restless
- b. Listless and confused
- c. Unconscious
- d. Anxious and fearful

ANS: A

An irritable and restless patient is at definite risk for falling or hurting him- or herself.

21. A patient in the progressive stage of shock is receiving medication to manage the symptoms. What is the desired effect of the medication?

- a. Increase in cardiac output
- b. Decrease in blood pressure
- c. Decrease in urine output
- d. Lower temperature

ANS: A

Increasing cardiac output requires aggressive action to prevent MODS. Dopamine increases heart contractibility and rate.

22. A family member asks why her father, who is being treated for cardiogenic shock, needs parenteral feeding because he is capable of eating small amounts. What is the best response by the nurse?

- a. Parenteral feedings reduce the risk of constipation.
- b. Parenteral feedings meet the patients hypermetabolic needs.
- c. Parenteral feedings are more convenient and less time consuming.
- d. Parenteral feedings decrease the hazard of infection.

ANS: B

Hyperbolic nutritional needs of the person in shock are best met by parenteral feedings, which guarantee adequate calories.

23. A patient's family voices concern regarding the purpose of some of the interventions for systemic inflammatory response syndrome (SIRS). What explanation by the nurse is most appropriate when explaining the rationale of treatment?

- a. Applying a MAST garment is mandatory to promote and conserve body heat.
- b. Inserting an IABP is required to decrease fluid leaking into the extravascular space.
- c. Maintaining strict isolation is vital to prevent an overlying bacterial infection.
- d. Aggressive treatment is necessary to support the multiple failing organs. ANS: D

SIRS is the final and possibly fatal stage of shock. The body's defenses are supported aggressively and rapidly. MAST and IABP are measures used to increase circulating volume. Isolation is not indicated.

24. An older Japanese patient in progressive shock lingers on the verge of death. What intervention does the patient's cultural background dictate?

- a. Allow any and all cultural rituals at the bedside.
- b. Encourage the family to talk to the patient who can be comforted by their familiar voices.
- c. Restrict the ministrations of the folk healer.
- d. Suggest that small children not see the patient. ANS: B

Japanese cultural behavior for the dying patient advocates that the entire family be in attendance and take part in the nursing care.

COMPLETION

25. A nurse explains that pericardial tamponade and pulmonary embolus can place the patient at risk for shock.

ANS:

obstructive

Obstructive shock can result from pericardial tamponade or pulmonary embolus.

26. A nurse explains that when shock forces the body into anaerobic metabolism, organ damage is caused by a product of that metabolism, which is _____.

ANS:

lactic acid

Lactic acid, a by-product of anaerobic metabolism, can cause organ damage in the patient who is in shock.

27. A nurse explains that the minimal acceptable hourly urine output for a patient in shock who weighs 220 lb is .

ANS:

5 mL

220 lb \div 2.2 lb = 10 kg; 0.5 mL/kg/hr \times 10 = 5 mL.

28. A nurse is aware that immobility and insertion of urinary catheters, although therapeutic, also places the patient at risk for .

ANS:

infection

The insertion of a Foley catheter and long-term immobility can cause infections.

Chapter 8: Environmental and Nutritional Pathology

MULTIPLE CHOICE

1. Which of the following is likely to result from lead poisoning?
 - a. Damage to the brain and peripheral nerves
 - b. Inflammation and fibrosis in the lungs
 - c. Various cancers
 - d. Displacement of oxygen from hemoglobin

ANS: A

2. During the development of hyperthermia, the state of heat exhaustion is indicated when:
 - a. body core temperature is very high.
 - b. skeletal muscle spasms occur.
 - c. hypovolemia and fainting occur.
 - d. the cool-down process is too rapid.

ANS: C

3. What is/are signs of hypothermia?
 - a. Systemic vasodilation
 - b. Lethargy and confusion
 - c. Nausea and cramps
 - d. Rapid but strong pulse

ANS: B

4. Which of the following types of cells are most likely to be damaged by exposure to radiation?
 - a. Bone and cartilage
 - b. Skeletal and smooth muscle
 - c. Peripheral and central neurons
 - d. Epithelial tissue and bone marrow

ANS: D

5. Which of the following events would most likely cause a person to faint and experience difficulty breathing?

- a. Exposure to gamma rays
- b. Eating fish containing mercury
- c. An insect sting
- d. Inhalation of asbestos particles

ANS: C

6. Bites and stings cause disease in which three ways?

- a. Injection of toxins, transmission of infectious agents, or allergic reactions
- b. High fever and chills, transmission of infectious agents, or nausea and vomiting
- c. Bone marrow damage, extensive skin rashes, or allergic reactions
- d. Injection of neurotoxins, transmission of infectious agents, or kidney damage

ANS: A

7. Which statement applies to food poisoning?

- 1. It results from consuming contaminated food and water.
 - 2. It often causes gastroenteritis, including vomiting and diarrhea.
 - 3. Outbreaks occur frequently in institutions.
 - 4. It is often caused by *Escherichia coli*, normally found in the stomach.
- a. 1, 3
 - b. 2, 4
 - c. 1, 2, 3
 - d. 1, 3, 4

ANS: C

8. Institutions frequently have outbreaks of infection associated with poultry products contaminated by:

- a. E. coli
- b. Salmonella
- c. Listeria
- d. HIV

ANS: B

9. The amount of radiation absorbed by the body is measured in rads, or .
- a. radiation-absorbed doses.
 - b. roentgen-absorbed doses.
 - c. radiation-emission number.
 - d. radiation ionizing rate.

ANS: A

10. The term pica refers to:
- a. the consumption of nonfood substances such as clay.
 - b. diffuse edema and degeneration of neurons in the brain.
 - c. particulates in the respiratory tract.
 - d. high levels of mercury in the blood.

ANS: A

11. Inhalants can be:
- a. a particulate such as asbestos.
 - b. gaseous, such as sulfur dioxide.
 - c. a solvent, such as benzene.
 - d. A, B, and C

ANS: D

12. Choose the correct effects of exposure of the ears to very cold temperatures:
- a. Loss of sensation

- b. Lethargy and confusion
- c. Vascular occlusions
- d. A and C

ANS: D

13. During the development of hyperthermia, the stage of heat stroke is marked by:

- a. shock and coma.
- b. hypervolemia and headache.
- c. diaphoresis and decreasing body temperature.
- d. dizziness, fainting, and headache.

ANS: A

14. Which of the following is a potential effect of a bite or sting?

- a. Immediate heart failure
- b. Anaphylaxis
- c. Severe nausea, vomiting, and diarrhea
- d. Bone marrow damage

ANS: B

15. Bites from both wild and domesticated animals may cause:

- a. anaphylaxis.
- b. Shigella outbreaks.
- c. rabies.
- d. severe pain and headache.

ANS: C

16. Which of the following is considered carcinogenic?

- a. Lead

- b. Carbon monoxide
- c. Inhaled particulates
- d. Mercury

ANS: C

17. Illness in institutions may be traced back to food handlers who:

- a. are carriers of pathogens.
- b. do not practice adequate hand-washing or sanitization.
- c. bring in pathogens from home or the community.
- d. A, B, and C

ANS: D

18. A common illness for tourists in developing countries is travelers diarrhea, often caused by:

- a. Salmonella
- b. Shigella
- c. E. coli
- d. Listeria

ANS: C

19. Radiation damage may occur from repeated exposure to:

- a. ultraviolet rays.
- b. X-rays.
- c. radioactive substances.

- d. A, B, and C

ANS: D

20. Two types of eye damage that can be caused by a laser beam are:

- a. chemical and structural.

- b. thermal burn and photochemical damage.
- c. tissue necrosis and vascular occlusions.
- d. formation of deep lesions in the optic nerve and in the sclera.

ANS: B

Chapter 9: Infectious and Parasitic Diseases

- 1. Human papillomavirus (HPV) infection is directly associated with:
 - A) testicular cancer.

- B) cervical dysplasia.
- C) genital herpes lesions.
- D) urinary tract infections.

2. The vaginal discharge characteristic of trichomoniasis is described as:

- A) thick cheesy.
- B) frothy green.
- C) fishy smelling.
- D) mucopurulent.

3. In men, urethral pain and a creamy yellow, bloody discharge from the penis is characteristic of the sexually transmitted infection:

- A) candidiasis.
- B) gonorrhea.
- C) chancroid.
- D) trichomoniasis.

4. A sexually transmitted infection that is caused by a microorganism with two morphologically distinct forms is:

- A) chancroid.
- B) candidiasis.
- C) *Trichomonas vaginalis*.
- D) Chlamydia.

5. Gonorrhea is caused by *Neisseria gonorrhoeae*, a gram-negative diplococcus, and is characterized by:

- A) purulent exudates.

- B) painful small vesicles.
- C) cauliflower-shaped lesions.
- D) persistent perianal itching.

6. Symptomatic tertiary syphilis is characterized by:

- A) necrotic gummas.
- B) chancre papules.
- C) condylomata lata.
- D) maculopapular rash.

7. As with other ulcerative sexually transmitted infections (STIs), genital herpes (herpes simplex virus type 2, HSV-2) increases the risk of:

- A) cervical cancer.
- B) HIV transmission.
- C) localized necrosis.
- D) urinary tract infection.

8. While in its dormant state, herpes simplex virus resides and replicates in the:

- A) local lymph nodes.
- B) subcutaneous tissue.
- C) mucous membrane.
- D) dorsal root ganglia.

9. A serious complication of chlamydial infections in women is:

- A) uterine cancer.
- B) fallopian tube damage.
- C) amenorrhea.
- D) nongonococcal urethritis.

10. The most likely vaginal infection to be spread through sexual contact is:
- A) candidiasis.
 - B) trichomoniasis.
 - C) vulvovaginitis.
 - D) bacterial vaginosis.
11. Which of the following phenomena is thought to underlie the decreased reported incidence of some STIs?
- A) Increased knowledge of the correct use of condoms
 - B) Increased public funding for health promotion activities
 - C) Decreased reporting of cases of certain STIs
 - D) Decreased numbers of sexual partners among young adults
12. A 22-year-old patient has presented to her primary care provider for her scheduled Pap smear. Abnormal results of this diagnostic test may imply infection with:
- A) human papillomavirus (HPV).
 - B) Chlamydia trachomatis.
 - C) Candida albicans.
 - D) Trichomonas vaginalis.
13. A female college student is distressed at the recent appearance of genital warts, an assessment finding that her care provider has confirmed as attributable to human papillomavirus (HPV) infection. Which of the following information should the care provider give the patient?
- A) There is a chance that these will clear up on their own without any treatment.
 - B) Its important to start treatment soon, so I will prescribe you pills today.

C) Unfortunately, this is going to greatly increase your chance of developing pelvic inflammatory disease.

D) I'd like to give you an HPV vaccination if that's okay with you.

14. Which of the following processes occurs in the pathophysiology of infection by herpes simplex virus (HSV)?

A) Replication of the squamous epithelium

B) Periods of latency in the nervous system

C) Inhibition of cell-mediated immunity

D) Production of exotoxins

15. Which of the following signs and symptoms is most clearly suggestive of primary genital herpes in a male patient?

A) Presence of purulent, whitish discharge from the penis

B) Emergence of hard, painless nodules on the shaft of the penis

C) Itching, pain, and the emergence of pustules on the penis

D) Production of cloudy, foul-smelling urine

16. Which of the following STIs is most likely to respond to treatment with the antibiotics tetracycline or doxycycline?

A) Human papillomavirus (HPV) infection

B) Herpes simplex virus type 2 (HSV-2) infection

C) Candidiasis

D) Lymphogranuloma venereum (LGV)

17. Which of the following assessment questions is most likely to address the causation of a woman's new case of candidiasis?

- A) Have you recently begun a new sexual relationship?
- B) Have you been on antibiotics recently?
- C) Have you noticed any new growths on your vagina in recent months?
- D) Do you use condoms during sexual activity?

18. Infected men may harbor _____ but they are always asymptomatic.

- A) *Trichomonas vaginalis*
- B) *Chlamydia trachomatis*
- C) *Neisseria gonorrhoeae*.
- D) *Treponema pallidum*

19. Which of the following events is associated with the primary stage of syphilis?

- A) Development of gummas
- B) Development of central nervous system lesions
- C) Palmar rash
- D) Genital chancres

20. Which of the following sexually transmitted infections (STIs) is associated with an increased risk of infertility in women due to asymptomatic infection?

- A) Chlamydial infection
- B) Herpes simplex virus
- C) Gonorrhea
- D) Syphilis

Answer Key

1. B

2. B
3. B
4. D
5. A
6. A
7. B
8. D
9. B
10. B
11. C
12. A
13. A
14. B
15. C
16. D
17. B
18. A
19. D 20. A

Chapter 10: Aging

MULTIPLE CHOICE

1. All of the following changes are associated with aging EXCEPT:
 - a. loss of elastic fibers.
 - b. decreased metabolic rate.
 - c. decreased secretion of all hormones.

- d. degenerative vascular changes.

ANS: C

2. Predisposing factors to osteoporosis in older women include all of the following EXCEPT:

- a. decreased estrogen secretion.
- b. genetic factors.
- c. sedentary lifestyle.

- d. decreased parathyroid hormone.

ANS: D

3. Lung expansion in the elderly may be reduced because of decreased:

- 1. tissue elasticity.
- 2. rib mobility.
- 3. control by the respiratory center.
- 4. skeletal muscle strength.

- a. 1, 3
- b. 1, 4
- c. 2, 3, 4
- d. 1, 2, 4

ANS: D

4. Vision in the elderly may be impaired when the eyeball becomes less elastic, thus preventing accommodation and resulting in:

- a. presbyopia.
- b. cataracts.
- c. glaucoma.
- d. damage to the retina.

ANS: A

5. What is a major factor leading to increased occurrence of cancer in the elderly?

- a. Widespread vascular degeneration
- b. Cumulative exposure to carcinogens
- c. Hereditary factors
- d. Increased immune surveillance

ANS: B

6. Senescence refers to the period of time when:

- a. mitosis is accelerated.
- b. apoptosis is reduced.
- c. aging changes become apparent.
- d. cell death exceeds cell replacement.

ANS: D

7. Theories about the causes of aging include:

- a. apoptosis.
- b. wear and tear.
- c. altered protein (amyloid) accumulation.
- d. All the above

ANS: D

8. Which of the following does NOT contribute to the increasing life span of the general population?

- a. Reduced cognitive and social activities
- b. Improved living conditions
- c. Better nutrition
- d. Advancements in health care

ANS: A

9. The term given to the change that occurs in women at around age 50 with the cessation of the menstrual cycle is:

- a. menopause.
- b. dysmenorrhea.
- c. amenorrhea.
- d. menarche.

ANS: A

10. Recommendations to reduce the risk factors and the progression of osteoporosis with aging include:

- a. reducing vitamin D intake.
- b. maintaining walking and weight-bearing exercise.
- c. increasing bone resorption.
- d. maintaining glucocorticoid therapy.

ANS: B

11. All are physiological changes that occur with aging EXCEPT:

- a. reduced skeletal muscle mass.
- b. degeneration of fibrocartilage in intervertebral discs in the spine.
- c. increased basal metabolic rate (BMR).
- d. reduced bladder capacity and incomplete bladder emptying.

ANS: C

12. With advancing age, the major change in the cardiovascular system involves:

- a. irregular impulse conduction in the heart.
- b. a reduced number of collagen fibers to support cardiac muscle.
- c. vascular degeneration, leading to arteriosclerosis and atherosclerosis.
- d. the heart valves becoming thin and weak.

ANS: C

13. Which of the following factors lead to delayed wound healing in the elderly?

1. Reduced rate of mitosis
2. Inadequate circulation
3. High risk of infection
4. More effective immune system

- a. 1, 2
- b. 1, 3
- c. 2, 4
- d. 1, 2, 3

ANS: D

14. Which of the following may develop in an elderly patient who has several medical problems and is markedly obese?

- a. Osteoarthritis and cardiovascular complications
- b. Decreased activity and diabetes mellitus
- c. Undesirable interactions with multiple prescription drugs and over-the-counter (OTC) medications
- d. A, B, and C

ANS: D

Chapter 11: Systemic Autoimmune Diseases

1. The mediators involved in type I hypersensitivity allergic responses are released from:
 - A) mast cells.
 - B) plasma cells.
 - C) monocytes.
 - D) arachidonic acid.

2. A genetically determined hypersensitivity to common environmental allergens causes reactions, such as:
 - A) atopic; urticaria.
 - B) autoimmune; diarrhea.
 - C) IgM-mediated; infections.
 - D) delayed; poison ivy rash:

3. Mismatched blood transfusion reaction with hemolysis of blood cells is an example of type II, mediated hypersensitivity reaction.

- A) T-cell
- B) antibody
- C) leukotriene
- D) complement

4. Type III hypersensitivity immune responses can be harmful when immune complex deposits in tissue activate that can directly damage area tissues.

- A) inflammation
- B) autoantibodies
- C) cytotoxic cells
- D) immunoglobulins

5. The mechanism by which humans recognize self-cells from non-self (antigens)-cells is

.

- A) autoimmunity
- B) self-tolerance
- C) non-self anergy
- D) immunocompatibility

6. Organ rejection is a complication of organ transplantation caused by recipient immune cells:

- A) destroying the host T cells.
- B) attack on the donor cells.
- C) combining with grafts HLA.
- D) being recognized as foreign.

7. The leading cause of death for people with HIV is opportunistic .

- A) leukemia
- B) tuberculosis

- C) pneumonia
- D) toxoplasmosis

8. Wasting syndrome, an AIDS-defining illness, is characterized by involuntary weight loss of at least 10% of baseline body weight in the presence of:

- A) diarrhea.
- B) hypermetabolism.
- C) weakness and fever.
- D) glucose intolerance.

9. The window period of HIV infection refers to the period of time between infection and:

- A) transmission.
- B) seroconversion.
- C) initial symptoms.
- D) antibody screening.

10. HIV-positive persons that display manifestations of laboratory category 3 or clinical category C are considered to have:

- A) zero viral load.
- B) seroconversion.
- C) complete remission.
- D) AIDS-defining illnesses.

11. Contact with poison ivy has resulted in intense pruritus, erythema, and weeping on a patient's forearm. Which of the following processes resulted in the patient's signs and symptoms?

- A) IgE-mediated mast cell degranulation
- B) Formation of antigen-antibody complexes

- C) Cytokine release by sensitized T cells
- D) Formation of antibodies against cell surface antigens

12. A patient with a long history of hay fever has recently begun a series of immunotherapy (allergy shots). How will this treatment potentially achieve a therapeutic effect?

- A) By blocking cytokine release from sensitized mast cells
- B) By preventing mast cells from becoming sensitized
- C) By causing T cells to be sequestered in the thymus for longer periods
- D) By stimulating production of IgG to combine with antigens

13. A patient with a diagnosis of cirrhosis has experienced an acute rejection of a donor liver. Which of the following cells is central to the rejection of the patients transplanted organ?

- A) Natural killer cells
- B) Mast cells
- C) T cells
- D) Neutrophils

14. A patient with a diagnosis of aplastic anemia has undergone allogenic bone marrow transplantation. Which of the following signs and symptoms would most clearly suggest the existence of graft-versus-host disease (GVHD)?

- A) Shortness of breath, audible crackles, and decreasing PaO₂
- B) Presence of a pruritic rash that has begun to slough off
- C) Development of metabolic acidosis
- D) Diaphoresis, fever, and anxiety

15. A patient has developed pericarditis after developing acute glomerulonephritis, a development that may be attributable to the presence of similar epitopes on group A, b-hemolytic streptococci and the antigens in the patients heart tissue. Which of the following has most likely accounted for this patients autoimmune response?

- A) Breakdown of T-cell anergy
- B) Release of sequestered antigens
- C) Superantigens
- D) Molecular mimicry

16. A 70-year-old female patient has had her mobility and independence significantly reduced by rheumatoid arthritis. Which of the following processes likely contributed to the development of her health problem?

- A) Delayed-type hypersensitivity (DTH) reaction
- B) Proliferation of cytotoxic T cells
- C) Failure of normal self-tolerance
- D) Deletion of autoreactive B cells

17. Which of the following would constitute a normal assessment finding in a neonate?

- A) Minimal or absent levels of IgA and IgM
- B) Absence of plasma cells in the lymph nodes and spleen
- C) Undetectable levels of all immunoglobulins
- D) Absence of mature B cells with normal T-cell levels and function

18. A patient was diagnosed as HIV positive several years ago. Which of the following blood tests is most clinically useful for determining the stage and severity of her disease?

- A) Plasma levels

- B) CD4+ cell counts
- C) Viral load
- D) White blood cell count with differential

19. A patient has been admitted to the hospital for the treatment of HIV infection, which has recently progressed to overt AIDS. Which of the following nursing actions should the nurse prioritize when providing care for this patient?

- A) Frequent neurologic vital signs and thorough skin care
- B) Hemodynamic monitoring and physical therapy
- C) Careful monitoring of fluid balance and neurologic status
- D) Astute infection control and respiratory assessments

20. Shortly after being diagnosed with HIV, a patient has begun highly active antiretroviral therapy (HAART). What is the primary goal of the patients drug regimen?

- A) To limit the latent period of HIV
- B) To slow the progression of the disease
- C) To minimize opportunities for transmission
- D) To prevent seroconversion

Answer To prevent seroconversion

Key

- 1. A
- 2. A
- 3. B
- 4. A

- 5. B
- 6. B
- 7. B
- 8. A
- 9. B
- 10. D
- 11. C
- 12. D
- 13. C
- 14. B
- 15. D
- 16. C
- 17. A
- 18. B
- 19. D
- 20.

ChapterB

12: Sepsis

- 1. What would the nurse identify as the primary purpose for the administration of intravenous (IV) crystalloid fluids in the patient with hypovolemic shock?
 - A) Decrease myocardial oxygen demand.
 - B) Maximize oxygen-carrying capability.
 - C) Increase capillary permeability.

D) Restore circulating volume.

2. The nurse is administering an intravenous antibiotic infusion over 30 minutes for a patient with cellulitis of the left lower extremity. The patient states, I am itching all over and am having trouble swallowing. What priority interventions by the nurse are necessary for this patient?

Select all that apply.

- A) Stop the antibiotic infusion.
- B) Administer subcutaneous epinephrine.
- C) Administer diphenhydramine (Benadryl) IV.
- D) Switch to amoxicillin by mouth.
- E) Administer Ativan for the patient's anxiety.

3. A nursing assessment of a patient with hypovolemic shock is most likely to reveal what assessment findings? Select all that apply.

- A) Tachycardia
- B) Oliguria
- C) Disoriented to time and place
- D) Diuresis
- E) Bradycardia
- F) Hypotension

4. The nurse is assigned to the care of a patient in the ICU who is in cardiogenic shock. What priority nursing intervention is necessary to conserve myocardial energy and decrease workload of the heart?

- A) Lactated Ringers at 150 mL/hr
- B) Morphine sulfate 4 mg IV
- C) Furosemide (Lasix) 80 mg IV
- D) Epinephrine 1:1,000, 0.3 mL IV

5. The nurse in the ICU is assigned to care for a patient with septic shock. What nursing interventions are necessary to prevent malnutrition and optimize cellular function in this patient?

- A) Administration of crystalloid solutions IV
- B) High calorie, low protein diet
- C) Enteral feedings
- D) Administration of multivitamins in the IV fluid

6. In developing the discharge plan for a patient who was treated in the hospital for anaphylactic shock related to a nonsteroidal anti-inflammatory (NSAID) allergy, what would be the most important information for the nurse to include?

- A) Adhere to dietary restrictions.
- B) Follow up in one month with the physician.
- C) Check labels of over-the-counter medications prior to taking.
- D) Have blood pressure checked on a regular basis.

7. The nurse is assigned to a patient in the ICU who is on a ventilator for exacerbation of chronic obstructive pulmonary disease. What intervention by the nurse can prevent the development of multiple organ dysfunction syndrome?

- A) Suctioning the patient every 2 hours
- B) Enteral feedings
- C) Oral care every 2 hours
- D) Administration of total parenteral nutrition

8. The nurse understands that which of the following patients in the hospital is at the greatest risk for cardiogenic shock?

- A) The 76-year-old male patient with a history of diabetes mellitus and previous myocardial infarction (MI)
- B) The 42-year-old male who has mitral valve prolapse with a left ventricular ejection fraction of 65%
- C) The 52-year-old female with a recent small anteroseptal wall MI
- D) The 84-year-old female with hypertension

9. The patient in the ICU is being treated for left lower lobe pneumonia. What assessment findings by the nurse may indicate that the patient is developing systemic inflammatory response syndrome (SIRS)? Select all that apply.

- A) White blood cell count of 24,000/mm³
- B) Respiratory rate of 24
- C) Blood pressure of 100/60
- D) Heart rate 96
- E) Atrial fibrillation

10. The nurse is caring for a patient with hypovolemic shock who has had 6 units of packed red blood cells. Which of the following values would alert the nurse to a complication related to the administration of blood?

- A) Potassium level of 6.0
- B) Hemoglobin of 13
- C) Sodium level of 134
- D) pH 7.37

11. A patient in the critical care unit has developed shock. What symptom or symptom group does the nurse expect to assess in any type of shock?

- A) Tissue hypoxia
- B) Massive vasodilation
- C) Extreme blood loss
- D) Presence of enterotoxins

12. A critically ill patient has developed shock. What nursing assessment result indicates a normal compensatory mechanism?

- A) Reduction of respiratory depth
- B) Increase in systemic vascular resistance (SVR)
- C) Decrease in circulating catecholamines
- D) Increased stimulation of baroreceptors

13. The patient is in hypovolemic shock from traumatic massive blood loss and is tachypneic and tachycardic, with cool, clammy skin and weak and thready pulses. What additional assessment parameter would the nurse be least likely to find during stage one or early compensated shock?

- A) Hypotension
- B) Increased urine output
- C) Estimated blood loss greater than 30%
- D) Mild altered mental status

14. A patient is being treated for severe hypovolemic shock. Based on the primary treatment goal, what nursing intervention has the highest priority?

- A) Frequent measurement of vital signs
- B) Management of mechanical ventilation
- C) Rapid intravenous fluid administration
- D) Insertion of urinary drainage catheter

15. The patient has developed cardiogenic shock and is decompensating. What pattern of hemodynamic alterations does the nurse expect to find?

- A) High preload, high afterload, low cardiac index, tachycardia
- B) Low preload, low afterload, high cardiac index, bradycardia
- C) Low preload, high afterload, high cardiac index, tachycardia
- D) High preload, low afterload, high cardiac index, tachycardia

16. The patient is in decompensated cardiogenic shock. What collaborative intervention best addresses the central cause of cardiogenic shock?

- A) Mechanical ventilation
- B) Hemodynamic monitoring
- C) Pharmacologic sedation

D) Intravenous nitrate infusion

17. For a patient in cardiogenic shock, the physician has ordered an intravenous continuous infusion of dobutamine hydrochloride. What nursing assessment result demonstrates achievement of therapeutic goals?

- A) Blood pressure 120/70 mm Hg
- B) Urine output 30 to 40 mL/hr
- C) Arterial oxygen saturation 60%
- D) Heart rate 110 to 120 bpm

18. A patient is in shock and is exhibiting low blood pressure, low systemic vascular resistance (SVR), peripheral edema, pulmonary wheezing, tachycardia, and nausea and vomiting. What precipitating event does the nurse expect for this group of symptoms?

- A) Acute myocardial infarction
- B) Bacterial infectious illness
- C) Recent seafood meal
- D) Massive fluid loss

19. The patient has been diagnosed with shock secondary to an antigenantibody reaction. What collaborative intravenous intervention has the highest priority?

- A) Dobutamine
- B) Red blood cells
- C) Antimicrobials
- D) Epinephrine

20. A critically ill patient has developed septic shock. What pattern of hemodynamic values does the nurse expect to find?

- A) Low preload, high afterload, low cardiac index, tachycardia
- B) Low preload and afterload, high cardiac index, tachycardia
- C) High preload and afterload, low cardiac index, tachycardia
- D) Normal preload, low afterload, normal cardiac index, bradycardia

21. A leading cause of death in critically ill patients is sepsis and septic shock. What nursing intervention is most directed toward preventing this life-threatening complication?

- A) Strict adherence to hand hygiene protocols
- B) Prompt initiation of isolation protocols
- C) Patient and family preventive teaching
- D) Sterile technique for care of intravenous sites

22. A patient has been diagnosed with septic shock and is receiving intravenous fluid resuscitation along with other therapies. What nursing assessment best indicates improvement in tissue perfusion?

- A) Mean arterial pressure 65 to 70 mm Hg
- B) SvO₂ 80% to 90%
- C) Skin warm and dry
- D) Arterial bicarbonate ion 22 to 24 mEq/L

A critically ill patient who is mechanically ventilated and has developed shock is in need of

23. nutritional support. What route is preferred for this patient?

- A) Oral
- B) Enteral
- C) Parenteral
- D) Variable

A patient in shock has developed systemic inflammatory response syndrome (SIRS). What is

24. the most likely type of shock resulting in SIRS?

- A) Hypovolemic
- B) Septic
- C) Cardiogenic
- D) Any shock

A critically ill patient has developed multiple organ dysfunction syndrome (MODS). What

25. should the nursing goal for management of the patient with impending MODS center on?

- A) Early normalization of SvO₂ and acidbase balance
- B) Use of intravenous drotrecogin alfa (Xigris)
- C) Specific organ system support
- D) General intensive nursing care

Answer Key

13. A

14. C

15. A

16. D

17. B

18. C

19. D

20. B

21. A

22. D

23. B

24. D

25. A

Chapter 13: Obesity and Diabetes Mellitus

1. Type 1 diabetes mellitus results from destruction of the pancreatic beta cells by two mechanisms. The mechanism for type 1A diabetes is destruction.
 - A) genetic
 - B) resistant
 - C) idiopathic
 - D) autoimmune
2. The metabolic abnormalities that lead to type 2 diabetes include:
 - A) chronic overeating.
 - B) insulin resistance.
 - C) acute pancreatitis.
 - D) recurrent hypoglycemia.
3. Which test provides a way to monitor fluctuations of blood glucose levels over the previous 6 to 12 weeks?
 - A) Glucose tolerance test
 - B) Fasting blood glucose
 - C) Capillary blood glucose
 - D) Glycosylated hemoglobin

4. Diabetic ketoacidosis (DKA) more commonly occurs in patients with type 1 diabetes, when the lack of insulin leads to the mobilization of _____ that causes excess ketone production by the liver.

- A) cortisol
- B) fatty acids
- C) potassium
- D) bicarbonate

5. Factors that contribute to the severe hyperglycemia that precipitates hyperglycemic hyperosmolar state (HHS) include:

- A) fluid retention and edema.
- B) thromboembolism formation.
- C) insulin overdose.
- D) glycosuria and water loss.

6. A change in the circadian rhythm for glucose tolerance and an inappropriate increase in counterregulatory hormones can lead to _____ in diabetics.

- A) hypoglycemia
- B) Somogyi effect
- C) hyperinsulinemia
- D) dawn phenomenon

7. In people with type 1 diabetes, the beneficial effects of exercise also carry an increased risk of:

- A) rapid weight loss.
- B) respiratory disorders.
- C) rebound hyperglycemia.
- D) profound hypoglycemia.

8. One of the first renal manifestations of diabetic nephropathy is:

- A) microalbuminuria.

- B) oliguria.
- C) hypertension.
- D) hyperlipidemia.

9. Diabetic retinopathy, the leading cause of acquired blindness in the United States, is characterized by retinal:

- A) glaucoma.
- B) hemorrhages.
- C) dehydration.
- D) infections.

10. Impaired and delayed healing in a person with diabetes is caused by chronic complications that include:

- A) ketoacidosis.
- B) Somogyi effect.
- C) fluid imbalances.
- D) chronic neuropathies.

11. A hospital patient with a diagnosis of type 1 diabetes has been administered a scheduled dose of regular insulin. Which of the following effects will result from the action of insulin?

- A) Promotion of fat breakdown
- B) Promotion of glucose uptake by target cells
- C) Promotion of gluconeogenesis and protein synthesis
- D) Initiation of glycogenolysis

12. A patient with longstanding type 2 diabetes is surprised at his high blood sugar readings while recovering from an emergency surgery. Which of the following factors may have contributed to the patients inordinately elevated blood glucose levels?

- A) The tissue trauma of surgery resulted in gluconeogenesis.
- B) Illness inhibited the release and uptake of glucagon.
- C) The stress of the event caused the release of cortisol.
- D) Sleep disruption in the hospital precipitated the dawn effect.

13. The results of a 44-year-old obese mans recent diagnostic workup have culminated in a new diagnosis of type 2 diabetes. Which of the following pathophysiologic processes underlies the patients new diagnosis?

- A) Beta-cell exhaustion due to long-standing insulin resistance
- B) Destruction of beta cells that is not attributable to autoimmunity
- C) T-lymphocytemediated hypersensitivity reactions
- D) Actions of insulin autoantibodies (IAAs) and islet cell autoantibodies (ICAs)

14. Which of the following assessment findings of a male patient constitutes a criterion for a diagnosis of metabolic syndrome?

- A) The patient states that he does less than 30 minutes of strenuous physical activity each week.
- B) The patients resting heart rate is typically 85 to 95 beats per minute.
- C) The patients blood pressure is consistently in the range of 140/90 mm Hg.
- D) The patient has a family history of type 2 diabetes.

15. Which of the following pregnant women likely faces the greatest risk of developing gestational diabetes?

- A) A patient who was diagnosed with placenta previa early in her pregnancy.
- B) A patient who is gravida five (in her fifth pregnancy)
- C) A patient who has hypertension and elevated triglycerides
- D) A patient who is morbidly obese

16. A patient's primary care provider has ordered an oral glucose tolerance test (OGTT) as a screening measure for diabetes. Which of the following instructions should the patient be given?

- A) The lab tech will give you a sugar solution and then measure your blood sugar levels at specified intervals.
- B) You'll have to refrain from eating after midnight and then go to the lab to have your blood taken first thing in the morning.
- C) They'll take a blood sample and see how much sugar is attached to your red blood cells.
- D) You can go to the lab at any time; just tell the technician when you last ate before they draw a blood sample.

17. Which of the following insulin-administration regimens is most likely to result in stable blood glucose levels for a patient with a diagnosis of type 1 diabetes?

- A) One large dose of long-acting insulin each day before breakfast
- B) Intermediate-acting insulin at 8:00 AM and 8:00 PM with rapid-acting insulin before each meal
- C) Six to eight small doses of rapid-acting insulin each day, with capillary monitoring before each

D) Long-acting insulin twice daily (breakfast and bedtime), with intermediate-acting insulin in the afternoon

18. A hospital patient has been complaining of increasing fatigue for several hours and his nurse has entered his room to find him unarousable. The nurse immediately checked the patients blood glucose level, which is 22 mg/dL (1.2 mmol/L). The nurse should prepare to administer which of the following?

A) A snack that combines simple sugars, protein, and complex carbohydrates

B) A 50% glucose solution intravenously

C) Infusion of rapid-acting insulin

D) Oral solution containing glucagon and simple sugars

19. A diabetic patients most recent blood work indicated a decreased glomerular filtration rate and urine testing revealed microalbuminuria. Which of the following self-care measures should the patients care team suggest to the patient?

A) Use of over-the-counter diuretics

B) Increased fluid intake

C) Decreased oral sugar intake

D) Measures to lower blood pressure

20. Which of the following comorbidities represents the greatest risk for the development of foot ulcers in a diabetic patient?

A) Distal symmetric neuropathy

B) Previous incidents of diabetic ketoacidosis

C) Diabetic nephropathy

D)

Answer Autonomic neuropathy

Key

1. D

2. B

3. D

4. B

5. D

6. D

7. D

8. A

9. B

10. D

11. B

12. C

13. A

14. C

15. D

16. A

17. B

18. B

19. D

20. A

Chapter 14: The Pathology of Pregnancy

MULTIPLE CHOICE

1. What is the usual time period between the first day of the last menstrual period and the time of birth?
 - a. 38 weeks
 - b. Termed the gestation period
 - c. Referred to as gravidity
 - d. The embryonic period

ANS: B

2. Common effects of the expanding uterus during pregnancy include all of the following EXCEPT:
 - a. compression of the urinary bladder.
 - b. restricted inspiratory volume.
 - c. low blood pressure.
 - d. varicose veins.

ANS: C

3. Which of the following indicates development of pregnancy-induced hypertension?
 - a. Proteinuria, edema, and weight gain
 - b. Persistent blood pressure measuring above 140/90
 - c. Vaginal bleeding
 - d. Blood clots forming in the legs

ANS: B

4. What is the usual cause of hemolysis of fetal erythrocytes during pregnancy?
 - a. The mother's blood is Rh negative and the fetus is Rh positive.
 - b. The parents differ in blood type.
 - c. The mother receives Rh immunoglobulin early in the second pregnancy.

- d. Fetal antibodies enter the maternal circulation.

ANS: A

5. What is the likely cause of painless, bright red, vaginal bleeding during the last trimester?

- a. Ectopic pregnancy
- b. Abruptio placentae
- c. Disseminated intravascular coagulation (DIC)
- d. Placenta previa

ANS: D

6. Adolescent pregnancy is often considered high risk because of:

- a. inadequate prenatal care.
- b. poor nutrition and lack of vitamin supplements.
- c. iron deficiency anemia.
- d. All of the above

ANS: D

7. Which of the following is a serious potential complication of abruptio placentae indicated by low serum levels of clotting factors?

- a. Severe hypertension
- b. Disseminated intravascular coagulation (DIC)
- c. Jaundice
- d. Thromboembolism

ANS: B

8. The term primigravida refers to:

- a. length of time since the first day of the last menstrual period.
- b. a woman who is pregnant for the first time.
- c. estimated date of delivery.

- d. withdrawal of a small amount of amnionic fluid.

ANS: B

9. During which time period do teratogens cause major developmental damage to organs?

- a. First week following fertilization
- b. First 2 months
- c. Any time up to 6 months
- d. During labor and delivery

ANS: B

10. Diagnosis of pregnancy is confirmed through elevated serum levels of:

- a. hCG.
- b. testosterone.
- c. AFP.
- d. aldosterone.

ANS: A

11. Edema and congestion normally develop in many tissues during pregnancy as a result of:

- a. reduced kidney function.
- b. decreased serum albumin.
- c. increased blood volume.
- d. increases in blood pressure.

ANS: C

12. Which of the following statements applies to eclampsia?

- a. Elevated blood pressure returns to normal after delivery.
- b. Kidney and liver function remain normal.
- c. It commonly develops with ectopic pregnancies.

- d. Blood pressure is very high and seizures may occur.

ANS: D

13. Gestational diabetes in the mother usually results in:

- a. normal maternal blood glucose levels until the last month of pregnancy.
- b. no further indication of diabetes mellitus following delivery.
- c. delivery of a high birth-weight infant.
- d. no additional complications for the infant or mother.

ANS: C

14. Place the following statements regarding Rh incompatibility in the correct sequence. Not all choices are included in each answer.

- 1. Hemolysis of fetal erythrocytes and anemia occur.
 - 2. Maternal Rh-negative cells enter fetal blood.
 - 3. Fetal Rh-positive cells enter maternal blood.
 - 4. Elevated serum bilirubin levels develop in the fetus.
 - 5. Antibodies to Rh-positive cells form in maternal blood.
 - 6. Maternal Rh antibodies enter the fetal circulation.
- a. 3, 1, 4, 6, 5
 - b. 6, 2, 4, 3, 5, 1
 - c. 3, 5, 6, 1, 4
 - d. 2, 3, 6, 1, 4

ANS: C

Chapter 15: The Amyloidoses

1. Which of the following would be the best test to confirm whether this patient has primary systemic (AL) amyloidosis?

- A. Congo red staining of fat pad aspirate
- B. Serum and urine protein electrophoresis with immunofixation
- C. Echocardiography
- D. κ/λ Immunostaining of tissue amyloid deposits
- E. Transthyretin mutation analysis

ANS,(D) κ/λ Immunostaining of tissue amyloid deposits. When AL-amyloidosis is suspected, a tissue biopsy is required to establish the diagnosis. Congo red staining of a fat pad aspirate would reveal amorphous tissue deposits that appear pink using standard light microscopy and apple green under polarized light, but this test does not distinguish between AL, acquired, and familial/inherited subtypes of amyloidosis. In AL- amyloidosis, a plasma cell dyscrasia, the amyloid fibrils are composed of monoclonal light chains (usually λ). Performing both serum and urine protein electrophoresis with immunofixation reveals a monoclonal light chain in over 90% of patients with AL- amyloid but does not eliminate the need for κ/λ immunostaining of tissue amyloid deposits. Without confirming the Ig origin of the amyloid, one cannot rule out the possibility of another type of amyloidosis with an incidentally discovered monoclonal gammopathy of uncertain significance.¹ An inherited form of predominantly cardiac amyloidosis resulting from a specific transthyretin mutation has been described in older African Americans. In this Caucasian patient, this diagnosis is unlikely.

2. After the diagnosis of AL-amyloidosis is confirmed, the patient undergoes an echocardiogram, which reveals a thickened ventricular septal wall, impaired diastolic relaxation, and a left ventricular ejection fraction of 35%. Which of the following would be the best choice of initial therapy?

- A. 5-Drug combination chemotherapy regimen (VBMCP)

- B. Melphalan and prednisone (MP)
- C. Colchicine
- D. MP and colchicine
- E. High-dose thalidomide

ANS.(B) MP. Oral MP is the best therapy choice for this patient. Colchicine alone is inferior to MP, and adding colchicine to MP does not improve efficacy.² Although hematologic improvement (ie, reduction in the monoclonal protein level) almost never results in immediate improvement in organ dysfunction caused by prior amyloid deposition, patients who have a sustained hematologic response are more likely to eventually have organ function improvement. VBMCP and other combination regimens do not improve response rates significantly but do add toxicity. Thalidomide is poorly tolerated at high doses because it can cause progressive edema, cognitive difficulties, and constipation as well as aggravate preexisting peripheral neuropathy.³

3. After initiating treatment, the patient returns for routine follow-up and states that several acquaintances from a local amyloidosis support group were treated with high- dose melphalan and autologous stem cell transplant (ASCT). He asks whether this therapy might be appropriate for him. Which of the following statements regarding ASCT for amyloidosis is correct?

- A. There have been no randomized trials demonstrating improved survival following ASCT versus conventional nontransplant therapy
 - B. Treatment-related mortality is similar to that in multiple myeloma
 - C. This patient's amyloid-related cardiac dysfunction does not have prognostic significance in relation to ASCT as long as symptoms are wellcontrolled with medications
 - D. Prior chemotherapy precludes further consideration of ASCT because stem cell collection will be problematic
 - E. ASCT cannot be considered in this case because the patient is older than 65 years
- ANS.(A) There have been no randomized trials demonstrating improved survival following ASCT versus conventional nontransplant therapy. High-dose melphalan and ASCT, with its higher likelihood of inducing a hematologic response compared with conventional therapy, may be the treatment of choice in highly selected patients with good organ function. However, no randomized study has demonstrated that this results in improved survival. Two cycles of oral MP therapy do not significantly impact subsequent stem cell collection. Older age is not a contraindication to ASCT, but performance status should be carefully considered. Patients with cardiac dysfunction from amyloidosis have inferior survival, regardless of treatment with ASCT or conventional regimens.⁴ Treatment-associated mortality in patients undergoing

ASCT for amyloidosis (even at the most experienced centers) is 10% to 15%, far in excess of what is reported for myeloma patients undergoing ASCT utilizing the same conditioning regimen

4. The patient responds to initial therapy, but 8 months later develops progressive weight gain, lower extremity edema, anasarca, ascites, and hypotension. On examination, no jugular venous distention is observed, but the liver is enlarged. What is the most likely cause of these findings?

- A. Hepatic amyloid deposition with resultant portal hypertension
- B. Renal amyloid deposition with resultant nephrotic syndrome
- C. Splenic amyloid deposition with capsular rupture and bleeding
- D. Cardiac amyloid deposition with resultant right-sided heart failure
- E. Vascular wall amyloid deposition with resultant deep vein thrombosis

ANS. (B) Renal amyloid deposition with resultant nephrotic syndrome. Glomerular injury and resultant nephrotic syndrome is the most likely explanation for this patient's clinical deterioration.

Hypoalbuminemia results in reduced serum oncotic pressure and subsequent fluid shifts into the extravascular space with associated orthostatic symptoms. Right-sided cardiac failure, if severe enough to cause this degree of edema, would likely be associated with jugular venous distention. A 24-hour urine collection to assess the degree of proteinuria and an echocardiogram should provide enough diagnostic information to distinguish between renal and cardiac causes of this patient's symptoms. Loop diuretics and midodrine can be used cautiously to treat symptoms related to edema and orthostatic hypotension, respectively. Because each of these medications has the potential to exacerbate symptoms being treated with the other drug, careful clinical monitoring is essential. Hepatic enlargement is likely to be caused by amyloid deposition rather than vascular congestion. Hepatic amyloidosis rarely causes portal hypertension, as patients typically succumb to other complications of their disease prior to reaching that point. Splenic amyloidosis typically results in splenomegaly but rarely capsular rupture (which would not explain the lower extremity edema). Amyloid deposition in the vasculature typically results in minor bleeding and bruising rather than thrombotic complications.

Chapter 16: Blood Vessels

1. What is a normal age-related change in older adults that makes them susceptible to cardiovascular disease?

- a. Increase in cardiac output
- b. Increase in stroke volume

- c. Stiff peripheral vessels
- d. Oxygen capacity improvement ANS: C

As adults age, their peripheral vessels become stiff, their oxygen capacity and stroke volume are reduced, and their aorta thickens and calcifies.

2. What should a nurse ask a patient related to past history of deep-vein thrombosis (DVT) and other vascular problems?

- a. An aneurysm
- b. Rheumatoid arthritis
- c. A peptic ulcer
- d. Recurring chest pain ANS: D

Pain in the chest or dyspnea suggests that a pulmonary embolism may have occurred from the presence of a DVT. Approximately 10% of individuals with DVT develop pulmonary emboli.

3. A 69-year-old patient reports a burning, aching pain in the legs when walking to the mailbox. These symptoms are relieved with rest. What should the nurse suspect?

- a. Venous insufficiency
- b. Claudication
- c. Phlebitis
- d. Rest pain ANS: B

Arterial vascular disorders that produce pain with activity are defined as claudication, which is the result of ischemia of the tissues caused by a lack of adequate perfusion.

4. A nurse records the assessment of stasis dermatitis on an intake assessment for a patient with peripheral vascular disease (PVD). What is the best way to describe this finding?

- a. Brownish skin discoloration on the lower legs
- b. Ulceration on medial surface of the lower legs
- c. Edema in the lower legs
- d. Purple rash on medial surface of the lower legs ANS: A

Stasis dermatitis is a brownish skin discoloration on the lower legs, which is indicative of venous stasis.

5. A nurse assesses a patient's capillary refill time as less than 3 seconds. What does this assessment indicate?

- a. Hypertension
- b. Tissue perfusion
- c. Excess fluid volume
- d. Increased blood viscosity ANS: B

Capillary refill is determined by compressing the nail bed until it blanches. With a normal capillary refill, color returns to the blanched skin within 3 seconds.

6. A nurse performs Homans maneuver by flexing the knee and sharply dorsiflexing the foot. What response indicates a positive Homans sign?

- a. Cramping of the toes
- b. Resisting dorsiflexion
- c. Pain in the calf area
- d. Blanching of the sole ANS: C

A positive Homans sign indicates the possible presence of a DVT because of the pain produced in the calf of the leg when the foot is dorsiflexed.

7. Which technique should the nurse implement when performing the Allen test on a patient to evaluate the adequacy of circulation in the radial artery?

- a. Asks the patient to relax the hand by the side
- b. Compresses only the ulnar artery to blanch the hand
- c. Releases pressure on both arteries at the same time
- d. Observes whether the color is returning to the hand, which indicates perfusion ANS: D

The Allen test is performed to evaluate circulation in the hand, both in the radial and the ulnar arteries. The patient is asked to make a fist. The nurse compresses both the ulnar and the radial artery to blanch the hand. The patient is asked to open the hand as the nurse releases pressure on one or the other of the arteries. Color returning to the hand confirms perfusion.

8. A nurse records that a patient has a 3+ edema to the right foot. How deep did the nurse's thumb depress the edematous area?

- a. More than 1 inch
- b. To 1 inch
- c. To inch
- d. Less than inch ANS: B

Edema is measured by the depth of the depression of the thumb: 1 = less than inch, 2 = to inch, 3 = to 1 inch, and 4 = more than 1 inch.

9. A nurse notes ulcerations on the surfaces of a patients toes. What should this assessment most likely indicate?

- a. Skin breakdown from pressure
- b. Nutritional deficit
- c. Venous stasis
- d. Arterial stasis ANS: D

Arterial stasis ulcers on the tips of the patients toes are indicators of arterial insufficiency.

This is a serious and probably progressive disorder that leads to further risk of impaired skin integrity.

10. What is a characteristic of a venous stasis ulcer?

- a. Painlessness
- b. Poikilothermy
- c. Pale color
- d. Location near the groin ANS: A

Venous ulcers are painless ulcers near the ankle that are warm and have a ruddy color.

11. A nurse is caring for a patient who has had an angiogram. What should the nurse make a point of care to assess and document on this patient?

- a. Fluid intake
- b. Peripheral pulses in the affected leg

- c. Inquiring about an allergy to iodine
- d. Decreased blood pressure ANS: B

Checking and recording the presence and strength of the pulses in the affected leg ensure that the injection site has not occluded the vessel and that vascular spasm has not impaired circulation. An inquiry about an iodine allergy is made before the procedure.

12. A nurse is educating a patient regarding a stress test on a treadmill. Teaching includes that this test is a noninvasive procedure. What additional information is appropriate for the nurse to include?

- a. Is monitored continuously by blood pressure and an electrocardiogram
- b. Will last about 1 hour
- c. Is meant to stimulate claudication and dyspnea
- d. Will require a period of bedrest afterward ANS: A

The examination requires the patient to walk at a rate of approximately 1.5 miles per hour. The exercise is continually monitored and is terminated if the patient experiences pain or dyspnea.

13. A patient inquires how something as simple as walking could help his venous vascular disorder. What is the best response by the nurse when explaining the benefits of walking?

- a. Improves the strength of the vascular walls
- b. Boosts venous circulation through leg muscle activity
- c. Increases cardiac output
- d. Clears plaques from the veins ANS: B

Walking is helpful because the muscle action of the legs that massage the valves of the veins boosts circulation.

14. What is contraindicated for a patient performing Buerger-Allen exercises?

- a. Lying on the stomach
- b. Raising legs for 2 minutes until they blanch
- c. Lowering the legs until the color returns
- d. Keeping legs flat for 5 minutes and then repeat the exercise ANS: A

Buerger-Allen exercises promote emptying of the blood vessels by gravity. Initially, lying on the back and elevating the legs will result in pallor, and then lowering the legs will allow color to return.

15. A nurse cautions a patient with peripheral vascular disease (PVD) that continued smoking causes detrimental vasoconstriction for up to after only one cigarette.

- a. 10 minutes
- b. 20 minutes
- c. 30 minutes
- d. 1 hour ANS: D

Smoking restricts circulation by vasoconstriction and lasts up to 1 hour after a cigarette; it also causes vasospasm.

16. A nurse is performing an intake examination on a patient with peripheral vascular disease (PVD). Which lifestyle information identified by the patient aggravates vascular disease?

- a. Riding a bicycle to work
- b. Drinking red wine every day
- c. Being employed as an air traffic controller
- d. Eating chocolate candy every day ANS: C

Employment as an air controller is a stressful occupation. Stress increases vasoconstriction and increases vascular resistance. Wine and chocolate actually have beneficial effects on circulation, as does bicycle riding.

17. Vascular disease disorders often require the use of elastic stockings. Which action should the nurse implement when caring for a patient with elastic stockings?

- a. Apply the stockings and roll down the cuff.
- b. Remove the stockings for skin inspection two times a day.
- c. Remove the stockings when the patient is ambulating.
- d. Inspect the skin for pressure or irritation daily. ANS: B

Elastic stockings improve blood flow. They should be applied early in the morning. They should be removed twice daily for 20 to 30 minutes, and the skin integrity of the feet should be examined.

18. Which instruction is most appropriate for a patient with arterial insufficiency?

- a. Frequently allow the legs to dangle dependently.

- b. Rub the legs vigorously.
- c. Stand often to keep blood flow in the legs.
- d. Walk barefoot. ANS: A

Dangling legs can use gravity to help with arterial circulation. Vigorous rubbing of the

legs is contraindicated, and prolonged standing strains the vascular system. The patient should never walk barefoot.

19. A nurse is preparing to administer low-molecular-weight heparin (LMWH). What is a major advantage related to the administration of LMWH?

- a. It can be given orally.
- b. It is provided fixed doses.
- c. It is given only after partial thromboplastin time (PTT) laboratory work.
- d. It provides an immediate effect. ANS: B

LMWH can be given as a fixed dose without waiting for the results of the PTT. It is only given subcutaneously and does not have an immediate effect. PTT is not done to monitor LMWH.

20. Which statement made by a patient indicates to the nurse that a teaching plan for the use of warfarin was not effective?

- a. I dont take aspirin anymore.
- b. I read that grapefruit interferes with warfarin.
- c. Im drinking too much tea. My urine looks like tea.
- d. I wear my medical alert bracelet all the time. ANS: C

Anticoagulants, such as warfarin (Coumadin), can cause bleeding. A sign of bleeding may be bruising, tea- or cola-colored urine, or dark-colored stool.

21. A patient has returned from a vein ligation and stripping. What are the appropriate instructions for a nurse to provide?

- a. Dangle the legs to prevent edema.
- b. Cross the legs to apply pressure.
- c. Wear compression stockings to promote circulation.

- d. Remove the drain after 24 hours. ANS: C

Postoperative care of a patient with a vein ligation and stripping includes elevating the extremity, wearing compression stockings, taking anticoagulant therapy, and assessing the circulation of the affected extremity.

22. What medication obtained in a patient's history will lessen the effects of warfarin (Coumadin)?

- a. Iron supplement for anemia
- b. Simvastatin (Zocor) for the control of cholesterol
- c. Furosemide (Lasix) for fluid retention
- d. Yaz (drospirenone/estradiol) as an oral contraceptive ANS: D

Oral contraceptives lessen the effects of warfarin (Coumadin).

23. An obese postsurgical patient complains of sudden discomfort in her leg. The nurse assesses the leg and finds it cold and pale with no pedal or popliteal pulse. What should the nurse suspect?

- a. Venous thrombosis
- b. Arterial occlusion
- c. Vascular spasm
- d. Paresthesia ANS: B

Signs of an acute arterial occlusion can include severe pain, absent pulses, or very pale or mottled skin.

24. Which postoperative sign should a nurse report immediately when caring for a patient with an endarterectomy with a synthetic graft?

- a. Headache
- b. Fever
- c. Edema
- d. Pain ANS: B

A fever in a patient with a synthetic graft is a serious postoperative event. The infection may lead to an amputation.

25. A patient with Raynaud disease has a nursing diagnosis of Ineffective tissue perfusion, related to vasoconstriction and is being given discharge instructions. What should the nurse include when providing this information?

- a. Avoid sun exposure.
- b. Wear gloves and warm socks when outdoors.
- c. Chafe hands frequently to warm them.
- d. Wash dishes in warm water. ANS: B

Chafing hands to warm them does not provide vasodilation and may cause tissue damage. Avoiding exposure to cold is paramount to prevent pain and tissue damage. Raynaud disease involves the constriction of the arterioles of the hands, toes, and nose. Pain is a cardinal symptom and can be relieved with methods to promote vasodilation.

26. What assessment should a nurse perform on a patient after the repair of an abdominal aortic aneurysm?

- a. Periorbital edema
- b. Tremor or facial twitching
- c. Rising blood pressure
- d. Bowel sounds ANS: D

Repair of aortic abdominal aneurysms cause a temporary cessation of peristalsis. Although this condition is expected, the beginning of bowel sounds indicates important progress in the recovery. Rising blood pressure is an expected recovery indication from surgery.

27. What patient teaching should be included for a patient with varicose veins?

- a. Weight reduction
- b. Decreasing exercise
- c. Wearing a panty girdle
- d. Standing rather than sitting ANS: A

Varicose veins are caused by a dilation of incompetent valves. Obesity, pregnancy, restrictive clothing, and prolonged standing aggravate the condition.

MULTIPLE RESPONSE

28. Why do older persons adapt more slowly to changes in the peripheral vascular system? (Select all that apply.)

- a. Slowing heart rate
- b. Decreasing cardiac output
- c. Increasing stroke volume
- d. Stiffening of blood vessels
- e. Thickening of aorta ANS: A, B, D, E

Age-related changes include a slowing of the heart rate, a decrease in both cardiac output and stroke volume, and a stiffening and thickening of blood vessels.

29. A nurse suspects a circulatory disorder in one leg. Which assessments should the nurse include when comparing both legs? (Select all that apply.)

- a. Color
- b. Warmth
- c. Muscle strength
- d. Pulse quality
- e. Hair loss on extremity ANS: A, B, D, E

Muscle strength is not a circulatory assessment. Color, warmth, pulse quality, and loss of superficial hair are indicators of decreased arterial perfusion.

COMPLETION

30. A nurse explains that the lining of a vessel that allows for smooth blood flow and also reduced resistance in the vessel is the _____ of the vessel.

ANS:

intima

The interior lining of a blood vessel is referred to as the intima.

31. A nurse explains that when a patient history reveals a recent episode of vomiting and diarrhea, the nurse anticipates that this fluid loss will cause _____ and increased blood viscosity.

ANS:

hemoconcentration

Hemoconcentration occurs when fluid is lost through dehydration, which makes the blood more viscous and shows an inaccurately high value of hemoglobin.

Chapter 17: The Heart

MULTIPLE CHOICE

1. Which of the following actions causes the atrioventricular (AV) valves to close?
 - a. Increased intraventricular pressure
 - b. Depolarization at the AV node
 - c. Ventricular relaxation and backflow of blood
 - d. Contraction of the atria

ANS: A

2. When stroke volume decreases, which of the following could maintain cardiac output?
 - a. Decreased peripheral resistance
 - b. Increased heart rate
 - c. Decreased venous return
 - d. General vasodilation

ANS: B

3. Which of the following describes the pericardial cavity?
 - a. It contains sufficient fluid to provide a protective cushion for the heart.

- b. It is a potential space containing a very small amount of serous fluid.
- c. It is lined by the endocardium.
- d. It is located between the double-walled pericardium and the epicardium.

ANS: B

4. Which of the following factors greatly improves venous return to the heart during strenuous exercise?

- a. Rapid emptying of the right side of the heart
- b. Forceful action of the valves in the veins
- c. Contraction and relaxation of skeletal muscle
- d. Peristalsis in the large veins

ANS: C

5. The function of the baroreceptors is to:

- a. stimulate the parasympathetic or sympathetic nervous system at the sinoatrial (SA) node as needed.
- b. adjust blood pressure by changing peripheral resistance.
- c. sense a change in blood oxygen and carbon dioxide levels.
- d. signal the cardiovascular control center of changes in systemic blood pressure.

ANS: D

6. The normal delay in conduction through the AV node is essential for:

- a. preventing an excessively rapid heart rate.
- b. limiting the time for a myocardial contraction.
- c. allowing the ventricles to contract before the atria.
- d. completing ventricular filling.

ANS: D

7. Which of the following is a result of increased secretion of epinephrine?

- a. Increased heart rate and force of contraction
- b. Decreased stimulation of the SA node and ventricles
- c. Vasoconstriction in skeletal muscles and kidneys
- d. Vasodilation of cutaneous blood vessels

ANS: A

8. Which of the following causes increased heart rate?

- a. Stimulation of the vagus nerve
- b. Increased renin secretion
- c. Administration of beta-blocking drugs
- d. Stimulation of the sympathetic nervous system

ANS: D

9. The event that causes the QRS wave on an electrocardiogram (ECG) tracing is:

- a. atrial depolarization.
- b. atrial repolarization.
- c. ventricular depolarization.
- d. ventricular repolarization.

ANS: C

10. The cardiac reserve is:

- a. afterload.
- b. the difference between the apical and radial pulses.
- c. the ability of the heart to increase cardiac output when needed.
- d. the extra blood remaining in the heart after it contracts.

ANS: C

11. The term preload refers to:

- a. volume of venous return.
- b. peripheral resistance.
- c. stroke volume.
- d. cardiac output.

ANS: A

12. The first arteries to branch off the aorta are the:

- a. common carotid arteries.
- b. pulmonary arteries.
- c. coronary arteries.
- d. subclavian arteries.

ANS: C

13. Cardiac output refers to:

- a. the amount of blood passing through either of the atria.
- b. the volume of blood ejected by a ventricle in one minute.
- c. the volume of blood ejected by each ventricle in a single contraction.
- d. the total number of heartbeats in one minute.

ANS: B

14. Vasodilation in the skin and viscera results directly from:

- a. decreased blood pressure.
- b. increased parasympathetic stimulation.
- c. relaxation of smooth muscle in the arterioles.
- d. increased stimulation of alpha-adrenergic receptors.

ANS: C

15. Which of the following drugs decrease sodium and fluid retention in the body?

- a. warfarin (Coumadin)
- b. digoxin (Lanoxin)
- c. nitroglycerin (Isordil)
- d. hydrochlorothiazide (HydroDIURIL)

ANS: D

16. Which of the following are predisposing factors to thrombus formation in the circulation?

- 1. Decreased viscosity of the blood
- 2. Damaged blood vessel walls
- 3. Immobility
- 4. Prosthetic valves

- a. 1, 3
- b. 2, 4
- c. 1, 3, 4
- d. 2, 3, 4

ANS: D

17. A drug taken in small doses on a continuing basis to reduce platelet adhesion is:

- a. acetylsalicylic acid (ASA).
- b. streptokinase.
- c. acetaminophen.
- d. heparin.

ANS: A

18. A partial obstruction in a coronary artery will likely cause:

- a. pulmonary embolus.
- b. hypertension.

- c. angina attacks.
- d. myocardial infarction.

ANS: C

19. Cigarette smoking is a risk factor in coronary artery disease because smoking:
- a. reduces vasoconstriction and peripheral resistance.
 - b. decreases serum lipid levels.
 - c. promotes platelet adhesion.
 - d. increases serum HDL levels.

ANS: C

20. The term arteriosclerosis specifically refers to:
- a. development of atheromas in large arteries.
 - b. intermittent vasospasm in coronary arteries.
 - c. degeneration with loss of elasticity and obstruction in small arteries.
 - d. ischemia and necrosis in the brain, kidneys, and heart.

ANS: C

21. A modifiable factor that increases the risk for atherosclerosis is:
- a. leading a sedentary lifestyle.
 - b. being female and older than 40 years of age.
 - c. excluding saturated fats from the diet.
 - d. familial hypercholesterolemia.

ANS: A

22. An atheroma develops from:
- a. a torn arterial wall and blood clots.
 - b. accumulated lipids, cells, and fibrin where endothelial injury has occurred.

- c. thrombus forming on damaged walls of veins.
- d. repeated vasospasms.

ANS: B

23. Low-density lipoproteins (LDL):
- a. promote atheroma development.
 - b. contain only small amounts of cholesterol.
 - c. transport cholesterol from cells to the liver for excretion.
 - d. are associated with low intake of saturated fats.

ANS: A

24. Factors that may precipitate an angina attack include all of the following EXCEPT:
- a. eating a large meal.
 - b. engaging in an angry argument.
 - c. taking a nap.
 - d. shoveling snow on a cold, windy day.

ANS: C

25. When comparing angina with myocardial infarction (MI), which statement is true?
- a. Both angina and MI cause tissue necrosis.
 - b. Angina often occurs at rest; MI occurs during a stressful time.
 - c. Pain is more severe and lasts longer with angina than with MI.
 - d. Angina pain is relieved by rest and intake of nitroglycerin; the pain of MI is not.

ANS: D

26. The basic pathophysiology of myocardial infarction is best described as:
- a. cardiac output that is insufficient to meet the needs of the heart and body.
 - b. temporary vasospasm that occurs in a coronary artery.

- c. total obstruction of a coronary artery, which causes myocardial necrosis.
- d. irregular heart rate and force, reducing blood supply to coronary arteries.

ANS: C

27. Typical early signs or symptoms of myocardial infarction include:

- a. brief, substernal pain radiating to the right arm, with labored breathing.
- b. persistent chest pain radiating to the left arm, pallor, and rapid, weak pulse.
- c. bradycardia, increased blood pressure, and severe dyspnea.
- d. flushed face, rapid respirations, left-side weakness, and numbness.

ANS: B

28. The most common cause of a myocardial infarction is:

- a. an imbalance in calcium ions.
- b. an infection of the heart muscle.
- c. atherosclerosis involving an attached thrombus.
- d. a disruption of the heart conduction system.

ANS: C

29. Calcium-channel blocking drugs are effective in:

- a. reducing the risk of blood clotting.
- b. decreasing the attraction of cholesterol into lipid plaques.
- c. reducing cardiac and smooth muscle contractions.
- d. decreasing all types of cardiac arrhythmias.

ANS: C

30. Which of the following confirms the presence of a myocardial infarction?

- a. A full description of the pain, including the sequence of development
- b. The presence of elevated serum cholesterol and triglycerides
- c. Serum isoenzymes released from necrotic cells and an ECG

- d. Leukocytosis and elevated C-reactive protein

ANS: C

31. The size of the necrotic area resulting from myocardial infarction may be minimized by all of the following EXCEPT:

- a. previously established collateral circulation.
- b. immediate administration of thrombolytic drugs.
- c. maintaining maximum oxygen supply to the myocardium.
- d. removing the predisposing factors to atheroma development.

ANS: D

32. The most common cause of death immediately following a myocardial infarction is:

- a. cardiac arrhythmias and fibrillation.
- b. ruptured ventricle or aorta.
- c. congestive heart failure.
- d. cerebrovascular accident.

ANS: A

33. Why does ventricular fibrillation result in cardiac arrest?

- a. Delayed conduction through the AV node blocks ventricular stimulation.
- b. Insufficient blood is supplied to the myocardium.
- c. The ventricles contract before the atria.
- d. Parasympathetic stimulation depresses the SA node.

ANS: B

34. The term cardiac arrest refers to which of the following?

- a. Condition where cardiac output is less than the demand
- b. A decreased circulating blood volume
- c. Missing a ventricular contraction

- d. The cessation of all cardiac function

ANS: D

35. Which change results from total heart block?

- a. A prolonged PR interval
- b. Periodic omission of a ventricular contraction
- c. A wide QRS wave
- d. Spontaneous slow ventricular contractions, not coordinated with atrial contraction

ANS: D

36. The term premature ventricular contraction refers to the condition where:

- a. atrial muscle cells are stimulating additional cardiac contractions.
- b. the ventricles contract spontaneously following a period without a stimulus.
- c. additional contractions arise from ectopic foci in the ventricular muscle.
- d. increased heart rate causes palpitations.

ANS: C

37. Which of the following is most likely to cause left-sided congestive heart failure?

- a. Incompetent tricuspid heart valve
- b. Chronic pulmonary disease
- c. Infarction in the right atrium
- d. Uncontrolled essential hypertension

ANS: D

38. The definition of congestive heart failure is:

- a. cessation of all cardiac activity.
- b. inability of the heart to pump enough blood to meet the metabolic needs of the body.
- c. insufficient circulating blood in the body.

- d. the demand for oxygen by the heart is greater than the supply.

ANS: B

39. Significant signs of right-sided congestive heart failure include:

- a. severe chest pain and tachycardia.
- b. edematous feet and legs with hepatomegaly.
- c. frequent cough with blood-streaked frothy sputum.
- d. orthopnea, fatigue, increased blood pressure.

ANS: B

40. Paroxysmal nocturnal dyspnea is marked by:

- a. hemoptysis and rales.
- b. distended neck veins and flushed face.
- c. bradycardia and weak pulse.
- d. cardiomegaly.

ANS: A

41. Compensation mechanisms for decreased cardiac output in cases of congestive heart failure include:

- a. slow cardiac contractions.
- b. increased renin and aldosterone secretions.
- c. decreased erythropoietin secretion.
- d. fatigue and cold intolerance.

ANS: B

42. In which blood vessels will failure of the left ventricle cause increased hydrostatic pressure?

- a. Veins of the legs and feet
- b. Jugular veins
- c. Pulmonary capillaries
- d. Blood vessels of the liver and spleen

ANS: C

43. Which of the following drugs improves cardiac efficiency by slowing the heart rate and increasing the force of cardiac contractions?

- a. Furosemide
- b. Digoxin
- c. Epinephrine
- d.

ANS: B 44. In an infant, the initial indication of congestive heart failure is often:

infant, the initial indication of congestive heart failure is often:

- a. distended neck veins.
- b. feeding problems.
- c. low-grade fever and lethargy.
- d. frequent vomiting.

ANS: B

45. Effects that may be expected from a beta-adrenergic blocking drug include:

- a. increasing systemic vasoconstriction.
- b. decreased sympathetic stimulation of the heart.
- c. blockage of an angiotensin receptor site.
- d. increased release of renin.

ANS: B

46. A sign of aortic stenosis is:

- a. increased cardiac output.
- b. congestion in the liver, spleen, and legs.
- c. flushed face and headache.

- d. a heart murmur.

ANS: D

47. An incompetent mitral valve would cause:

- a. increased blood to remain in the right atrium.
- b. hypertrophy of the right ventricle.
- c. decreased output from the left ventricle.
- d. decreased pressure in the left atrium.

ANS: C

48. Which of the following describes the blood flow occurring with a ventricular septal defect?

- a. From the left ventricle to the right ventricle
- b. From the right ventricle to the left ventricle
- c. Increased cardiac output from the left ventricle
- d. Mixed oxygenated and unoxygenated blood in the systemic circulation

ANS: A

49. Unoxygenated blood enters the systemic circulation in children with tetralogy of Fallot because:

- a. the aorta and pulmonary artery have exchanged positions.
- b. pulmonary stenosis changes the ventricular pressures.
- c. the left ventricular wall has hypertrophied.
- d. the septal defect allows exchange of blood between the atria.

ANS: B

50. Cyanosis occurs in children with tetralogy of Fallot because:

- a. more carbon dioxide is present in the circulating blood.
- b. a large amount of hemoglobin in the general circulation is unoxygenated.
- c. the pulmonary circulation is overloaded and congested.

- d. the circulation is sluggish (slow) throughout the system.

ANS: B

51. The initial effect on the heart in cases of rheumatic fever is:

- a. infection in the heart by hemolytic streptococci.
- b. highly virulent microbes causing vegetations on the heart valves.
- c. septic emboli obstructing coronary arteries.
- d. acute inflammation in all layers of the heart due to abnormal immune response.

ANS: D

52. Common signs of rheumatic fever include all of the following EXCEPT:

- a. arthritis, causing deformity of the small joints in the hands and feet.
- b. erythematous skin rash and subcutaneous nodules.
- c. epistaxis, tachycardia, and fever.
- d. elevated ASO titer and leukocytosis.

ANS: A

53. Rheumatic heart disease usually manifests in later years as:

- a. swollen heart valves and fever.
- b. cardiac arrhythmias and heart murmurs.
- c. thrombus formation and septic emboli.
- d. petechial hemorrhages of the skin and mucosa.

ANS: B

54. Septic emboli, a common complication of infective endocarditis, are a result of the fact that:

- a. vegetations are loosely attached and fragile.
- b. the valves are no longer competent.
- c. cardiac output is reduced.
- d. heart contractions are irregular.

ANS: A

55. Which of the following applies to subacute infective endocarditis?
- a. A microbe of low virulence attacks abnormal or damaged heart valves.
 - b. Virulent microbes invade normal heart valves.
 - c. No permanent damage occurs to the valves.
 - d. Prophylactic medication does not prevent infection.

ANS: A

56. Pericarditis causes a reduction in cardiac output as a result of which of the following?
- a. Delays in the conduction system, interfering with cardiac rhythm
 - b. Weak myocardial contractions due to friction rub
 - c. Excess fluid in the pericardial cavity, which decreases ventricular filling
 - d. Incompetent valves, which allow regurgitation of blood

ANS: C

57. Pericarditis may be caused by:
- 1. infection.
 - 2. abnormal immune responses.
 - 3. injury.
 - 4. malignant neoplasm.
- a. 1, 2
 - b. 3, 4
 - c. 1, 3, 4
 - d. 1, 2, 3, 4

ANS: D

58. A source of an embolus causing an obstruction in the brain could be the:

- a. femoral vein.
- b. pulmonary vein.
- c. carotid artery.
- d. coronary artery.

ANS: C

59. The basic pathophysiological change associated with essential hypertension is:

- a. development of lipid plaques in large arteries.
- b. recurrent inflammation and fibrosis in peripheral arteries.
- c. degeneration and loss of elasticity in arteries.
- d. increased systemic vasoconstriction.

ANS: D

60. Uncontrolled hypertension is most likely to cause ischemia and loss of function in the:

- a. kidneys, brain, and retinas of the eye.
- b. peripheral arteries in the legs.
- c. aorta and coronary arteries.
- d. liver, spleen, and stomach.

ANS: A

Chapter 18: The Respiratory System

MULTIPLE CHOICE

1. What happens in the lungs when the diaphragm and external intercostal muscles relax?
 - a. Air is forced out of the lungs.
 - b. Lung volume increases.
 - c. Intrapulmonic pressure decreases.
 - d. Intrapleural pressure decreases.

ANS: A

2. The respiratory mucosa is continuous through the:
 1. upper and lower respiratory tracts.
 2. nasal cavities and the sinuses.
 3. nasopharynx and oropharynx.
 4. middle ear cavity and auditory tube.
 - a. 1 only
 - b. 1, 2
 - c. 2, 3
 - d. 1, 3, 4
 - e. 1, 2, 3, 4

ANS: E

3. Which of the following activities does NOT require muscle contractions and energy?
 - a. Quiet inspiration
 - b. Forced inspiration
 - c. Quiet expiration

- d. Forced expiration

ANS: C

4. The maximum volume of air a person can exhale after a maximum inspiration is termed the:

- a. expiratory reserve volume.
- b. inspiratory reserve volume.
- c. total lung capacity.
- d. vital capacity.

ANS: D

5. Which of the following applies to the blood in the pulmonary artery?

- a. PCO₂ is low.
- b. PO₂ is low.
- c. Hydrostatic pressure is very high.
- d. It is flowing into the left atrium.

ANS: B

6. Which of the following causes bronchodilation?

- a. Epinephrine
- b. Histamine
- c. Parasympathetic nervous system
- d.

ANS: A 7. Drugs that block 2-adrenergic receptors

The central chemoreceptors in the medulla are normally most sensitive to:

- a. low oxygen level.
- b. low concentration of hydrogen ions.
- c. elevated oxygen level.

- d. elevated carbon dioxide level.

ANS: D

8. Oxygen diffuses from the alveoli to the blood because:

- a. PO₂ is higher in the blood.
- b. PO₂ is lower in the blood.

c. CO₂ is diffusing out of the blood.

d. more CO₂ is diffusing out of cells into the blood.

ANS: B

9. Carbon dioxide is primarily transported in the blood:

- a. as dissolved gas.
- b. attached to the iron molecule in hemoglobin.
- c. as bicarbonate ion.
- d. as carbonic acid.

ANS: C

10. What would hypercapnia cause?

- a. Increased serum pH
- b. Decreased respirations
- c. Respiratory acidosis
- d. Decreased carbonic acid in the blood

ANS: C

11. Which of the following would result from hyperventilation?

- a. Respiratory acidosis
- b. Respiratory alkalosis
- c. Metabolic alkalosis

- d. Metabolic acidosis

ANS: B

12. Which of the following values is always decreased with respiratory alkalosis (compensated or decompensated)?

- a. Serum bicarbonate
- b. PaCO₂
- c. Serum pH
- d. Urine pH

ANS: B

13. What would be the most effective compensation for respiratory acidosis?

- a. The kidneys eliminating more bicarbonate ions
- b. The kidneys producing more bicarbonate ions
- c. The kidneys reabsorbing more hydrogen ions
- d. An increase in respiratory rate

ANS: B

14. What is the acid-base status of a patient with the following values for arterial blood gases?

serum bicarbonate 36.5 mmol/L (normal range: 22-28) PCO₂ 75 mm Hg (normal range: 35-45)

serum pH 7.0

- a. Compensated metabolic acidosis
- b. Decompensated metabolic acidosis
- c. Compensated respiratory acidosis
- d. Decompensated respiratory acidosis

ANS: D

15. What does carbaminohemoglobin refer to?

- a. Replacement of oxygen by carbon monoxide on hemoglobin molecules

- b. Full saturation of all heme molecules by oxygen
- c. Carbon dioxide attached to an amino group on the hemoglobin molecule
- d. Oxygen combined with iron in the hemoglobin molecule

ANS: C

16. Approximately what percentage of bound oxygen is released to the cells for metabolism during an erythrocytes journey through the circulatory system?

- a. 80%
- b. 25%
- c. 10%
- d. 50%

ANS: B

17. The production of yellowish-green, cloudy, thick sputum is often an indication of:

- a. bacterial infection.
- b. cancer tumor.
- c. damage of lung tissue due to smoking.
- d. emphysema.

ANS: A

18. What does the term hemoptysis refer to?

- a. Thick, dark red sputum associated with pneumococcal infection
- b. Reddish-brown granular blood found in vomitus
- c. Bright red streaks of blood in frothy sputum
- d. Bloody exudate in the pleural cavity

ANS: C

19. Orthopnea is:

- a. very deep, rapid respirations.
- b. difficulty breathing when lying down.

- c. waking up suddenly, coughing, and struggling for breath.
- d. noisy breathing with stridor or rhonchi.

ANS: B

20. Light bubbly or crackling breathing sounds associated with serous secretions are called:

- a. rhonchi.
- b. stridor.
- c. rales.
- d. wheezing.

ANS: C

21. Choose the correct information applying to laryngotracheobronchitis:

- a. Viral infection in infant under 12 months
- b. Viral infection in child, 3 months to 3 years
- c. Bacterial infection in infant under 6 months
- d. Bacterial infection in child, 3 to 7 years

ANS: B

22. Signs and symptoms of acute sinusitis usually include:

- a. serous nasal discharge and chronic cough.
- b. copious frothy sputum and dyspnea.
- c. severe localized pain in the facial bone and tenderness in the face.
- d. fetid breath and sore throat.

ANS: C

23. What are early signs and symptoms of infectious rhinitis?

- a. Purulent nasal discharge and periorbital pain
- b. Serous nasal discharge, congestion, and sneezing

- c. Copious purulent sputum, particularly in the morning
- d. Harsh barking cough and wheezing

ANS: B

24. Why does the influenza virus cause recurrent infection in individuals?

- a. Elderly patients are predisposed to secondary infections.
- b. The virus is transmitted by numerous routes.
- c. The virus is very difficult to destroy.
- d. Viral mutation reduces immunity from prior infections.

ANS: D

25. What are typical signs and symptoms of epiglottitis?

- a. Hyperinflation of the chest and stridor
- b. Hoarse voice and barking cough
- c. Sudden fever, sore throat, and drooling saliva
- d. Sneezing, mild cough, and fever

ANS: C

26. What is the most common cause of viral pneumonia?

- a. Rhinovirus
- b. Influenza virus
- c. Haemophilus influenzae
- d. Pneumococcus

ANS: B

27. Which of the following describes lobar pneumonia?

- a. Sudden onset of fever and chills, with rales and rusty sputum
- b. Insidious onset, diffuse interstitial infection

- c. Viral infection causing nonproductive cough and pleuritic pain
- d. Opportunistic bacteria causing low-grade fever with cough and thick greenish sputum

ANS: A

28. How does severe hypoxia develop with pneumonia?

- a. Acidosis depresses respirations.
- b. Oxygen diffusion is impaired by the congestion.
- c. Inflammatory exudate absorbs oxygen from the alveolar air.
- d. Infection reduces effective compensation by the heart.

ANS: B

29. Rust-colored sputum in a patient with pneumonia usually indicates:

- a. secondary hemorrhage in the lungs.
- b. *Streptococcus pneumoniae* is the infecting agent.
- c. prolonged stasis of mucous secretions in the airways.
- d. persistent coughing has damaged the mucosa in the bronchi.

ANS: B

30. What is the cause of Legionnaires disease?

- a. *Mycoplasma*
- b. A fungus
- c. A gram-negative bacterium
- d. *Pneumococcus*

ANS: C

31. Select the statement related to tuberculosis:

- a. The microbe is present in the sputum of all patients with a positive TB skin test.
- b. The infection is transmitted primarily by blood from an infected person.
- c. TB is usually caused by an acid-fast bacillus, resistant to many disinfectants.

- d. The microbe is quickly destroyed by the immune response.

ANS: C

32. How is primary tuberculosis identified?

- a. Cavitation in the lungs and spread of the microbe to other organs
- b. Persistent productive cough, low-grade fever, and fatigue
- c. Caseation necrosis and formation of a tubercle in the lungs
- d. Multiple granulomas in the lungs and rapid spread of the microbe

ANS: C

33. When does active (secondary) infection by *Mycobacterium tuberculosis* with tissue destruction occur?

- a. When host resistance is decreased
- b. When a hypersensitivity reaction is initiated
- c. When the BCG vaccine is not administered immediately following exposure to the microbe
- d. When Ghon complexes form in the lungs

ANS: A

34. Which of the following statements does NOT apply to *M. tuberculosis*?

- a. Microbes can survive for a long time inside tubercles.
- b. The bacilli can survive some adverse conditions such as drying and heat.
- c. Infection is limited to the lungs.
- d. The bacilli can be destroyed by antibacterial drugs.

ANS: C

35. Which of the following confirms the presence of active (reinfection) tuberculosis?

- a. A positive skin test for TB
- b. A calcified tubercle shown on a chest X-ray
- c. Identification of acid-fast bacilli in a sputum sample

- d. A history of exposure to individuals being treated for TB

ANS: C

36. Areas in the United States that show higher rates than the national rate of TB are areas that have a high incidence of:

- a. HIV and homelessness.
- b. obesity and tobacco use.
- c. elderly persons and radon.
- d. steroid use and alcoholism.

ANS: A

37. Histoplasmosis is caused by a:

- a. fungus.
- b. virus.
- c. bacillus.
- d. protozoa.

ANS: A

38. Cystic fibrosis is transmitted as a/an:

- a. X-linked recessive gene.
- b. autosomal recessive gene.
- c. autosomal dominant gene.
- d. chromosomal defect.

ANS: B

39. The basic pathophysiology of cystic fibrosis is centered on a/an:

- a. defect of the exocrine glands.
- b. impaired function of the endocrine glands.
- c. chronic inflammatory condition of the lungs.

- d. abnormal immune response in the lungs and other organs.

ANS: A

40. Growth and development of a child with cystic fibrosis may be delayed because of:

- a. deficit of gastric enzymes for protein digestion.
- b. mucus plugs obstructing the flow of pancreatic enzymes.
- c. lack of available treatment for steatorrhea.
- d. abnormal salivary secretions.

ANS: B

41. Persistent thick mucus in the bronchioles of a child with cystic fibrosis may cause:

- 1. air trapping.
 - 2. atelectasis.
 - 3. repeated infections.
 - 4. irreversible damage to lung tissue.
- a. 1, 2
 - b. 2, 4
 - c. 1, 3, 4
 - d. 1, 2, 3, 4

ANS: D

42. What is a common indicator of cystic fibrosis in the newborn?

- a. Infant respiratory distress syndrome
- b. Failure to excrete meconium
- c. Taste of ammonia on the skin
- d. Lack of bile secretions

ANS: B

43. What is an early sign of bronchogenic carcinoma?

- a. Air trapping and overinflation of the lung
- b. Weight loss
- c. Bone pain
- d. Chronic cough

ANS: D

44. Cigarette smoking predisposes to malignant neoplasms because smoking:

- a. can cause metaplasia and dysplasia in the epithelium.
- b. promotes malignant changes in all types of benign tumors in the lungs.
- c. causes paraneoplastic syndrome.
- d. increases exposure to carbon monoxide in the lungs.

ANS: A

45. Why does hypercalcemia occur with bronchogenic carcinoma?

- a. Invasion of the parathyroid gland by the tumor
- b. Secretion of parathyroid or parathyroid like hormones by the tumor
- c. Destruction of the ribs
- d. Failure of the kidney to excrete calcium ions

ANS: B

46. What is a sign indicating total obstruction of the airway by aspirated material?

- a. Hoarse cough
- b. Rapid loss of consciousness
- c. Dyspnea
- d. Inflammation of the mucosa

ANS: B

47. Which of the following predisposes to postoperative aspiration?

- a. Reduced pressure of the abdominal organs on the diaphragm
- b. Depression of the vomiting center by anesthetics and analgesics
- c. Vomiting caused by drugs or anesthesia
- d. Lack of food intake for the previous 24 hours

ANS: C

48. What is the pathophysiology of an acute attack of extrinsic asthma?

- a. Gradual degeneration and fibrosis
- b. Continuous severe attacks unresponsive to medication
- c. A hypersensitivity reaction involving release of chemical mediators
- d. Hyperresponsive mucosa

ANS: C

49. During an acute asthma attack, how does respiratory obstruction occur?

- 1. Relaxation of bronchial smooth muscle
- 2. Edema of the mucosa
- 3. Increased secretion of thick, tenacious mucus
- 4. Contraction of elastic fibers

- a. 1, 2
- b. 1, 3
- c. 2, 3
- d. 2, 4

ANS: C

50. What cause the expanded anteroposterior (A-P) thoracic diameter (barrel chest) in patients with emphysema?

- a. Air trapping and hyperinflation
- b. Persistent coughing to remove mucus

- c. Recurrent damage to lung tissues
- d. Dilated bronchi and increased mucous secretions

ANS: A

51. Which of the following is typical of progressive emphysema?

- a. Vital capacity increases.
- b. Residual lung volume increases.
- c. Forced expiratory volume increases.
- d. Tidal volume increases.

ANS: B

52. Destruction of alveolar walls and septae is a typical change in:

- a. chronic bronchitis.
- b. acute asthma.
- c. emphysema.
- d. asbestosis.

ANS: C

53. A group of common chronic respiratory disorders characterized by tissue degeneration and respiratory obstruction is called:

- a. mesothelioma.
- b. COPD.
- c. CF.
- d. MD.

ANS: B

54. Which statement does NOT apply to emphysema?

- a. The surface area available for gas exchange is greatly reduced.
- b. A genetic defect may lead to breakdown of elastic fibers.
- c. The ventilation/perfusion ratio remains constant.

- d. Expiration is impaired.

ANS: C

55. What is the cause of chronic bronchitis?

- a. Chronic irritation, inflammation, and recurrent infection of the larger airways
- b. A genetic defect causing excessive production of mucus
- c. Hypersensitivity to parasympathetic stimulation in the bronchi
- d. Deficit of enzymes, preventing tissue degeneration

ANS: A

56. Which of the following is typical of chronic bronchitis?

- a. Decreased activity of the mucous glands
- b. Fibrosis of the bronchial wall
- c. Overinflation of bronchioles and alveoli
- d. Formation of blebs or bullae on the lung surface

ANS: B

57. What are typical pathological changes with bronchiectasis?

- a. Bronchospasm and increased mucous secretion
- b. Adhesions and fibrosis in the pleural membranes
- c. Airway obstructions and weak, dilated bronchial walls
- d. Fixation of the ribs in the inspiratory position

ANS: C

Chapter 19: The Gastrointestinal Tract

MULTIPLE CHOICE

1. Which of the following cells in the gastric mucosa produce intrinsic factor and hydrochloric acid?
 - a. Parietal cells
 - b. Chief cells
 - c. Mucous cells
 - d. Gastrin cells

ANS: A

2. Which of the following is the primary site for absorption of nutrients?
 - a. Stomach
 - b. Duodenum
 - c. Ileum
 - d. Ascending colon

ANS: C

3. When highly acidic chyme enters the duodenum, which hormone stimulates the release of pancreatic secretions that contains very high bicarbonate ion content?
 - a. Gastrin
 - b. Secretin
 - c. Cholecystokinin
 - d. Histamine

ANS: B

4. Which of the following breaks protein down into peptides?
 - a. Amylase
 - b. Peptidase
 - c. Lactase
 - d. Trypsin

ANS: D

5. In which structure is oxygenated blood (arterial) mixed with unoxygenated blood (venous) so as to support the functions of the structure?

- a. Pancreas
- b. Liver
- c. Small intestine
- d. Spleen

ANS: B

6. Which of the following stimulates increased peristalsis and secretions in the digestive tract?

- a. Sympathetic nervous system
- b. Vagus nerve
- c. Increased saliva
- d. Absence of food in the system

ANS: B

7. Which of the following is contained in pancreatic exocrine secretions?

- a. Bicarbonate ion
- b. Hydrochloric acid
- c. Activated digestive enzymes
- d. Insulin

ANS: A

8. The presence of food in the intestine stimulates intestinal activity but inhibits gastric activity through the:

- a. defecation reflex.
- b. enterogastric reflex.
- c. vomiting reflex.
- d. autodigestive reflex.

ANS: B

9. Which of the following processes is likely to occur in the body immediately after a meal?
- a. Lipolysis
 - b. Ketogenesis
 - c. Gluconeogenesis
 - d. Glycogenesis

ANS: D

10. What does the term gluconeogenesis refer to?
- a. Breakdown of glycogen to produce glucose
 - b. Conversion of excess glucose into glycogen for storage
 - c. Formation of glucose from protein and fat
 - d. Breakdown of glucose into carbon dioxide and water

ANS: C

11. Normally, proteins or amino acids are required to produce all of the following EXCEPT:
- a. peptide hormones.
 - b. clotting factors and antibodies.
 - c. cellular energy.
 - d. hemoglobin.

ANS: C

12. Which of the following statements applies to bile salts?
- a. They give feces the characteristic brown color.
 - b. They are enzymes used to break down fats into free fatty acids.
 - c. They emulsify lipids and lipid-soluble vitamins.
 - d. They are excreted in the feces.

ANS: C

13. The visceral peritoneum:
- a. lines the abdominal wall.
 - b. hangs from the stomach over the loops of small intestine.
 - c. contains many pain receptors.
 - d. forms the outer covering of the stomach.

ANS: D

14. The early stage of vomiting causes:
- a. metabolic alkalosis.
 - b. metabolic acidosis.
 - c. increased respirations.
 - d. increased excretion of hydrogen ions.

ANS: A

15. Yellow or greenish stained vomitus usually indicates the presence of:
- a. bile.
 - b. blood.
 - c. protein.
 - d. bacteria.

ANS: A

16. Small, hidden amounts of blood in stool are referred to as:
- a. melena.
 - b. occult blood.
 - c. frank blood.
 - d. hematemesis.

ANS: B

17. Severe vomiting can lead to metabolic acidosis because of increased:
- a. ketones produced.
 - b. CO₂ retained in the lungs and kidneys.
 - c. hypovolemia and lactic acid production.
 - d. metabolic rate.

ANS: C

18. Which of the following applies to the act of swallowing?
- a. It requires coordination of cranial nerves V, IX, X, and XII.
 - b. It is entirely voluntary.
 - c. It is controlled by a center in the hypothalamus.
 - d. It does not affect respiration.

ANS: A

19. What does the defecation reflex require?
- a. Stimulation by the sympathetic nervous system
 - b. Contraction of the internal anal sphincter
 - c. Coordination through the sacral spinal cord
 - d. Voluntary relaxation of pelvic muscles

ANS: C

20. What is the definition of dysphagia?
- a. A herniation of the gastric mucosa through a segment of weakened muscle
 - b. Recurrent reflux of chyme into the esophagus
 - c. Absence of a connection of the esophagus to the stomach
 - d. Difficulty in swallowing

ANS: D

21. What does congenital esophageal atresia cause?
- a. Direct passage of saliva and food from the mouth into the trachea
 - b. Repeated reflux of gastric secretions into the esophagus
 - c. No fluid or food entering the stomach
 - d. Gastric distention and cramps

ANS: C

22. Which of the following applies to cleft palate?
- a. The mandibular processes do not fuse.
 - b. The hard and soft palates do not fuse during the first trimester of pregnancy.
 - c. Exposure to environmental factors in the last trimester causes the defect.
 - d. Speech and eating are not affected.

ANS: B

23. Oral candidiasis is considered to:
- a. be a common bacterial infection in infants and young children.
 - b. cause painful ulcerations in the mucosa and tongue.
 - c. cause white patches in the mucosa that cannot be scraped off.
 - d. be an opportunistic fungal infection of the mouth.

ANS: D

24. Why does herpes simplex infection tend to recur?
- a. Active infection is usually asymptomatic.
 - b. The virus builds up a resistance.
 - c. The virus persists in latent form in sensory nerve ganglia.
 - d. The virus mutates; therefore, no effective immunity develops.

ANS: C

25. What does the term periodontitis refer to?

- a. Erosion of the enamel tooth surface
- b. Bacterial damage to the teeth and surrounding alveolar bone
- c. Inflammation and infection of the gingivae
- d. Formation of calcified plaque on the tooth

ANS: B

26. What is/are common location(s) for oral cancer?

- a. Floor of the mouth or tongue borders
- b. Mucosa lining the cheeks
- c. Hard and soft palate
- d. Gingivae near the teeth

ANS: A

27. What is a common cause of hiatal hernia?

- a. An abnormally long esophagus
- b. Increased intra-abdominal pressure
- c. Stenosis of the hiatus in the diaphragm
- d. A small fundus in the stomach

ANS: B

28. What is a common sign of acute gastritis?

- a. Colicky right upper quadrant pain
- b. Vomiting and anorexia
- c. Projectile vomiting after eating
- d. Diarrhea with abdominal distention

ANS: B

29. What does the pathophysiology of chronic gastritis include?

- a. Atrophy of the gastric mucosa with decreased secretions
- b. Hyperchlorhydria and chronic peptic ulcers
- c. Frequent vomiting and diarrhea
- d. Episodes of acute inflammation and edema of the mucosa

ANS: A

30. What is a common cause of gastroenteritis due to Salmonella?

- a. Unrefrigerated custards or salad dressings
- b. Poorly canned foods
- c. Raw or undercooked poultry or eggs
- d. Contaminated water

ANS: C

31. Which of the following individuals is likely to develop acute gastritis?

- a. A long-term, heavy cigarette smoker
- b. Patient with arthritis taking enteric-coated aspirin on a daily basis
- c. A person with an autoimmune reaction in the gastric mucosa
- d. An individual with an allergy to shellfish

ANS: D

32. What does congenital pyloric stenosis involve?

- a. Absence of peristalsis in the lower section of the stomach
- b. Failure of an opening to develop between the stomach and duodenum
- c. Hypertrophy of smooth muscle in the pylorus
- d. Thickening of the gastric wall due to chronic inflammation

ANS: C

33. A patient with acquired pyloric stenosis would likely:

- a. have an increase in appetite.
- b. have chronic diarrhea.
- c. develop severe colicky pains.
- d. vomit undigested food from previous meals.

ANS: D

34. Prolonged or severe stress predisposes to peptic ulcer disease because:

- a. of reduced blood flow to the gastric wall and mucous glands.
- b. of reduced bicarbonate content in bile and pancreatic secretions.
- c. stress increases the number of acid- and pepsinogen-secreting cells.
- d. increased epinephrine increases motility.

ANS: A

35. The pathophysiology of peptic ulcer disease may involve any of the following EXCEPT:

- a. decreased resistance of the mucosal barrier.
- b. increased stimulation of pepsin and acid secretions.
- c. infection by *H. pylori*.
- d. increased stimulation of mucus-producing glands.

ANS: D

36. Which of the following would a perforated gastric ulcer likely cause?

- a. Severe anemia
- b. Chemical peritonitis
- c. Severe gastric hemorrhage
- d. Pyloric obstruction

ANS: B

37. What is frequently the first manifestation of stress ulcers?

- a. Abdominal discomfort between meals and at night

- b. Nausea and diarrhea
- c. Hematemesis
- d. Sharp colicky pain with food intake

ANS: C

38. What would be the result of chronic bleeding from gastric carcinoma?

- a. Occult blood in the stool and anemia
- b. Hematemesis and shock
- c. Abdominal pain and distention
- d. Red blood on the surface of the stool

ANS: A

39. Following gastric resection, the onset of nausea, cramps, and dizziness immediately after meals indicates:

- a. a large volume of chyme has entered the intestines, causing distention.
- b. severe hypoglycemia has developed.
- c. the pylorus is restricting the flow of chyme.
- d. bile and pancreatic secretions are irritating the small intestine.

ANS: A

40. Bilirubin is a product of:

- a. hemolysis of red blood cells (RBCs) and breakdown of hemoglobin.
- b. production of excess chyme and bile.
- c. mixing of undigested food and gastric secretions.
- d. accumulation of white blood cells (WBCs) due to infection.

ANS: A

41. Why does mild hyperbilirubinemia occur in newborns?

- a. Blood incompatibility between mother and child

- b. Damage to many erythrocytes during the birth process
- c. Poor circulation and albumin transport for bilirubin
- d. Immature liver cannot process bilirubin quickly enough

ANS: D

42. Predisposing factors to cholelithiasis include excessive:

- a. bilirubin or cholesterol concentration in the bile.
- b. water content in the bile.
- c. bile salts in the bile.
- d. bicarbonate ions in the bile.

ANS: A

43. What is the major effect when a gallstone obstructs the cystic duct?

- a. Intrahepatic jaundice
- b. Acute pancreatitis
- c. Severe colicky pain in upper right quadrant
- d. Inflammation and infection in the gallbladder

ANS: C

44. Obstruction of the biliary tract by gallstones is referred to as:

- a. cholelithiasis.
- b. cholecystitis.
- c. cholangitis.
- d. choledocholithiasis.

ANS: D

45. Which of the following applies to hepatitis A infection?

- a. It is also called serum hepatitis.

- b. It is transmitted by the fecal-oral route.
- c. It contains a double strand of DNA.
- d. It frequently leads to chronic hepatitis.

ANS: B

46. What can be concluded if the hepatitis B antigen level remains high in the serum?

- a. Acute infection is present.
- b. Chronic infection has developed.
- c. Liver failure is in progress.
- d. The usual prolonged recovery from any viral infection is occurring.

ANS: B

47. What is the most common type of hepatitis transmitted by blood transfusion?

- a. HAV
- b. HBV
- c. HCV
- d. HEV

ANS: C

48. During the course of a hepatitis B infection, the onset of jaundice occurs in the:

- a. incubation period.
- b. preicteric stage.
- c. icteric stage.
- d. posticteric stage.

ANS: C

49. What is the likely effect of long-term exposure to a hepatotoxin?

- a. Full recovery to normal tissue after the toxic material has been removed
- b. Acute onset of vomiting, steatorrhea, and jaundice

- c. Continued mild inflammation of the liver without permanent damage
- d. Gradual irreversible damage to the liver and cirrhosis

ANS: D

50. What indicates the presence of third-stage alcohol hepatitis?

- a. Below normal blood levels of AST and ALT
- b. Upper left quadrant tenderness and dull pain
- c. A small, firm, nodular liver and portal hypertension
- d. Decreased production of blood clotting factors

ANS: D

51. A factor that may precipitate encephalopathy with cirrhosis is the elevated:

- a. serum urea.
- b. conjugated bilirubin.
- c. serum ammonia.
- d. serum pH.

ANS: C

52. In patients with cirrhosis, serum ammonia may increase when:

- a. ingesting excessive lipids.
- b. bleeding occurs in the digestive tract.
- c. an increase in unconjugated bilirubin occurs in the serum.
- d. less bile is produced.

ANS: B

53. What is the primary cause of esophageal varices?

- a. Increased hydrostatic pressure in the veins
- b. Alcohol irritating the mucosa

- c. Failure to inactivate estrogen
- d. Poor nutritional status

ANS: A

54. What is the primary cause of increased bleeding tendencies associated with cirrhosis?

- a. Anemia and leucopenia
- b. Jaundice and pruritus
- c. Recurrent infections
- d. Deficit of vitamin K and prothrombin

ANS: D

55. Which factors contribute to ascites in patients with cirrhosis?

- a. Increased aldosterone and deficit of albumin
- b. Severe anemia and increased serum bilirubin
- c. Hypokalemia and increased serum ammonia
- d. Hyperproteinemia and persistent hypotension

ANS: A

56. Which of the following is a major cause of primary hepatocellular cancer?

- a. Metastatic tumors
- b. Acute hepatitis
- c. Long-term exposure to certain chemicals
- d. Chronic cholelithiasis

ANS: C

57. What causes massive inflammation and necrosis in acute pancreatitis?

- a. Formation of multiple thrombi and ischemia
- b. Infection by intestinal microbes

- c. Immune complex reaction
- d. Autodigestion of tissue by pancreatic enzymes

ANS: D

58. How does chemical peritonitis and shock frequently result from acute pancreatitis?
- a. Inflammation and increased vascular permeability of the peritoneum affect fluid balance.
 - b. Erosion in the intestinal wall causes release of bacteria.
 - c. Fat necrosis and hypocalcemia develop.
 - d. Secretions from the pancreas and intestine become more acidic.

ANS: A

59. Malnutrition may develop in children with celiac disease because of:
- a. damage to the intestinal villi.
 - b. obstruction in the pancreatic ducts.
 - c. acidosis, preventing activation of digestive enzymes.
 - d. insufficient bile for absorption.

ANS: A

60. Which of the following best describes steatorrhea?
- a. A light gray-colored stool
 - b. A tarry black stool
 - c. Bulky, fatty, foul-smelling stools
 - d. Watery stools with mucus and blood

ANS: C

61. What is the dietary requirement for a child with celiac disease?
- a. Low sodium, high fat
 - b. High carbohydrate, low protein
 - c. High calorie with vitamin supplements

- d. Gluten-free

ANS: D

62. What are the typical changes occurring with Crohns disease?

- a. Degeneration and flattening of the villi in the small intestine
- b. Multiple herniations of the mucosa through weak areas of the muscularis
- c. A continuous area of mucosal inflammation and ulceration in the rectum and colon
- d. Inflamed areas of the wall of the ileum alternating with thick fibrotic or normal areas

ANS: D

63. Stools that are more liquid and contain mucus and frank blood are typical of:

- a. diverticulitis.
- b. ulcerative colitis.
- c. Crohns disease.
- d. celiac disease.

ANS: B

64. How may a fistula form with Crohns disease?

- a. Lack of peristalsis, leading to dilated areas of intestine
- b. Fibrosis and thickening of the wall, causing obstruction
- c. Erosion of the mucosa, causing bleeding
- d. Recurrent inflammation, necrosis, and fibrosis, forming a connection between intestinal loops

ANS: D

65. How does iron deficiency anemia frequently develop with ulcerative colitis?

- a. Loss of surface area for absorption in the ileum
- b. Bone marrow depression by toxic wastes
- c. Chronic blood loss in stools

- d. Insufficient hydrochloric acid for iron absorption

ANS: C

66. What is the cause of inflammatory bowel disease?

- a. Physical and emotional stress
- b. An autoimmune reaction
- c. A combination of recessive genes
- d. Idiopathic

ANS: D

67. What pain is typical of diverticulitis?

- a. Lower left quadrant
- b. Lower right quadrant
- c. Sharp, colicky, periumbilical
- d. Lower abdominal pain, radiating into the groin

ANS: A

68. What usually initiates acute appendicitis?

- a. Infection in the appendix
- b. An episode of severe diarrhea
- c. Obstruction of the lumen of the appendix
- d. Eating a low-fiber diet

ANS: C

69. With acute appendicitis, localized pain and tenderness in the lower right quadrant results from:

- a. increased peristalsis in the adjacent colon.
- b. inflammation and stretching of the appendiceal wall.
- c. increased gas and fluid inside the appendix.

- d. local inflammation of the parietal peritoneum.

ANS: D

70. How does localized peritonitis develop from acute appendicitis before rupture?

- a. The omentum walls off the inflamed area.
- b. Intestinal bacteria escape through the necrotic appendiceal wall.
- c. The obstructing object inside the appendix causes edema.
- d. Bacteria escape into the circulating blood.

ANS: B

71. What is a typical early sign of cancer in the ascending colon?

- a. Change in shape of the stool
- b. Incomplete emptying
- c. Mild but persistent pain in the lower left quadrant
- d. Occult blood in the stool

ANS: D

72. To which site does colon cancer usually first metastasize?

- a. Lungs
- b. Stomach
- c. Liver
- d. Spleen

ANS: C

73. How does a volvulus cause localized gangrene in the intestine?

- a. Hypotension and shock cause ischemia.
- b. The mesenteric arteries are compressed in the twisted section of intestine.
- c. A section of intestine herniates between the muscles of the abdominal wall.
- d. The distention of the intestinal wall causes increased permeability of the tissue.

ANS: B

74. Which of the following is a typical indicator of an intestinal obstruction caused by paralytic ileus?

- a. Excessive audible bowel sounds
- b. Intermittent colicky pain
- c. Severe steady abdominal pain
- d. Visible peristalsis

ANS: C

75. A congenital condition in which parasympathetic innervation is missing from a section of the colon, impairing motility is referred to as:

- a. diverticulitis.
- b. Crohns disease.
- c. irritable bowel syndrome.
- d. Hirschsprungs disease.

ANS: D

76. What causes hypovolemic shock to develop with intestinal obstruction?

- a. Continued vomiting and fluid shift into the intestine
- b. Hemorrhage into the intestine
- c. Rupture of the intestinal wall
- d. Repeated bouts of severe diarrhea

ANS: A

77. What causes the characteristic rigid abdomen found in the patient with peritonitis?

- a. Increased fluid and gas, causing abdominal distention
- b. Inflammation of the peritoneum and organs, causing a firm mass in the abdomen
- c. Inflamed peritoneum, resulting in reflex abdominal muscle spasm

- d. Voluntary contraction of the abdominal muscles as a protective mechanism

ANS: C

78. What would be the likely outcome from chemical peritonitis related to a perforated gallbladder?

- a. Leakage of intestinal bacteria into blood and the peritoneal cavity
- b. Massive hemorrhage and shock
- c. Breakdown of the gallstones
- d. Increasing peristalsis with intermittent painful spasms

ANS: A

79. How does pelvic inflammatory disease frequently lead to bacterial peritonitis?

- a. Chemical irritation by excessive ovarian and uterine secretions causes inflammation.
- b. Ulceration and perforation of the uterus allow the bacteria to spread.
- c. Infection spreads through the fallopian tubes directly into the peritoneal cavity.
- d. Gangrene in the uterine wall spreads through into the pelvic cavity.

ANS: C

80. Choose the significant change in arterial blood gases expected with prolonged severe vomiting:

- a. Increased bicarbonate ion, increased PCO₂, serum pH 7.4
- b. Decreased bicarbonate ion, decreased PCO₂, serum pH 7.35
- c. Increased bicarbonate ion, decreased PCO₂, serum pH 7.35
- d. Decreased bicarbonate ion, increased PCO₂, serum pH 7.45

ANS: B

81. When dehydration reduces the compensation possible for acidosis resulting from prolonged diarrhea, what significant change in arterial blood gases indicates this?

- a. Serum pH would rise above 7.45.
- b. Serum bicarbonate levels would increase, and serum pH would remain in normal range.
- c. Serum bicarbonate levels would decrease, and serum pH would drop below 7.35.

- d. Serum PCO₂ would rise, and serum pH would be around 7.4.

ANS: C

82. Bile pigment gallstones are more common in individuals dealing with:

- a. obesity.
- b. high cholesterol levels.
- c. alcoholic cirrhosis.
- d. use of oral contraceptives.

ANS: C

83. Dehydration limits compensation available for an acid-base imbalance resulting from prolonged vomiting and diarrhea because:

- a. hypovolemia limits renal function.
- b. increased respirations cannot remove more H⁺.
- c. increased ADH blocks secretion of H⁺.
- d. more sodium and potassium ions are retained.

ANS: A

84. Which of the following is the most frequent location of peptic ulcers?

- a. Lower esophagus
- b. Antrum of the stomach
- c. Proximal duodenum
- d. Distal duodenum

ANS: C

85. In peptic ulcer disease, which of the following does NOT decrease the resistance of the mucosal barrier?

- a. Prolonged vasoconstriction
- b. Excessive glucocorticoid intake
- c. Proteases and cytotoxins from *H. pylori*

d. Decreased vagal stimulation

ANS: D

Chapter 20: The Liver and Biliary System

1. Abnormally high accumulation of bilirubin in the blood causes:
 - A) jaundice.
 - B) cholestasis.
 - C) xanthomas.
 - D) biliary cirrhosis.
2. The mechanisms of liver damage in viral hepatitis include:
 - A) direct cellular injury.
 - B) fatty liver changes.
 - C) disrupted bile flow.
 - D) bile duct inflammation.
3. Alcoholic liver disease manifests in three stages. The intermediate stage, alcoholic hepatitis, is characterized by liver cell:
 - A) necrosis.
 - B) nodules.
 - C) atrophy.
 - D) hypertrophy.
4. A major factor in the development of hepatic encephalopathy is:
 - A) hypersplenism.

- B) high sodium level.
- C) neurotoxin accumulation.
- D) steroid hormone deficiency.

5. Kupffer cells function to remove harmful substances or cells from the portal blood as it moves through the venous sinusoids.

- A) filters
- B) channels
- C) phagocytes
- D) cytotoxic cells

6. Both prehepatic and posthepatic causes of portal hypertension include the formation of:

- A) fibrous nodules.
- B) venous thrombosis.
- C) collateral circulation.
- D) portosystemic shunts.

7. The late manifestations of cirrhosis are related to liver failure and:

- A) hepatomegaly.
- B) diffuse liver fibrosis.
- C) portal hypertension.
- D) hepatorenal syndrome.

8. Factors that contribute to the formation of gallstones, or acute cholelithiasis, include:

- A) chronic pancreatitis.
- B) rapid elimination of bile.
- C) gallbladder inflammation.
- D) excessive alcohol intake.

9. The patient has right upper quadrant pain caused by acute cholelithiasis. If the common bile duct becomes obstructed, manifestations will also include:

- A) ascites.
- B) vomiting.
- C) bilirubinuria.
- D) hemorrhage.

10. Acute pancreatitis involves activated pancreatic enzymes that escape into surrounding tissues to cause .

- A) fatty deposits
- B) autodigestion
- C) bowel obstruction
- D) abscess formation

11. Individuals with liver disease often experience the effects of excess serum ammonia as a result of impairment of the liver's ability to process ammonia. How does the liver process ammonia in healthy individuals?

- A) By converting it into bilirubin which is then excreted intestinally
- B) By processing ammonia into nitrogen and hydrogen ions for excretion
- C) By processing it into urea and releasing it into the circulation
- D) By combining it with oxygen to create ammonium oxide

12. A patient's longstanding diagnosis of congenital hemolytic anemia often manifests itself with jaundice. What type of jaundice does this patient most likely experience?

- A) Prehepatic

- B) Intrahepatic
- C) Posthepatic
- D) Infectious

13. A decrease in the serum level of which of the following substances is suggestive of liver injury?

- A) g-Glutamyltransferase (GGT)
- B) Albumin
- C) Alanine aminotransferase (ALT)
- D) Alkaline phosphatase

14. Antibody testing has confirmed that a man is positive for hepatitis A virus (HAV). Which of the patients statements suggests that he understands his new diagnosis?

- A) I guess Im an example of why you should always use condoms.
- B) Im embarrassed that Ill be a carrier of hepatitis from now on.
- C) Im still trying to deal with the fact that this will forever change my life.
- D) I dont know why I didnt bother to get vaccinated against this.

15. A 16-year-old girl has been admitted to the emergency department after ingesting 20 g of acetaminophen (Tylenol) in a suicide attempt. The care team would recognize that this patient faces a severe risk of:

- A) acute fulminant hepatitis.
- B) hepatitis D virus infection.
- C) secondary biliary cirrhosis.
- D) portal hypertension.

16. Which of the following factors accounts for the poor prognosis that typically accompanies a diagnosis of primary hepatocellular cancer?

- A) Surgical options do not exist because removal of all or part of the liver is a threat to health.
- B) Liver cancer typically metastasizes at a much earlier stage than other cancers.
- C) Liver tumors are poorly differentiated due to the low density of hepatic tissue.
- D) The nonspecific symptomatology of liver cancer means that diagnosis often happens at a late stage.

17. Which of the following factors is most strongly associated with the pathogenesis of gallstones?

- A) Excess serum ammonia and urea levels
- B) Portal hypertension
- C) Abnormalities or stasis of bile
- D) High cholesterol diet

18. Which of the following individuals most likely faces the highest risk of developing chronic pancreatitis?

- A) A woman who has six to eight drinks each evening
- B) A man who has become profoundly ill during a tropical vacation
- C) A woman who takes two Tylenol tablets five to six times a day
- D) An obese man who has a high-fat diet and has a sedentary lifestyle

19. The nurse who is providing care for a patient with pancreatic cancer should prioritize which of the following assessments?

- A) Assessment for ascites and close monitoring of fluid balance
- B) Respiratory assessment and monitoring of arterial blood gases

C) Vigilant monitoring of blood glucose levels

D) Assessment for deep vein thrombosis

20. Which of the following signs and symptoms is most suggestive of acute cholecystitis?

A) Upper right quadrant or epigastric pain

B) Fever and sudden abdominal distention

C) Appearance of undigested fat in feces

D) Nausea resulting in greenish vomitus

Answer Key

1. A

2. A

3. A

4. C

5. C

6. B

7. C

8. C

9. C

10. B

11. C

12. A

13. B

14. D

15. A

16. A

- 17. C
- 18. A
- 19. D
- 20. A

Chapter 21: The Pancreas

1. Which patient statement indicates that the patient requires additional teaching about an endoscopic retrograde cholangiopancreatography?

- a. Right after the test, I want breakfast with black coffee.
- b. The instrument will be put down my throat.
- c. I haven't had anything to eat or drink since 9 PM last night.
- d. My doctor said I could have medicine to relax me before the test.

ANS: A

2. The nurse is aware that an elevated serum amylase is diagnostic of pancreatitis at an early stage as an elevation can be assessed as early as _____ after the onset of pancreatic disease.

- a. 2 hours
- b. 8 hours
- c. 24 hours
- d. 36 hours

ANS: A

An increase in the serum amylase can be detected as early as 2 hours after the onset of pancreatic disease. In simple acute pancreatitis, the level returns to normal in about 36 hours. In chronic disease it remains elevated.

3. Which factors are most commonly associated with pancreatitis?

- a. Coronary artery disease
- b. Alcoholism and biliary tract disease

- c. Cirrhosis
- d. History of myocardial infarction

ANS: B

Alcoholism and biliary tract disease are the two factors most commonly associated with pancreatitis.

4. A patient with pancreatitis is NPO. The patient asks the nurse why he is unable to have anything by mouth. Which of the following is the best response?

- a. Diagnostic tests depend on you not eating anything.
- b. The pancreas is stimulated whenever you eat or drink, and causes pain.
- c. Eating causes the need for a bowel movement, which excretes your medication too rapidly.
- d. Resting your GI tract will cure your pancreatitis.

ANS: B

Food and fluids are withheld to avoid stimulating pancreatic activity, and IV fluids are administered.

5. Why is morphine contraindicated in the patient with pancreatitis?

- a. Demerol (meperidine) is less expensive.
- b. Tylenol is more effective at managing this type of pain.
- c. Morphine may cause spasms of the sphincter of Oddi.
- d. These patients do not experience pain.

ANS: C

A common complaint is constant, severe pain; in such cases, meperidine (Demerol) PCA is often administered. Morphine may cause spasms of the sphincter of Oddi.

6. Which factors may increase a patient's risk of developing cancer of the pancreas?

- a. Diet high in carbohydrates and dairy products
- b. Cardiovascular disease and glaucoma
- c. Tea and cola consumption
- d. Cigarette smokers and people with diabetes mellitus

ANS: D

The cause of cancer of the pancreas is unknown, but it is diagnosed more often in cigarette smokers, people exposed to chemical carcinogens, and people with diabetes mellitus and pancreatitis.

7. What should the nurse do as part of the preparation for an endoscopic retrograde cholangiopancreatography (ERCP)? (Select all that apply.)

- a. Confirm that a recent chest x-ray is on file
- b. Confirm the presence of a consent form
- c. Warn patient that the procedure will take about 3 hours
- d. Confirm the presence of a prothrombin time/INR
- e. Withhold food and drink for 4 hours

ANS: B, D

Before the ERCP the patient will be held NPO for 8 hours. It is necessary that a consent form be signed as well as evidence of a prothrombin time INR.

8. The tumor marker that is elevated in patients with pancreatic cancer is . ANS:

CA19-9

The tumor marker CA19-9 is elevated in the presence of pancreatic cancer.

9.A occurs when the body encapsulates the autodigestive debris in the pancreatic tissue, frequently becoming an abscess.

ANS:

pseudocyst

A pseudocyst occurs when the body encapsulates the autodigestive debris in the pancreatic tissue.

Chapter 22: The Kidney

1. Which of the following describes the correct flow of blood in the kidney?

- a. Afferent arteriole to the peritubular capillaries to the venule

- b. Efferent arteriole to the glomerular capillaries to the peritubular capillaries
- c. Peritubular capillaries to the glomerular capillaries to the venule
- d. Afferent arteriole to the glomerular capillaries to the efferent arteriole

ANS: D

2. Which of the following describes the flow of filtrate in the kidney?
- a. The collecting duct to the distal convoluted tubule to the renal pelvis
 - b. Bowmans capsule to the proximal convoluted tubule to the loop of Henle
 - c. The loop of Henle to the collecting duct to Bowmans capsule
 - d. The distal convoluted tubule to the loop of Henle to the collecting duct

ANS: B

3. Which of the following describes the normal flow of urine?
- a. Collecting duct to the renal pelvis to the ureter to the bladder
 - b. Renal pelvis to the urethra to the bladder to the ureter
 - c. Ureter to the renal pelvis to the urethra to the bladder
 - d. Collecting duct to the ureter to the urethra

ANS: A

4. Which statement about the bladder is TRUE?
- a. The bladder wall lacks rugae.
 - b. Three openings from the urinary bladder form the trigone.
 - c. It contracts when stimulated by the sympathetic nervous system.
 - d. Continuous peristalsis in the bladder wall promotes urine flow.

ANS: B

5. Which of the following increases glomerular filtration rate?
- a. Increased plasma osmotic pressure

- b. Dilation of the efferent arteriole
- c. Increased hydrostatic pressure in the glomerular capillaries
- d. Constriction of the afferent arteriole

ANS: C

6. By what process is water reabsorbed from the filtrate?
- a. Osmosis
 - b. Active transport
 - c. Cotransport
 - d. Capillary action

ANS: A

7. Which substance directly controls the reabsorption of water from the collecting ducts?
- a. Renin
 - b. Aldosterone
 - c. Angiotensin
 - d. Antidiuretic hormone

ANS: D

8. Under what circumstances do cells in the kidneys secrete renin?
- a. The urine pH decreases.
 - b. Blood flow in the afferent arteriole decreases.
 - c. Serum potassium levels are high.
 - d. Serum osmotic pressure increases.

ANS: B

9. Which of the following should be present in the filtrate in the proximal convoluted tubule?
- a. Plasma proteins
 - b. Erythrocytes

- c. Sodium ions
- d. Leukocytes

ANS: C

10. From the following, choose the substance likely to appear in the urine when the glomerulus is inflamed.

- a. Albumin
- b. Urea
- c. Sodium
- d. Creatinine

ANS: A

11. Involuntary urination by a child after age 4 or 5, when bladder control is expected, is referred to as:

- a. enuresis.
- b. stress incontinence.
- c. micturition.
- d. overflow incontinence.

ANS: A

12. When a respiratory infection with high fever is present in the body, how would the kidney tubules maintain normal pH of body fluids?

- a. Increase the flow of filtrate.
- b. Secrete more acids and reabsorb more bicarbonate ions.
- c. Excrete a larger volume of more dilute urine.
- d. Retain more potassium ions in exchange for sodium ions.

ANS: B

13. When comparing normal kidney function with dialysis, which of the following mechanisms is not possible in dialysis?

- a. Diffusion
- b. Osmosis
- c. Ultrafiltration
- d. Active transport

ANS: D

14. What is the cause of most cases of pyelonephritis?

- a. An ascending infection by *E. coli*
- b. Abnormal immune response, causing inflammation
- c. Dialysis or other invasive procedure
- d. Severe pH imbalance of urine

ANS: A

15. Which disease is manifested by dysuria and pyuria?

- a. Nephrotic syndrome
- b. Cystitis
- c. Glomerulonephritis
- d. Urolithiasis

ANS: B

16. Why may acute pyelonephritis and cystitis follow untreated prostatitis?

- a. Microbes spread through the circulation.
- b. Antibodies have not yet formed.
- c. There is no effective treatment.
- d. There is a continuous mucosa along the involved structures.

ANS: D

17. Pyelonephritis may be distinguished from cystitis by the presence in pyelonephritis of:

- a. microbes, leukocytes, and pus in the urine.
- b. painful micturition.
- c. urgency and frequency.
- d. urinary casts and flank pain.

ANS: D

18. In a case of acute pyelonephritis, what is the cause of flank pain?

- a. Inflammation, causing ischemia in the tubules
- b. Inflammation, stretching the renal capsule
- c. Increasing glomerular permeability, creating an increased volume of filtrate in the kidney
- d. Microbes irritating the tissues

ANS: B

19. Which pathophysiological process applies to acute post-streptococcal glomerulonephritis?

- a. Streptococcal infection affects both the glomerular and tubule functions
- b. Ischemic damage occurs in the tubules, causing obstruction and decreased glomerular filtration rate (GFR)
- c. Immune complexes deposit in glomerular tissue, causing inflammation
- d. Increased glomerular permeability for unknown reasons

ANS: C

20. What causes the dark urine associated with acute post-streptococcal glomerulonephritis?

- a. Blood and protein leaking through the capillary into the filtrate
- b. Proteinuria and microscopic hematuria from the inflammation
- c. Pyuria from inflammatory exudate
- d. Bleeding from ulcerations in the kidneys

ANS: A

21. Renal disease frequently causes hypertension because:

- a. albuminuria increases vascular volume.
- b. congestion and ischemia stimulate release of renin.
- c. antidiuretic hormone (ADH) secretion is decreased.
- d. damaged tubules absorb large amounts of filtrate.

ANS: B

22. Urinary casts are present with acute post-streptococcal glomerulonephritis because:

- a. large numbers of microbes and leukocytes enter the filtrate.
- b. ruptured capillaries release debris into the tubules.
- c. normal reabsorption of cells and proteins cannot take place.
- d. inflamed tubules compress red blood cells (RBCs) and protein into a typical mass.

ANS: D

23. Which disease would cause an increased ASO titer and elevated serum ASK?

- a. Nephrotic syndrome
- b. Acute post-streptococcal glomerulonephritis
- c. Pyelonephritis
- d. Polycystic kidney

ANS: B

24. Why does metabolic acidosis develop with bilateral kidney disease?

- a. Tubule exchanges are impaired.
- b. GFR is increased.
- c. Serum urea is increased.
- d. More bicarbonate ion is produced.

ANS: A

25. What is the first indicator in the arterial blood gases of acidosis caused by glomerulonephritis?

- a. Increased carbonic acid
- b. Increased bicarbonate ion
- c. A pH less than 7.35
- d. Decreased bicarbonate ion

ANS: D

26. What would be the long-term effects of chronic infection or inflammation of the kidneys?

- a. Dehydration and hypovolemia
- b. Gradual necrosis, fibrosis, and development of uremia
- c. Sudden anuria and azotemia
- d. Severe back or flank pain

ANS: B

27. What factors contribute to headache, anorexia, and lethargy with kidney disease?

- 1. Increased blood pressure
 - 2. Elevated serum urea
 - 3. Anemia
 - 4. Acidosis
- a. 1 only
 - b. 2, 4
 - c. 1, 3, 4
 - d. 1, 2, 3, 4

ANS: D

28. What are the significant signs of nephrotic syndrome?

- a. Hyperlipidemia and lipiduria
- b. Pyuria and leucopenia

- c. Hypertension and heart failure
- d. Gross hematuria and pyuria

ANS: A

29. Why does blood pressure often remain near normal in patients with nephrotic syndrome?
- a. Massive amounts of fluid are lost from the body with polyuria.
 - b. Renin and aldosterone are no longer secreted.
 - c. Tubules do not respond to ADH and aldosterone.
 - d. Hypovolemia results from fluid shift to the interstitial compartment.

ANS: D

30. Common causes of urolithiasis include all of the following EXCEPT:
- a. hypercalcemia.
 - b. hyperlipidemia.
 - c. inadequate fluid intake.
 - d. hyperuricemia.

ANS: B

31. Which of the following results from obstruction of the left ureter by a renal calculus?
- a. Mild flank pain on the affected side
 - b. Hydronephrosis in both kidneys
 - c. Immediate cessation of urine production
 - d. An attack of renal colic

ANS: D

32. What does hydronephrosis lead to?
- a. Ischemia and necrosis in the compressed area
 - b. Multiple hemorrhages in the kidney

- c. Severe colicky pain radiating into the groin
- d. Increased GFR

ANS: A

33. Which of the following is a predisposing factor to bladder cancer?

- a. Prostatic cancer
- b. Hormonal abnormalities
- c. Exposure to chemicals and cigarette smoke
- d. Presence of embryonic tissue

ANS: C

initial sign of adenocarcinoma of the kidney?

- a. Gross hematuria
- b. Microscopic hematuria
- c. Sharp flank pain
- d. Oliguria

ANS: B

35. Which of the following does NOT usually result from nephrosclerosis?

- a. Secondary hypertension
- b. Chronic renal failure
- c. Acute renal failure
- d. Increased renin and aldosterone secretions

ANS: C

36. Which of the following relates to polycystic kidney disease?

- a. It affects only one of the kidneys.
- b. It results in gradual degeneration and chronic renal failure.
- c. The kidneys are displaced and the ureters are twisted.

- d. The prognosis is good because there is adequate reserve for normal life.

ANS: B

37. Which of the following is related to Wilms tumor?

- a. Direct exposure to carcinogens
- b. Hormonal imbalance
- c. Repeated infections
- d. A genetic defect

ANS: D

38. With severe kidney disease, either hypokalemia or hyperkalemia may occur and cause:

- a. cardiac arrhythmias.
- b. encephalopathy.
- c. hypervolemia.
- d. skeletal muscle twitch or spasm.

ANS: A

39. Which of the following indicates the early stage of acute renal failure?

- a. Polyuria with urine of fixed and low specific gravity
- b. Hypotension and increased urine output
- c. Development of decompensated acidosis
- d. Very low GFR and increased serum urea

ANS: D

40. What is/are a cause(s) of acute tubule necrosis and acute renal failure?

- a. Prolonged circulatory shock
- b. Sudden significant exposure to nephrotoxins
- c. Crush injuries or burns

- d. All of the above

ANS: D

41. Which of the following would likely cause chronic renal failure?

- a. Cystitis with pyelonephritis in the right kidney
- b. Circulatory shock
- c. Diabetes
- d. Obstruction of a ureter by a renal calculus

ANS: C

42. What causes polyuria during the stage of renal insufficiency?

- a. Loss of tubule function
- b. Increased blood pressure
- c. Decreased aldosterone secretion
- d. Increased GFR

ANS: A

43. What is the primary reason for hypocalcemia developing during end-stage renal failure or uremia?

- a. Decreased parathyroid hormone secretion
- b. Insufficient calcium in the diet
- c. Excessive excretion of calcium ions in the urine
- d. A deficit of activated vitamin D and hyperphosphatemia

ANS: D

44. Cystitis is more common in females because:

- a. the mucosa in the urinary tract is continuous.
- b. the urethra is short, wide, and adjacent to areas with resident flora.
- c. the pH of urine is more acidic in females.

- d. females have a higher incidence of congenital anomalies.

ANS: B

45. Which of the following indicate a decreased GFR?

- a. Increased serum urea and decreased serum bicarbonate
- b. Urine with low specific gravity and dark color
- c. Albuminuria and hematuria
- d. Hyponatremia and hypokalemia

ANS: A

46. Which of the following is NOT likely to lead to hydronephrosis?

- a. Renal calculi
- b. Pyelonephritis
- c. Nephrosclerosis
- d. Benign prostatic hypertrophy

ANS: C

47. Which of the following congenital defects is a common cause of cystitis in young children?

- a. Polycystic kidney
- b. Horseshoe kidney
- c. Hypoplasia of the kidney
- d. Vesicoureteral reflux

ANS: D

48. Which factor contributes to severe anemia in individuals with chronic renal failure?

- a. Increased erythropoietin secretion
- b. Limited protein intake
- c. Compensatory increase in bone marrow activity
- d. Inability to absorb vitamin B12 and iron

ANS: B

49. When acidosis becomes decompensated in renal failure, a key indicator is:
- a. increased PCO₂.
 - b. increased bicarbonate ion.
 - c. serum pH dropping below 7.35.
 - d. serum buffer ratio of 20 bicarbonate ions to 1 carbonic acid.

ANS: C

50. What is the primary action of the diuretic furosemide?
- a. Decreased reabsorption of sodium and water
 - b. Decreased reabsorption of H⁺ in the tubules
 - c. Increased secretion of antidiuretic hormone
 - d. Inhibition of renin

ANS: A

51. Which of the following causes acute renal failure?
- a. Polycystic kidney disease
 - b. Pyelonephritis in the right kidney
 - c. Nephrosclerosis
 - d. Bilateral acute glomerulonephritis

ANS: D

52. Which of the following is a significant indicator of renal insufficiency?
- a. Urine with pH of 5
 - b. Increased serum urea and creatinine
 - c. Urine with high specific gravity
 - d. Decreased blood pressure

ANS: B

53. Uremic signs of renal failure include all of the following EXCEPT:

- a. encephalopathy.
- b. high blood pressure.
- c. osteodystrophy.
- d. azotemia and acidosis.

ANS: B

54. Choose the basic cause of osteodystrophy associated with chronic renal failure.

- a. Development of hypercalcemia
- b. Deficit of parathyroid hormone
- c. Failure of the kidney to activate vitamin D
- d. Excessive loss of phosphate ion

ANS: C

55. Agenesis is often not diagnosed because:

- a. the kidney is displaced from its normal position.
- b. it is a genetic defect and asymptomatic until mid-life.
- c. the two functioning kidneys are fused together.
- d. it is usually asymptomatic as one kidney provides adequate function.

ANS: D

Chapter 23: The Lower Urinary Tract and Male Reproductive System

1. Smooth muscle relaxation and shunting of blood into the sinusoids is mediated by _____ and results in a penile erection.
 - A) norepinephrine
 - B) nitroglycerine
 - C) nitric oxide
 - D) nicotinic acid
2. Priapism is a condition that causes ischemia as a result of:
 - A) circumcision trauma.

- B) failure of detumescence.
- C) tight retracted foreskin.
- D) fibrous plaque in the penis.

3. Common risk factors for erectile dysfunction due to generalized penile arterial insufficiency include:

- A) cryptorchidism.
- B) cigarette smoking.
- C) testicular torsion.
- D) benign prostate hypertrophy.

4. Squamous cell cancer of the penis is more likely to develop in men with chronic:

- A) erectile dysfunction.
- B) herpes ulcerations.

- C) Peyronie disease.
- D) smegma accumulation.

5. In a hydrocele, excess fluid is present in the:

- A) epididymis.
- B) tunica vaginalis.
- C) pampiniform plexus.
- D) vas deferens ampulla.

6. Testicular torsion, a serious disorder affecting young male individuals, causes:

- A) inguinal herniation.
- B) cancer of the scrotum.
- C) dartos muscle atrophy.
- D) loss of testicular perfusion.

7. Men older than age 50 are at high risk for prostatic hypertrophy with complications that include:
- A) hypospadias.
 - B) scrotal edema.
 - C) urine retention.
 - D) testicular cancer.
8. The major cause of acute prostatitis is:
- A) prostate hyperplasia.
 - B) acute pyelonephritis.
 - C) gram negative
 - D) mucous gland overgrowth.
 - E) coli.
9. The most important factor in the evaluation and treatment of benign prostatic hypertrophy (BPH) is considered to be:
- A) frequency of erectile dysfunction.
 - B) testosterone level management.
 - C) prostate cancer prevention measures.
 - D) subjective symptoms reported by the patient.
10. Cryptorchidism, or undescended testes, is a direct cause of:
- A) infertility.
 - B) paraphimosis.
 - C) prostate cancer.
 - D) low testosterone.

11. Which of the following physiologic processes results from the synthesis and release of testosterone?

- A) Protein catabolism
- B) Musculoskeletal growth
- C) Release of luteinizing hormone (LH) and follicle-stimulating hormone (FSH)
- D) Prostatic hyperplasia

12. A 41-year-old patient has undergone a vasectomy. What is the physiologic basis for this contraception technique?

- A) Spermatogenesis is inhibited because sex hormones may no longer stimulate the Sertoli cells.
- B) Spermatozoa can no longer reach the epididymis and do not survive.
- C) The rete testis becomes inhospitable to sperm.
- D) Sperm can no longer pass through the ductus deferens.

13. A patient has been diagnosed with an anterior pituitary tumor, and synthesis and release of follicle-stimulating hormone has become deranged. What are the potential consequences of this alteration in endocrine function?

- A) Dysfunction of spermatogenesis
- B) Overproduction of luteinizing hormone
- C) Inhibition of testosterone synthesis
- D) Impaired detumescence

14. Which of the following factors constitutes the most significant risk for balanitis xerotica obliterans?

- A) Multiple sexual partners

- B) Androgen deficiency
- C) Uncircumcised penis
- D) Chronic prostatitis

15. Which of the following disorders of the male genitourinary system creates the most urgent need for prompt and aggressive medical treatment?

- A) Spermatocele
- B) Benign prostatic hyperplasia (BPH)
- C) Intravaginal testicular torsion
- D) Erectile dysfunction

16. A 30-year-old man has been diagnosed with mumps orchitis, a disease that has the potential to result in:

- A) hematuria.
- B) hematocele.
- C) sterility.
- D) penile atrophy.

17. After seeking care due to recent history of testicular enlargement and scrotal pain, a 22-year-old college student has been diagnosed with testicular cancer. Which of the patients following statements indicates the need for further teaching?

- A) I cant shake this feeling like Ive received a death sentence.
- B) I have to admit that the prospect of losing a testicle is a bit overwhelming.
- C) I really hope the cancer hasnt spread anywhere, because Ive read that its a possibility.

D) I guess theres some solace in the fact that this cancer wasnt a result of an unhealthy lifestyle.

18. Which of the following assessments is most likely to reveal a potential exacerbation in a 70-year-old patients diagnosis of benign prostatic hyperplasia (BPH)?

- A) Urine testing for microalbuminuria
- B) Blood test for white blood cells and differential
- C) Bladder ultrasound
- D) Sperm morphology testing

19. Which of the following statements about screening for prostate cancer is most accurate?

- A) Digital rectal examination detects the majority of new cases of prostate cancer.
- B) A positive prostate-specific antigen (PSA) test is definitive for prostate cancer.
- C) BPH and prostatitis can confound prostate screening results.
- D) Digital rectal examination and PSA testing have been proven ineffective.

20. Which of the following diagnoses is most likely to require surgical correction?

- A) Hypospadias
- B) Orchitis
- C) Erectile dysfunction
- D)

Answer Spermatocoele

Key

- 1. C
- 2. B
- 3. B
- 4. D
- 5. B

6. D
7. C
8. C
9. D
10. A
11. B
12. D
13. A
14. C
15. C
16. C
17. A
18. C
19. C
20. A

Chapter 24: The Female Reproductive System and Peritoneum

MULTIPLE CHOICE

1. A client tells the nurse that she experiences heavy menstrual bleeding. The nurse would document this condition as being:

1. dysmenorrhea.
2. menorrhagia.
3. metrorrhagia.
4. polymenorrhea.

ANS: 2

Menorrhagia is heavy menstrual bleeding. Metrorrhagia is bleeding between menses. Dysmenorrhea is pain during the menstrual cycle, and polymenorrhea is having menstrual cycles at 2- to 3-week intervals.

2.A client tells the nurse that she has not had menstrual cycles for 2 months since she has been training for a marathon. The nurse would document this clients lack of regular menstrual cycles as being:

1. dysmenorrhea.
2. primary amenorrhea.
3. oligomenorrhea.
4. secondary amenorrhea.

ANS: 4

Secondary amenorrhea is when a woman has normal menstrual cycles but then stops. Dysmenorrhea is pain during the menstrual cycle, and oligomenorrhea is the absence of menstrual cycles for 3 months or longer. Primary amenorrhea is the lack of a menstrual cycle by age 16.

PTS: 1 DIF: Apply REF: Amenorrhea

3.The nurse is documenting that a female client is menopausal because the client has not had a menstrual cycle in:

1. 6 months.
2. 9 months.
3. 12 months.
4. 15 months.

ANS: 3

Women are considered menopausal if they have not had a menstrual cycle for 12 months. A perimenopausal state may exist prior to actual menopause.

PTS: 1 DIF: Apply REF: Menopause

4.A female client is prescribed estrogen (Alora) for hot flashes associated with menopause. Which of the following should the nurse instruct this client regarding this medication?

1. Hot flashes can increase.
2. Weight gain can occur.

3. Breast tenderness and spotting are side effects.
4. Abdominal pain is to be expected.

ANS: 3

The nurse should instruct the client prescribed estrogen (Alora) that side effects include breast tenderness, nausea, depression, headache, and spotting (bleeding). Hot flashes do not increase with this medication. Weight gain is not a documented side effect of this medication. Abdominal pain is not an expected side effect of this medication.

5. The nurse is caring for a female client recovering from surgery to remove the uterus, cervix, ovaries, and fallopian tubes using a traditional approach. The nurse realizes this client has had a:

1. complete hysterectomy.
2. laparoscopically assisted vaginal hysterectomy.
3. partial hysterectomy.
4. total abdominal hysterectomy and bilateral salpingo-oophorectomy.

ANS: 4

Removal of the uterus, ovaries, and fallopian tubes through an abdominal incision is called a total abdominal hysterectomy and bilateral salpingo-oophorectomy. A hysterectomy performed vaginally via laparoscope is a laparoscopically assisted vaginal hysterectomy. A partial hysterectomy removes the body of the uterus without the cervix, and a complete hysterectomy is the removal of the entire uterus.

PTS:1DIF:Analyze

REF: Dysfunctional Uterine Bleeding: Planning and Implementation: Surgery

6. A female client, experiencing vulvar itching and discomfort, is diagnosed with Candida. What would the nurse expect to find when assessing this client?

1. Foul, fishy odor
2. Gray, thin, watery discharge
3. Thick, white discharge
4. Yellow, green discharge

ANS: 3

Candida typically produces a thick, white discharge. Bacterial vaginosis causes a white or gray, thin, watery discharge and an odor. Trichomoniasis has a frothy, green/yellow/white discharge.

PTS:1DIF:ApplyREF:Infections: Vaginitis

7.A female client who has been menstruating has a temperature of 103.5F, blood pressure 88/56 mmHg, and a diffuse rash. The nurse realizes that this client is most likely experiencing:

1. pelvic inflammatory disease.
2. herpes simplex virus.
3. human papillomavirus.
4. toxic shock syndrome.

ANS: 4

Toxic shock syndrome is an acute illness associated with menstruation and tampon use. Symptoms include a high fever, a diffuse rash, falling blood pressure, nausea, vomiting, diarrhea, myalgia, disorientation, and coma. Herpes simplex virus usually results in a genital sore or ulcer. The human papillomavirus is associated with genital warts. Pelvic inflammatory disease is an inflammatory condition of the female pelvic organs.

PTS: 1 DIF: Analyze REF: Toxic Shock Syndrome

8.The nurse is teaching a group of young adults about prevention of sexually transmitted infections (STIs). Which of the following instructions would not be included during teaching?

1. Abstinence is the only way to completely prevent STIs.
2. Condoms provide some protection against STIs.
3. Make sure you and your partner finish the entire treatment regimen.
4. Once one STI is diagnosed, you are less likely to have an infection with another STI.

ANS: 4

Once one STI is diagnosed, an individual is more likely to have an infection with another STI. The person should be tested for all STIs. The other choices would be appropriate for the nurse to instruct regarding STIs.

PTS:1DIF:Apply

REF: Sexually Transmitted Infection: Planning and Implementation: Population-Based Care

9. A 52-year-old female client had been treated for human papillomavirus. After 3 years of testing, the client's Pap smears are normal. The nurse realizes that the client's next Pap smear should be in:

1. 2 years
2. 3 years
3. 5 years
4. 10 years

ANS: 2

If the client is between the ages of 30 to 70 and has three normal Pap smear results, the client does not need to have another Pap smear for 3 years. If the client is between the ages of 21 to 30 and has normal Pap smear results, the client needs another Pap smear in 2 years. If the client is over the age of 70 and the last three Pap smear results were normal, within 10 years, the Pap smears can be discontinued.

10. A female client has had a type 1 female circumcision. The nurse realizes that which of the following has been surgically removed on the client?

1. Clitoris
2. Clitoris and labia minora
3. Clitoris, labia minora, inner surface of labia majora, and suturing of the vagina
4. Clitoris and uterus

ANS: 1

Type 1 female circumcision is the removal of the clitoris. Type II includes the removal of the clitoris and labia minora. Type III is the removal of the clitoris, labia minora, inner surface of the labia majora, and suturing of the labia majora together to cover the urethra and vagina. There is not a type that is the removal of the clitoris and uterus.

PTS:1 DIF: Analyze REF: Female Circumcision

11. The nurse determines that a female client is at risk for developing a gynecological malignancy because which of the following is assessed?

1. Alcohol intake of one drink every week
2. Currently overweight
3. Smoking history

4. History of constipation

ANS: 3

Smoking increases the female clients risk of developing gynecological malignancies. Alcohol intake, being overweight, and having a history of constipation do not increase a clients risk of developing the disorder.

PTS:1DIF:AnalyzeREF:Malignancies

12.A female client diagnosed with infertility is prescribed medication. The nurse would provide instruction regarding which of the following medications?

1. Viagra
2. Delatestryl
3. Testim
4. Clomiphene citrate

ANS: 4

Clomiphene citrate is used to induce ovulation. When used, most pregnancies occur within the first 3 cycles of use and almost all pregnancies occur within 6 months of use. The other medications are used to treat sexual dysfunction and not infertility.

PTS: 1 DIF: Apply REF: Infertility: Pharmacology

MULTIPLE RESPONSE

1.A female client is diagnosed with premenstrual dysphoric disorder. Which of the following will the nurse most likely assess in this client? (Select all that apply.)

1. Feeling sad or hopeless
2. Feeling anxious
3. Mood swings
4. Increased sleep
5. Anger
6. Thirst

ANS: 1, 2, 3, 4, 5

To diagnose premenstrual dysphoric disorder, five or more symptoms must be present most of the time during the last week of the menstrual luteal phase: feeling sad or hopeless; feeling anxious; mood swings; increased sleep; and anger. Thirst is not a symptom of this disorder.

PTS:1DIF:Apply

REFremenstrual Syndrome and Premenstrual Dysphoric Disorder

2.A female client, diagnosed with pelvic inflammatory disease, is being considered for inpatient treatment. Which of the following would indicate that the client should be admitted to the hospital for care of this disorder? (Select all that apply.)

1. The client is pregnant.
2. The client will not adhere to the prescribed antibiotic therapy.
3. The clients temperature is 103 degreesF.
4. The client is experiencing symptoms of a tubo-ovarian abscess.
5. The clients blood pressure is 120/80 mmHg.
6. The client has purulent cervical discharge.

ANS: 1, 2, 3, 4

Criteria for admission to treat pelvic inflammatory disease includes pregnancy, inability to comply with outpatient therapy, failure of outpatient therapy, temperature greater than 102.2F, and suspected tubo-ovarian abscess. Blood pressure and purulent cervical discharge are not criteria for admission to treat pelvic inflammatory disease.

3.A client is diagnosed with a sexually transmitted infection that the nurse needs to report to the local health department. Which of the following sexually transmitted infections need to be reported by the nurse? (Select all that apply.)

1. Bacteria vaginitis
2. HPV
3. HIV
4. Chlamydia
5. Gonorrhea
6. Syphilis

ANS: 3, 4, 5, 6

Syphilis, gonorrhea, chlamydia, and HIV are infections that need to be reported to the local health department in every state. Bacteria vaginitis and HPV do not need to be reported to the local health department.

PTS: 1 DIF: Apply REF: Health Care Resources

4. A female client is diagnosed with a cystocele. The nurse should prepare to instruct the client on which of the following? (Select all that apply.)

1. Kegel exercises
2. Pessary insertion
3. Use of estrogen cream
4. Operative repair
5. Hysterectomy
6. Antibiotics

ANS: 1, 2, 3

Treatment of a cystocele includes Kegel exercises, insertion of a pessary, and use of estrogen cream. Operative repair, hysterectomy, and antibiotics are not treatments associated with this disorder.

PTS: 1 DIF: Apply REF: Pelvic Relaxation

5. A client is diagnosed with uterine fibroids. Which of the following would indicate that surgery is needed for this client? (Select all that apply.)

1. Abnormal bleeding not responsive to other therapy
2. Weight gain of 10 lbs over the last 3 months
3. Growth of fibroids after menopause
4. Chronic constipation
5. Client unable to conceive
6. Diagnosed with iron deficiency anemia

ANS: 1, 3, 5, 6

Indications for surgical management of fibroids include abnormal bleeding that is not responding to medical therapy, growth of fibroids after menopause, infertility, and iron deficiency anemia. Weight gain and chronic constipation are not indications for surgery to remove uterine fibroids.

Chapter 25: The Breast

1. A client who has just given birth is planning on breastfeeding the baby. The nurse realizes that which of the following hormones influences breast milk secretion?

1. Follicle-stimulating hormone
2. Luteinizing hormone
3. Oxytocin
4. Prolactin

ANS: 4

Prolactin is necessary for breast formation and the production of breast milk. Oxytocin is responsible for uterine contractions and the breast milk let down. Follicle-stimulating hormone stimulates the production of sperm and ova. In men, luteinizing hormone stimulates testosterone needed for sperm production, and in women, it stimulates ovulation.

PTS:1DIF:Analyze

REF:Breast Alternations during Maturational Phases: Effects of Hormones on Breast Tissue; Changes During Pregnancy

2.The nurse is instructing a female client about breast self-examination. Which of the following instructions would not be correct for the nurse to provide?

1. A menstruating woman should check her breast monthly 8 days following her menses.
2. An inverted nipple is not a cause for alarm.
3. During menopause, you should check your breasts once a month during the same time frame.
4. Visually check the breasts in front of a mirror.

ANS: 2

An inverted nipple is not necessarily a cause for alarm if it has been present since puberty, but any change in the nipple or breast tissue should be evaluated. The other instructions would be appropriate for the nurse to provide.

PTS: 1 DIF: Apply REF: Examination of the Breast

3.A client who has been breastfeeding a newborn for the last 3 months is experiencing an inflammation of the breast. The nurse realizes this client is experiencing:

1. intraductal papilloma.
2. mastalgia.
3. mastitis.
4. mastodynia.

ANS: 3

Mastitis, inflammation of the breast, may be caused from irritation, injury, or infection, and it most commonly occurs within the first 3 months after childbirth. Mastalgia and mastodynia are terms that

refer to breast pain. Intraductal papilloma is a small benign tumor that grows within the terminal portion of a solitary milk duct of the breast.

PTS: 1 DIF: Analyze REF: Mastitis

4. During the examination of a female client's breasts, the nurse determines that which of the following assessment findings would be normal?

1. Nipple discharge
2. Masses
3. Scaling
4. Symmetrical nipples

ANS: 4

Symmetrical nipples would be considered a normal finding. All the other options are abnormal findings.

PTS: 1 DIF: Analyze REF: Examination of the Breast

5. The nurse is instructing a female client on the importance of having routine mammograms because mammograms:

1. can detect masses before they become palpable.
2. involves no radiation.
3. has a 25% rate of false positives.
4. combines a blood test with radiology.

ANS: 1

Mammography is a radiological procedure that is useful because it allows visualization of benign and malignant disorders before they become palpable. The rate of false positives is 5% to 10%.

Mammography does use radiation. Mammography does not include a blood test.

PTS: 1 DIF: Apply REF: Diagnostic Tests: Mammography

6. The nurse is instructing a female client on what should be done if a lump is discovered while performing breast self-examination (BSE). What should the nurse instruct the client to do?

1. Call her physician and immediately schedule an appointment.
2. Call to schedule an appointment next month.
3. Take the antibiotics she has in her medicine cabinet.

4. Wait until next months BSE to make sure the lump is still there.

ANS: 1

Follow-up on a lump should begin immediately. The client should not wait to see if the lump remains or changes, and she should not medicate herself.

PTS: 1 DIF: Apply REF: Examination of the Breast

7. The nurse determines that a female client has a lower risk for developing breast cancer when which of the following is assessed?

1. Alcohol intake
2. Breastfeeding
3. Obesity
4. Smoking

ANS: 2

Breastfeeding has consistently been shown to decrease a womans risk of breast cancer. The other options increase a womans risk of breast cancer.

PTS: 1 DIF: Analyze REF: Breast Cancer: Etiology

8. The nurse should instruct the client that when performing a breast self-examination, pay particular attention to which of the following areas since the greatest number of malignancies are found in this breast area?

1. Upper outer quadrant of the breast to the axilla
2. Portion of the breast closest to the xiphoid process
3. Portion of the breast closest to the abdomen
4. Portion of the breast closest to the neck

ANS: 1

The upper outer quadrant of the breast to the axilla is an area that needs to be evaluated since the greatest proportion of malignancies are found in this area of the breast. The other breast areas need to be examined; however, special attention should be given to the upper outer quadrant.

PTS: 1 DIF: Apply REF: Examination of the Breast

9. The nurse should instruct a client, diagnosed with mastalgia, to do which of the following?

1. Have an immediate mammogram.
2. Expect to need a biopsy.
3. Decrease the intake of caffeine.
4. Determine if breast augmentation surgery is desired.

ANS: 3

Mastalgia refers to breast pain. Pain is not generally associated with breast cancer. Wearing a well-fitting supportive brassiere during exercise and decreasing the intake of caffeine would be beneficial. The client does not need an immediate mammogram, a biopsy, or breast augmentation.

PTS: 1 DIF: Apply REF: Mastodynia and Mastalgia

10.A female client tells the nurse that she is planning on having plastic surgery to correct a minor facial defect and then have her breasts done. The nurse would identify which of the following nursing diagnoses as being appropriate for this client?

1. Ineffective coping
2. Anxiety
3. Hopelessness
4. Body dysmorphic disorder

ANS: 4

Body dysmorphic disorder is characterized by a preoccupation with body image and the slight or imagined defect in appearance that leads to impairment or distress in functioning in social situations. Body dysmorphic disorder would be appropriate for the client who is planning on having plastic surgery for a minor facial defect and then breast augmentation surgery. The other nursing diagnoses would not be appropriate for the client at this time. PTS: 1 DIF: Analyze REF: Breast Alterations: Psychological Aspects

11.The nurse is determining if a female client is at risk for benign breast disease. Which of the following is a risk factor for this disorder?

1. Smoking
2. Caffeine use

3. Alcohol intake

4. Age 55

ANS: 2

Risk factors for benign breast disease include caffeine use, imbalance between estrogen and progesterone, estrogen excess, hyperprolactemia, and age between 20 to 50 years. Smoking and alcohol intake are not risk factors for benign breast disease.

PTS: 1 DIF: Analyze REF: Red Flag: Risk Factors for Benign Breast Disease

12.A client is scheduled for a prophylactic mastectomy. The nurse should remind the client that skin flaps will be left after the surgery for:

1. reconstruction.
2. suturing to the chest wall.
3. possible use for other skin disorders.
4. donation for someone needing a skin transplant.

ANS: 1

The goal of a mastectomy is to remove all breast tissue, including the nipple and areola, while leaving well-perfused viable skin flaps for primary closure or reconstruction. The skin flaps will not be sutured to the chest wall. The skin flaps are not for use for other skin disorders. The skin flaps are not for donation for someone needing a skin transplant. PTS: 1 DIF: Apply REF: Mastectomy

MULTIPLE RESPONSE

1. When instructing a client on breast self-examination, the nurse reviews the importance of visual inspection of the breasts. Which of the following should the nurse instruct the client to focus on when doing this part of the examination? (Select all that apply.)

1. Contour and symmetry of the breasts
2. Skin changes
3. Position of the nipples
4. Presence or absence of masses

5. Pain
6. Size

ANS: 1, 2, 3, 4

Visual inspection of the breast self-examination focuses on the contour and symmetry of the breasts; skin changes such as scaling, puckering, dimpling, or scars; the position of the nipples; nipple discharge or retraction; and presence or absence of masses. This part of the examination does not include pain or size of the breasts.

PTS: 1 DIF: Apply REF: Examination of the Breast

2. The nurse is preparing to assess a client's nipples during a breast examination. Which of the following are considered pathological conditions that affect the nipple? (Select all that apply.)

1. Bleeding
2. Lumps
3. Discharge
4. Scars
5. Fissures
6. Large size

ANS: 1, 3, 5

The three primary pathological conditions of the nipple include bleeding, discharge, and fissures. Lumps, scars, and size are not associated with pathological conditions of the nipple.

PTS: 1 DIF: Analyze REF: Nipple Disorders

3. Which of the following should the nurse do if a female client is experiencing nipple discharge? (Select all that apply.)

1. Note the color of the discharge.
2. Determine if the discharge is from one or both breasts.
3. Obtain a sample of the discharge with a sterile cotton-tipped swab.
4. Assess the nipple drainage for occult blood.
5. Apply sterile bandages over the nipple.
6. Pad the client's bra with gauze.

ANS: 1, 2, 3, 4

If a female client is assessed with abnormal nipple discharge, the nurse should note the color of the discharge; determine if the discharge is from one or both breasts; obtain a sample of the discharge with a sterile cotton-tipped swab; and assess the drainage for occult blood. The nurse should not apply sterile bandages over the nipple nor pad the client's bra with gauze.

PTS: 1 DIF: Apply REF: Red Flag: Examining Nipple Discharge

4.A client is experiencing galactorrhea. Which of the following should the nurse assess in this client? (Select all that apply.)

1. Recent vigorous nipple stimulation
2. Prescribed hormones, blood pressure medications, or antidepressants
3. Intake of herbal remedies such as fennel or anise
4. Use of street drugs such as opiates and marijuana
5. Recent chest trauma

Chapter 26: Hematopathology

1. Cytokines that affect hematopoiesis in bone marrow are called colony-stimulating factors (CSFs) based on their ability to:

- A) support lymphocytes.
- B) differentiate red cells.
- C) regulate blood cells.
- D) stimulate lymphocytes.

2. Leukocytes consist of three categories of cells that have different roles in the inflammatory and immune responses. Which of the following leukocytes is correctly matched with its function?

- A) Lymphocyte; phagocytosis

- B) Eosinophils; allergic reactions
- C) Basophils; engulf antigens
- D) Monocytes; release heparin

3. The patient has an abnormally low neutrophil count. Neutropenia is most commonly caused by:

- A) Epstein-Barr virus.
- B) Kostmann syndrome.
- C) drug reactions.
- D) skin infections.

4. The 16-year-old boy has enlarged lymph nodes and a sore throat. His girlfriend was recently diagnosed with infectious mononucleosis, which is caused by and commonly transmitted in .

- A) heterophil antibodies; blood
- B) Epstein Barr virus; saliva
- C) T-cell infection; plasma
- D) bacterial infection; monocytes

5. The patient is diagnosed with Hodgkin type of lymphoma based on the results of laboratory tests and study of the tumor cells. A distinct characteristic of Hodgkin lymphoma is the presence of:

- A) Reed-Sternberg cells.
- B) Bence Jones proteins.
- C) M-type protein antibodies.
- D) Philadelphia chromosome.

6. Manifestations of Hodgkin lymphoma that distinguish it from non-Hodgkin lymphoma include:

- A) noncontiguous nodal spread.
- B) superficial lymphadenopathy.
- C) pruritus and night fevers.
- D) poor humoral antibody response.

7. Leukemias are classified according to the predominant cell type. The myelogenous cell type of leukemia can:

- A) interfere with thrombocyte cell maturation.
- B) originate in marrow and infiltrate nodes.
- C) affect B and T stem cells in bone marrow.
- D) transform mature cells into immature ones.

8. A child has Down syndrome and has recently experienced unexplained nose bleeds. His blood tests identify blast cells in the peripheral smear. In addition to nose bleeds, his acute leukemia will typically manifest all of the following EXCEPT:

- A) infections due to neutropenia.
- B) fatigue due to RBC deficiency.
- C) hypogammaglobulinemia.
- D) bleeding due to thrombocytopenia.

9. In contrast to acute leukemias, chronic leukemias are malignancies involving abnormal blood cells in the marrow.

- A) production of undifferentiated
- B) proliferation of well-differentiated
- C) uncontrolled growth of immature
- D) replication of pluripotent precursor

10. Multiple myeloma is a malignancy of:
- A) plasma cells.
 - B) bone osteoblasts.
 - C) T-cell lymphocytes.
 - D) immunoglobulin A.
11. Which of the following statements accurately describes a component of the hematopoietic system?
- A) Lymphocytes lack cytoplasmic granules.
 - B) Neutrophils are agranulocytes.
 - C) Colony-forming units (CFUs) promote the growth of hematopoietic cell colonies.
 - D) Neutrophils are the most prevalent lymphocytes.
12. Which of the following parts of the body are considered to be parts of the lymphatic system? Select all that apply.
- A) Thyroid gland
 - B) Thymus
 - C) Spleen
 - D) Kupffer cells
 - E) Myelin
13. A patient with a long-standing diagnosis of human immunodeficiency virus (HIV) has recently developed neutropenia and been admitted to a hospital. Which of the following measures should be prioritized by the nurses who are providing his care?
- A) Administration of prophylactic antibiotics

- B) Supplementary oxygen and administration of bronchodilators
- C) Administration of antiretroviral medications
- D) Vigilant infection control and handwashing

14. A 16-year-old girl has been brought to her primary care provider by her mother due to the daughters recent malaise and lethargy. Which of the following assessments should the clinician perform in an effort to confirm or rule out infectious mononucleosis?

- A) Auscultating the patients lungs
- B) Palpating the patients lymph nodes
- C) Assessing the patients cranial nerve reflexes
- D) Assessing the patient for bone pain

15. Which of the following factors differentiates chronic leukemias from acute leukemias?

- A) Leukemic cells are disseminated throughout the body by the circulatory system.
- B) The leukemic cells are more fully differentiated than in acute leukemias.
- C) The prevalence among individuals with Down syndrome is high.
- D) They are cancers of the hematopoietic progenitor cells.

16. Following peripheral blood testing and a bone marrow biopsy, a patient has been diagnosed with chronic myelogenous leukemia. Which of the following is most likely to have preceded the patients diagnosis?

- A) The presence of a Philadelphia chromosome
- B) Down syndrome
- C) Radiation exposure
- D) Exposure to the Epstein-Barr virus

17. A patient has been diagnosed with non-Hodgkin lymphoma (NHL), a form of malignancy that most likely originated in which of the following sites?

- A) Thymus
- B) Spleen
- C) Bone marrow
- D) Lymph nodes

18. A young adult is preparing to begin treatment for non-Hodgkin lymphoma (NHL), a disease that has disseminated widely. What is the most likely treatment regimen for this patient?

- A) Antiviral medications
- B) Surgery and whole blood transfusion
- C) Radiation and chemotherapy
- D) Bone marrow or stem cell transplantation

19. Which of the following patient complaints should prompt a clinician to order a diagnostic work-up for multiple myeloma?

- A) Lately my bones just seem to ache so bad, and nothing seems to help.
- B) Every morning my joints are so stiff that it takes me 10 or 15 minutes just to get going.
- C) I feel so weak and the last few days I've actually fallen asleep on my coffee break at work.
- D) I vomited yesterday evening and it looked like coffee grounds mixed with some fresh blood.

20. Which of the following abnormal blood work results is most closely associated with a diagnosis of multiple myeloma?

- A) Decreased hemoglobin, hematocrit, and red blood cells

- B) Extremely high levels of abnormal lymphocytes
- C) Low glomerular filtration rate and high calcium levels
- D) Low potassium levels and increased blood urea nitrogen

Answer Key

- 1. C
- 2. B

- D) Profound red cell hemolysis

24. The patient is an average-sized adult and has abnormal microcytic hypochromic red blood cells due to a long-term, chronic disease. Which of the following CBC results is characteristic of her type of anemia?

- A) Hematocrit 44%
- B) Reticulocytes 1.5%
- C) Band cells 3,000/mL
- D) Hemoglobin 8 g/dL

25. Megaloblastic anemias caused by folic acid or vitamin B12 deficiencies can seriously affect RBC production. This is because both are necessary for _____ synthesis and _____.

- A) iron; hemoglobin adhesion
- B) DNA; red blood cell maturation
- C) thrombin; platelet aggregation
- D) protein; reticulocyte maturation

26. Polycythemia develops in patients with lung disease as a result of:

- A) hyperventilation.
 - B) chronic hypoxia.
 - C) decreased blood viscosity.
 - D) excessive respiratory fluid loss.
27. Which of the following types and characteristics of anemia are correctly matched?
- A) Hemolytic; abnormal iron uptake
 - B) Iron deficiency; early RBC death
 - C) Folate; decreased erythropoiesis
 - D) Blood loss; bone marrow expansion
28. Conditions that predispose to sickling of hemoglobin in persons with sickle cell anemia include:
- A) impaired red blood cell maturation.
 - B) increased iron content of blood.
 - C) decreased oxygen saturation.
 - D) increased intravascular volume.
29. An elevated level of unconjugated bilirubin, due to hemolysis of RBCs, results in a high level of iron released and:
- A) diarrhea.
 - B) cyanosis.
 - C) numbness.
 - D) jaundice.
30. Hemolytic anemia is characterized by excessive red blood cell destruction and compensatory:
- A) hypoactive bone marrow.
 - B) increased erythropoiesis.

- C) iron retention in the body.
- D) shrinkage of the spleen.

31. A 48-year-old male patient, who normally enjoys good health, has been admitted to the hospital for the treatment of polycythemia vera. The nurse who is providing care for the patient should prioritize assessments aimed at the early identification of which of the following health problems?

- A) Orthostatic hypotension
- B) Hyperventilation and respiratory alkalosis
- C) Vasculitis
- D) Thromboembolism

32. Which of the following patients is most susceptible to experiencing the effects of inadequate erythropoiesis?

- A) A patient who has developed renal failure as a result of longstanding hypertension
- B) A patient who recently experienced an ischemic stroke and who remains bedridden
- C) A patient whose heavy alcohol use has culminated in a diagnosis of pancreatitis
- D) A patient whose estimated blood loss during recent surgery was 700 mL.

33. A 72-year-old woman with complaints of increasing fatigue has completed a series of fecal occult blood tests that indicate the presence of blood in her stool. Which of the following health problems is likely to accompany this patient's gastrointestinal bleed?

- A) Hemolytic anemia
- B) Aplastic anemia
- C) Iron-deficiency anemia

D) Megaloblastic anemia

34. Hemoglobin solubility results and hemoglobin electrophoresis have resulted in a diagnosis of sickle cell anemia in an African American infant. The parents of the child should be aware that their child is at a significant risk for which of the following health problems? Select all that apply.

A) Acute pain

B) Stroke

C) Respiratory disease

D) Autoimmune diseases

E) Fractures

35. The pathologic effects of the thalassemias are primarily due to which of the following pathophysiologic processes?

A) Impaired hemoglobin synthesis

B) Impaired folic acid absorption

C) Erythropoietin deficiency

D) Loss of iron

36. Which of the following individuals likely faces the highest risk of megaloblastic anemia?

A) A 69-year-old woman who takes ASA four times daily to treat her arthritis

B) A 44-year-old man who lost approximately 500 mL of blood in a workplace accident

C) A 21-year-old college student who lives a vegan lifestyle

D) An infant who is exclusively fed commercial baby formula

37. For which of the following health problems is stem cell transplantation likely to be of therapeutic benefit?

- A) Aplastic anemia
- B) β -Thalassemias
- C) Chronic disease anemias
- D) Secondary polycythemia

38. A 68-year-old patient with an 80 pack/year history of smoking was diagnosed with emphysema 18 months ago. The patient's most recent scheduled blood work showed red blood cell indices, a problem that suggests the need for which of the following interventions?

- A) Vitamin B12 supplements
- B) Increased supplementary oxygen therapy
- C) Hemodialysis or peritoneal dialysis
- D) Scheduled erythropoietin injections

39. Which of the following trends in the hematologic status of a 6-week-old infant most clearly warrants medical intervention?

- A) Decreasing red blood cell counts
- B) Increasing HbA levels
- C) Decreasing hematocrit and mean corpuscular volume (MCV)
- D) Increasing white blood cell counts

40. A mother has brought her 2-week-old infant to the emergency department due to the baby's persistent and increasing jaundice. Blood testing reveals that the infant's unconjugated bilirubin level is 28 mg/dL and assessment does not reveal neurologic deficits. The infant's weight is normal and the mother claims to have had no significant difficulty feeding the infant. The

most likely treatment for this infant will be:

- A) phototherapy.
- B) packed red blood cell transfusion.
- C) phlebotomy.
- D) intravenous antibiotics.

Answer Key

Chapter 27: The Endocrine System

- a. Control by releasing hormones
- b. Control by tropic hormones
- c. Negative feedback control
- d. Hypothalamus/hypophysis coordination

ANS: C

2. What is the most common cause of endocrine disorders?

- a. Malignant neoplasm
- b. Infection
- c. Congenital defect
- d. Benign tumor

ANS: D

3. Choose the statement that applies to type 1 diabetes mellitus.

- a. Onset often occurs during childhood.
- b. Relative insufficiency of insulin or insulin resistance develops.
- c. It can be treated by diet, weight control and exercise, or oral hypoglycemics.
- d. Complications rarely occur.

ANS: A

4. Why does polyuria develop with diabetes mellitus?

- a. Increased thirst and hypoglycemia
- b. Ketoacidosis
- c. Osmotic pressure due to glucose

- d. Diabetic nephropathy

ANS: C

5. What is the cause of diabetic ketoacidosis?

- a. Excess insulin in the body
- b. Loss of glucose in the urine
- c. Failure of the kidney to excrete sufficient acids
- d. Increased catabolism of fats and proteins

ANS: D

6. What is a precipitating factor for diabetic ketoacidosis?

- a. Skipping a meal
- b. Anorexia
- c. Serious infection
- d. Insulin overdose

ANS: C

7. Which of the following may cause insulin shock to develop?

- a. Strenuous exercise
- b. Missing an insulin dose
- c. Eating excessively large meals
- d. Sedentary lifestyle

ANS: A

8. Which of the following indicates hypoglycemia in a diabetic?

- a. Deep, rapid respirations
- b. Flushed dry skin and mucosa
- c. Thirst and oliguria

- d. Staggering gait, disorientation, and confusion

ANS: D

9. Which of the following are signs of diabetic ketoacidosis in an unconscious person?

- a. Pale moist skin
- b. Thirst and poor skin turgor
- c. Deep rapid respirations and fruity breath odor
- d. Tremors and strong rapid pulse

ANS: C

10. Immediate treatment for insulin shock may include:

- a. administration of bicarbonates.
- b. consumption of fruit juice or candy.
- c. induced vomiting.
- d. consumption of large amounts of water.

ANS: B

11. What causes loss of consciousness in a person with diabetic ketoacidosis?

- a. Toxic effects of excessive insulin
- b. Excessive glucose in the blood
- c. Metabolic acidosis
- d. Lack of glucose in brain cells

ANS: C

12. Which of the following does NOT usually develop as a complication of diabetes?

- a. Osteoporosis
- b. Nephropathy
- c. Impotence

- d. Peripheral neuropathy

ANS: A

13. How do many oral hypoglycemic drugs act?

- a. To replace insulin in patients with insulin-dependent diabetes mellitus (IDDM)
- b. To transport glucose into body cells
- c. To prevent gluconeogenesis
- d. To stimulate the pancreas to produce more insulin

ANS: D

14. Diabetes may cause visual impairment through damage to the lens; this is referred to as:

- a. cataracts.
- b. macular degeneration.
- c. myopia.
- d. strabismus.

ANS: A

15. Which of the following applies to diabetic macro-angiopathy?

- 1. It affects the small arteries and arterioles.
 - 2. It is related to elevated serum lipids.
 - 3. It leads to increased risk of myocardial infarction and peripheral vascular disease.
 - 4. It frequently causes damage to the kidneys.
- a. 1, 3
 - b. 1, 4
 - c. 2, 3
 - d. 2, 4

ANS: C

16. Why is amputation frequently a necessity in diabetics?

- a. Necrosis and gangrene in the feet and legs
- b. Lack of glucose to the cells in the feet and legs
- c. Severe dehydration in the tissues
- d. Elevated blood glucose increasing blood viscosity

ANS: A

17. A type of diabetes that may develop during pregnancy and disappear after delivery is called:

- a. temporary maternal diabetes.
- b. fetal diabetes.
- c. acute developmental diabetes.
- d. gestational diabetes.

ANS: D

18. Which one of the following develops hypoglycemia more frequently?

- a. Type 1 diabetic patients
- b. Type 2 diabetic patients
- c. Patients with a poor stress response
- d. Patients with a regular exercise and meal plan

ANS: A

19. Which of the following hormonal imbalances causes Addisons disease?

- a. Increased glucocorticoids
- b. Decreased glucocorticoids
- c. Deficit of antidiuretic hormone (ADH)
- d. Deficit of T3 and T4

ANS: B

20. Which of the following hormonal imbalances causes myxedema?

- a. Increased glucocorticoids
- b. Decreased glucocorticoids
- c. Deficit of ADH
- d. Deficit of T3 and T4

ANS: D

21. Which of the following hormonal imbalances causes diabetes insipidus?

- a. Increased insulin
- b. Decreased glucocorticoids
- c. Deficit of ADH
- d. Deficit of T3 and T4

ANS: C

22. What is caused by hyperparathyroidism?

- a. Hypocalcemia
- b. Tetany
- c. Bone demineralization
- d. Deficit of vitamin D

ANS: C

23. What is caused by hypocalcemia due to hypoparathyroidism?

- 1. Skeletal muscle twitching or spasm
 - 2. Weak cardiac contraction
 - 3. Increased secretion of parathyroid hormone (PTH)
 - 4. Decreased serum phosphate level
- a. 1, 2
 - b. 1, 3

c. 2, 3

d. 3, 4

ANS: A

24. Which of the following applies to acromegaly?

a. It occurs in infants and children.

b. It causes excessive longitudinal bone growth.

c. It results from excessive secretion of growth hormone (GH).

d. It does not change soft tissue growth.

ANS: C

25. Which of the following may cause goiter?

1. Hyperthyroidism

2. Hypothyroidism

3. Lack of iodine in the diet

4. Pheochromocytoma

a. 1, 4

b. 2, 3

c. 1, 2, 3

d. 1, 2, 3, 4

ANS: C

26. Which signs are typical of Graves disease?

a. Facial puffiness, bradycardia, and lethargy

b. Exophthalmos and tachycardia

c. delayed physical and intellectual development

d. Goiter and decreased basal metabolic rate (BMR)

ANS: B

27. Characteristics of Cushing's syndrome include all of the following EXCEPT:

- a. Heavy body and round face
- b. Atrophied skeletal muscle in the limbs
- c. Staring eyes with infrequent blinking
- d. Atrophy of the lymph nodes

ANS: C

28. Which of the following is an effect of long-term glucocorticoid therapy?

- a. Decreased secretion from the adrenal cortex gland
- b. An increased inflammatory response to irritants
- c. Hypotension and poor circulation
- d. Increased number of hypersensitivity reactions

ANS: A

29. Which of the following is an effect of Addison's disease?

- a. Elevated blood glucose levels
- b. High blood pressure
- c. Low serum potassium levels
- d. Poor stress response

ANS: D

30. What is the most common cause of type 1 diabetes mellitus?

- a. Increased glucose production in the liver
- b. Destruction of pancreatic cells by an autoimmune reaction
- c. Increased resistance of body cells to insulin action
- d. Chronic obesity

ANS: B

31. Why does glucosuria occur in diabetics?
- a. Excess ketoacids displace glucose into the filtrate.
 - b. Excess water in the filtrate draws more glucose into the urine.
 - c. The amount of glucose in the filtrate exceeds the renal tubule transport limit.
 - d. Sufficient insulin is not available for glucose reabsorption.

ANS: C

32. Which of the following are common early signs of a pituitary adenoma?
- 1. Persistent headaches
 - 2. Hemianopia
 - 3. Hypertension
 - 4. Papilledema
- a. 1, 4
 - b. 2, 3
 - c. 1, 2
 - d. 1, 3, 4

ANS: C

33. Which of the following does NOT apply to inappropriate ADH syndrome?
- a. The cause is excess ADH secretion.
 - b. Severe hyponatremia results.
 - c. Excessive sodium is retained.
 - d. Fluid retention increases.

ANS: C

34. What is/are the effect(s) of thyrotoxic crisis?
- a. Hyperthermia and heart failure

- b. Hypotension and hypoglycemia
- c. Toxic goiter and hypometabolism
- d. Decreased stress response

ANS: A

35. Which of the following conditions may precipitate or exacerbate hyperglycemia?

- a. Hypothyroidism
- b. Cushings disease
- c. Addisons disease
- d. Growth hormone deficit

ANS: B

36. Which of the following conditions may cause immunosuppression?

- a. Graves disease
- b. Acromegaly
- c. Cushings disease
- d. Diabetes insipidus

ANS: C

37. Hyperosmolar hyperglycemic nonketotic coma (HHNC) more frequently develops in patients with:

- a. type 1 diabetes.
- b. type 2 diabetes.
- c. Graves disease.
- d. hyperparathyroidism.

ANS: B

38. Which of the following is recommended for immediate treatment of hypoglycemic shock?

- 1. If conscious, immediately give sweet fruit juice, honey, candy, or sugar.
- 2. If unconscious, give nothing by mouth (require intravenous glucose 50%).

3. Treat immediately with insulin.
 4. Give large quantity of clear fluids for shock.
- a. 1, 2
 - b. 1, 3
 - c. 2, 3
 - d. 1, 3, 4

ANS: A

39. All these tissues use glucose without the aid of insulin EXCEPT:
- a. liver.
 - b. digestive system.
 - c. exercising skeletal muscle.
 - d. brain.

ANS: A

40. Differences between type 1 and type 2 diabetes include which of the following?
- a. Type 1 diabetes weight gain is common, and type 2 weight loss often occurs.
 - b. Type 1 diabetes leads to fewer complications than does type 2 diabetes.
 - c. Type 1 diabetes may be controlled by adjusting dietary intake and exercise, but type 2 diabetes requires insulin replacement.
 - d. Type 1 diabetes occurs more frequently in children and adolescents, and type 2 diabetes occurs more often in adults.

ANS: D

41. Complications of diabetes mellitus include:
- a. peripheral neuropathy.

- b. frequent infections.
- c. cataracts.
- d. A, B, and C.

ANS: D

42. Which of the following often causes hyperparathyroidism?
- a. A malignant tumor in the parathyroid glands
 - b. End-stage renal failure
 - c. Osteoporosis
 - d. Radiation involving the thyroid gland and neck area

ANS: D

43. Dwarfism is caused by:
- a. excessive levels of somatotropin (GH).
 - b. a deficit of somatotropin (GH).
 - c. excessive levels of insulin.
 - d. excessive levels of parathyroid hormone.

ANS: B

44. Which of the following results from a deficit of antidiuretic hormone (ADH)?
- a. Inappropriate ADH syndrome
 - b. Gigantism
 - c. Diabetes insipidus
 - d. Myxedema

ANS: C

45. Goiters occur more frequently in persons living in the:
- a. Great Lakes or mountainous regions.

- b. southwest United States.
- c. temperate regions.
- d. areas bordering the oceans.

ANS: A

46. Which of the following is caused by Graves disease?

- a. Hypermetabolism
- b. Decreased size of thyroid gland
- c. Bradycardia and hypothermia
- d. Decreased blood levels of T3, T4, and TSH

ANS: A

47. Goiters may be caused by:

- a. hypothyroid conditions only.
- b. either hypothyroid or hyperthyroid conditions.
- c. hyperthyroid conditions only.
- d. fungal infections such as candidiasis.

ANS: B

48. Severe impairment of all aspects of growth and development, including difficulty feeding, mental retardation, and stunted skeletal growth, are associated with:

- a. myxedema.
- b. Cushing's syndrome.
- c. diabetes insipidus.
- d. cretinism.
- e. Graves disease.

ANS: D

49. A benign tumor of the adrenal medulla that secretes epinephrine and norepinephrine is called:

- a. pheochromocytoma.

- b. Cushings syndrome.
- c. Graves disease.
- d. Addisons disease.

ANS: A

50. The anterior pituitary gland secretes all of the following hormones EXCEPT:

- a. prolactin (PRL).
- b. glucagon.
- c. adrenocorticotrophic hormone (ACTH).
- d. growth hormone (GH).

ANS: B

51. Which of the following applies to oxytocin?

- 1. It stimulates contraction of the uterus after delivery.
 - 2. It stimulates ejection of breast milk during lactation.
 - 3. It stimulates mammary gland production of milk.
 - 4. It is released from the adenohypophysis.
- a. 1, 2
 - b. 1, 4
 - c. 1, 3, 4
 - d. 1, 2, 3, 4

ANS: A

52. Which of the following is a major function of the hormone norepinephrine?

- a. Inhibition of an excessive stress response
- b. Visceral and cutaneous vasoconstriction
- c. Increased force of heart contraction

- d. Vasodilation in skeletal muscle

ANS: B

53. Early signs of hyperglycemia include polyphagia, which means:

- a. thirst.
- b. increased urine output.
- c. hunger.
- d. glucose in the urine.

ANS: C

54. Which of the following hormones is involved in both the stress response and the anti-inflammatory response?

- a. Aldosterone
- b. Norepinephrine
- c. Thyroxine
- d. Cortisol

ANS: D

55. Polydipsia occurs with diabetes mellitus when:

- a. lack of insulin causes hunger.
- b. ketone levels rise in the blood.
- c. polyuria causes dehydration.
- d. glucosuria causes ketoacidosis.

ANS: C

56. Metabolic syndrome is marked by:

- a. abnormal lipid and glucose metabolism.
- b. periodic hypotension.
- c. deficit of glucagon.

- d. early onset of type 1 diabetes mellitus.

ANS: A

Chapter 28: The Skin

MULTIPLE CHOICE

- 1. Which of the following areas lacks blood vessels and nerves?

- a. Epidermis
- b. Dermis
- c. Subcutaneous tissue
- d. Fatty tissue

ANS: A

- 2. What is a raised, thin-walled lesion containing clear fluid called?

- a. Papule
- b. Pustule
- c. Vesicle
- d. Macule

ANS: C

- 3. Which of the following is a common effect of a type I hypersensitivity response to ingested substances?

- a. Contact dermatitis
- b. Urticaria
- c. Discoid lupus erythematosus
- d. Psoriasis

ANS: B

- 4. What change occurs in the skin with psoriasis?

- a. Recurrent hypersensitivity reactions

- b. Autoimmune response
- c. Increased mitosis and shedding of epithelium
- d. Basal cell degeneration

ANS: C

5. Which of the following best describes the typical lesion of psoriasis?

- a. Purplish papules that can erode and become open ulcers
- b. Firm, raised pruritic nodules that can become cancerous
- c. Moist, red vesicles, which develop into bleeding ulcers
- d. Begins as a red papule and develops into silvery plaques

ANS: D

6. Why do secondary infections frequently develop in pruritic lesions?

- a. Loss of protective sebum
- b. Entry of resident flora while scratching the lesion
- c. Blockage of sebaceous glands
- d. Increased sweat production

ANS: B

7. Which disease is considered an autoimmune disorder?

- a. Pemphigus
- b. Erysipelas
- c. Contact dermatitis
- d. Scleroderma

ANS: A

8. Which of the following skin lesions are usually caused by *Staphylococcus aureus*?

- a. Furuncles

- b. Verrucae
- c. Scabies
- d. Tinea

ANS: A

9. Which of the following statements applies to impetigo?

- a. Lesions usually appear on the hands and arms.
- b. The cause is usually a virus.
- c. The infection is highly contagious.
- d. Scar tissue is common following infection.

ANS: C

10. What is the common signal that a recurrence of herpes simplex infection is developing?

- a. Severe pain around the mouth
- b. Malaise and fatigue
- c. Fever and severe headaches
- d. Mild tingling along the nerve or on the lips

ANS: D

11. Herpes virus is usually spread by all of the following EXCEPT:

- a. saliva during an exacerbation and for a short time thereafter.
- b. contact with the fluid in the lesion.
- c. contaminated blood.
- d. autoinoculation by fingers.

ANS: C

12. How are antiviral drugs effective in treating a viral infection?

- a. They destroy the virus if administered for at least 2 weeks.

- b. They limit the acute stage and viral shedding.
- c. They prevent any systemic effects of viruses.
- d. They prevent any secondary bacterial infection.

ANS: B

13. Tinea capitis is an infection involving the:

- a. trunk.
- b. feet.
- c. scalp.
- d. nails.

ANS: C

14. Plantar warts are caused by:

- a. the fungus aspergillus.
- b. a parasitic arthropod.
- c. human papillomavirus.
- d. the bacterium *Streptococcus pyogenes*.

ANS: C

15. Which of the following statements regarding acute necrotizing fasciitis is TRUE?

- a. Infection is localized in a small area of the epidermis.
- b. It is usually caused by *S. aureus*.
- c. Spontaneous recovery usually occurs in 48 hours.
- d. Infection rapidly causes extensive tissue necrosis and toxic shock.

ANS: D

16. Which type of microbe causes Tinea infections?

- a. Fungus
- b. Virus

- c. Gram-negative bacterium
- d. Mite

ANS: A

17. What causes the pruritus associated with scabies?

- a. An allergic reaction to the causative microbe due to endotoxins
- b. Mites burrowing into the epidermis and reaction to their feces
- c. Bleeding and injected toxin from bites of the larvae
- d. Neurotoxins secreted by mites on the skin surface

ANS: B

18. How can pediculosis be diagnosed?

- a. Pruritus in hairy areas of the body
- b. Loss of blood due to lice bites
- c. Finding lice in clothing
- d. The presence of nits at the base of hair shafts

ANS: D

19. What is the major predisposing factor to squamous cell carcinoma?

- a. Viral infection
- b. Presence of nevi (moles) on the skin
- c. Exposure to ultraviolet light
- d. Frequent hypersensitivity reactions

ANS: C

20. All of the following statements apply to malignant melanoma EXCEPT:

- a. The malignant cell is a melanocyte.
- b. They present as non-pruritic purplish macules.

- c. The neoplasm grows rapidly and metastasizes early.
- d. The lesion is usually dark or multicolored with an irregular border.

ANS: B

21. Which of the following factors has contributed to the increased incidence of Kaposi sarcoma?

- a. Excessive sun exposure
- b. Increased number of nevi
- c. Increase in immunosuppressed individuals
- d. Presence of more seborrheic keratoses

ANS: C

22. Which of the following applies to actinic keratoses?

- a. They predispose to malignant melanoma.
- b. They arise on skin exposed to ultraviolet radiation.
- c. They occur primarily on dark-skinned persons.
- d. They are malignant and invasive.

ANS: B

23. Which lesion distinguishes Tinea corporis?

- a. Small, brown pruritic lines
- b. Painful and pruritic fissures
- c. Erythematous ring of vesicles with a clear center
- d. Firm, red, painful nodule or pustule

ANS: C

24. Systemic effects of acute necrotizing fasciitis include:

- a. low-grade fever and malaise.
- b. toxic shock and disorientation.

- c. mild nausea and vomiting.
- d. headache and difficulty breathing.

ANS: B

25. The cause of contact dermatitis can often be identified by:
- a. using a culture and sensitivity test on the exudate.
 - b. checking the frequency of the exacerbations.
 - c. noting the location and size of the lesion.
 - d. the type of pain associated with the lesion.

ANS: C

26. The pathological change associated with scleroderma is:
- a. abnormal activation of T lymphocytes and an increase of cytokines.
 - b. an autoimmune reaction damaging the epidermis.
 - c. collagen deposits in the small blood vessels of the skin and sometimes the viscera.
 - d. Type I hypersensitivity and increased serum IgE levels.

ANS: C

27. Choose the best description of the typical lesion of impetigo.
- a. Large, red, painful nodule filled with purulent exudates
 - b. Small vesicles that rupture to produce a crusty brown pruritic mass
 - c. Red, swollen, painful areas often with projecting red streaks
 - d. Firm, raised papules that may have a rough surface and may be painful

ANS: B

28. Choose the correct match of the skin condition and its usual location.
- a. Scabiesfingers, wrists, waist
 - b. Impetigolegs, feet
 - c. Pediculosis humanus corporisscalp

- d. Seborrheic keratosisfeet, hands

ANS: A

29. Leprosy (Hansens disease) is caused by:

- a. a fungus.
- b. a bacterium.
- c. a virus.
- d. a helminth.

ANS: B

30. One factor that is responsible for increasing the mortality rate among patients suffering with necrotizing fasciitis is:

- a. a delay in initial diagnosis.
- b. lack of proper antibiotics.
- c. the appearance of additional opportunistic infections.
- d. secondary fungal infections.

ANS: A

Chapter 29: The Head and Neck MULTIPLE CHOICE

1. A nurse reads in a patients history that the patient has experienced otalgia. How should the nurse interpret this term?

- a. Difficulty hearing
- b. Buildup of cerumen
- c. Ear pain
- d. Ringing in the ears ANS: C

Otic- is the root word for ear, and -algia is the root term for pain of any type.

2. A nurse is assisting with a caloric test and notes that the specific patient response that indicates a hearing disorder is a problem in the labyrinth. Which response did the nurse witness?

- a. Blinking
- b. Grimacing
- c. Headache
- d. Nystagmus ANS: D

When warm or cold water is introduced into the ear, the appearance of nystagmus is a positive indication that the hearing problem has its cause in the labyrinth.

3. A 75-year-old patient has normal age-related changes in his ear. What change should not be considered a normal change in the aging patient?

- a. Dry and wrinkled skin on the auricle
- b. Otitis externa
- c. Dry cerumen
- d. Hair in the ear canal ANS: B

Otitis externa is an outer ear infection and therefore an exception. The other three options are normal age-related changes.

4. When making an initial assessment on a patient with a hearing deficit, the patient reports that he often feels off balance and is dizzy when he stands up. Which diagnosis might explain these symptoms?

- a. Sinus infection
- b. Rubella
- c. Otalgia
- d. Presbycusis ANS: A

A sinus infection can be an acute cause of hearing deficits and can create problems with balance.

5. A 94-year-old patient is receiving gentamicin sulfate (Garamycin) in a continuous intravenous (IV) infusion. The nurse adds to the nursing care plan the diagnosis Risk for injury. What nursing action should be implemented?

- a. Pull side rails in place.

- b. Assist with ambulation.
- c. Measure intake and output.
- d. Provide for a possible seizure. ANS: C

Reduced urine output would cause the drug to stay in the system rather than being excreted, which could result in a drug saturation. Gentamicin is ototoxic and can cause hearing impairment.

6. A 75-year-old patient reports to a nurse that although she has cleaned her ears with cotton-tipped applicators for weeks, she still cannot hear her television unless the volume is loud, and she misses a great deal of conversations. What should the nurse anticipate when examining her ears?

- a. Otitis externa
- b. Purulent drainage
- c. Dry cerumen across the canal
- d. Pearly tympanic membrane ANS: C

Obstruction of the external canal with cerumen will result in a hearing loss. Cleaning the ears with something such as an applicator will pack the cerumen in the canal.

7. A patient reports that her hearing loss has become more severe over the past 3 months. The clinic nurse makes arrangements for an evaluation for a hearing aid. What health care provider should provide this service?

- a. Otologist
- b. Otolaryngologist
- c. Audiometrist
- d. Audiologist ANS: D

Audiologists assess patients for hearing aids. The other specialists treat ear, nose, and throat (ENT) disorders.

8. When a patient has a suspected vestibular disorder, the physician orders an electronystagmography test. Which instruction should the nurse include when educating the patient about this test?

- a. Use tea or coffee on the morning of test.
- b. Electrodes will be placed on the scalp.

- c. Air will be blown into the external ear.
- d. The patient should have nothing to eat or drink (NPO) 3 hours before the test. ANS: D

Electronystagmography is used to detect vestibular lesions and requires a 3-hour period of NPO before the test. Coffee and tea should also be avoided before the test.

9. A nurse assessing the results of a Rinne test sees the notation of BC > AC. How should the nurse translate this result?

- a. Conductive hearing loss
- b. Sensorineural hearing loss
- c. Normal hearing
- d. Cochlear defect ANS: A

When the bone conduction (BC) is greater than the air conduction (AC), the results of the Rinne test will read, BC > AC, which means the patient has a conductive hearing loss.

The normal finding for the Rinne test is that AC is greater than BC (AC > BC).

10. A patient undergoing a Weber test says that the sound is louder in her left ear. What should this result indicate?

- a. Normal hearing
- b. Nerve damage from listening to loud music
- c. Blocked ear canal in the right ear
- d. Conductive hearing loss in the left ear ANS: D

With the Weber test, a conductive hearing loss is determined by the sound being heard loudest in the affected ear.

11. Which instruction should a nurse include when providing patient teaching information for a patient who will be self-administering ear drops for an ear infection?

- a. Tip the affected ear up and keep it in that position for several minutes after instilling the medication.
- b. Keep the medication in the refrigerator to preserve it. Instill the medication with the affected ear tilted upward.
- c. Touch the dropper to the opening of the ear canal to ensure that the drops are correctly instilled.

- d. Warm the ear drops and then tilt the head downward. ANS: A

The head is kept in an upward position to ensure that the drops penetrate deep into the external ear.

12. What nursing action should be implemented when irrigating a patient's ear?

- a. Straighten the ear canal and irrigate with a large-tipped bulb syringe.
- b. Direct the solution to the middle of the canal to avoid damaging the ear.
- c. Use a body temperature solution and have the patient hold a basin under the ear while directing the solution toward the top of the canal.
- d. Repeat the irrigation with hotter water. ANS: C

The irrigation is done with warm water using a small-tipped syringe. The flow is directed

upward. If the cerumen does not wash out, the procedure can be repeated but with the same water temperature.

13. A nursing report on a newly admitted patient who is profoundly deaf says that the patient is confused and difficult to assess because she does not appropriately respond to questions or sometimes fails to respond at all. What should be the first action of the oncoming nurse?

- a. Consider asking the physician to assess the patient for dementia.
- b. Assess the patient to determine whether her hearing aids are in.
- c. Report to the physician that the patient is exhibiting signs of the sundown syndrome.
- d. Assess the patient's medications to check for an overdose. ANS: B

Profoundly deaf persons can be mistakenly assessed as being confused or disoriented when not wearing their hearing aids.

14. Which nursing diagnosis is most appropriate for a patient having ear surgery?

- a. Disturbed body image
- b. Risk for injury
- c. Acute confusion
- d. Ineffective protection ANS: B

Patients who have had ear surgery are at risk for vertigo, fluid accumulation, or pressure in the operative ear. Because of the surgery and potential postoperative conditions, the patient may be at risk for a fall.

15. What significant instruction should a nurse include to a patient being discharged after ear surgery?

- a. Use stool softeners with caution.
- b. Assume your usual activities.
- c. Avoid blowing your nose.
- d. Shampoo your hair with baby shampoo. ANS: C

The patient should avoid blowing the nose to prevent back pressure in the eustachian tube. The patient should take stool softeners, limit activity until balance returns, and delay shampooing.

16. A patient with diabetes says that he needs a hearing aid because he cannot hear well, and everything sounds garbled and distant. What type of hearing loss should the nurse suspect?

- a. Mixed hearing loss
- b. Conductive hearing loss
- c. Central hearing loss
- d. Sensorineural hearing loss ANS: D

A patient with long-term diabetes may have a sensorineural hearing loss that is not helped by hearing aids.

17. Which nursing diagnosis should take priority in a nursing care plan for a patient with Mnire disease?

- a. Social isolation, related to anxiety
- b. Risk for injury, related to falls
- c. Risk for deficient fluid intake, related to weakness
- d. Nutrition: Less than body requirements, related to fatigue ANS: B

The nursing diagnosis that should take priority is that of preventing injury to the patient. A patient with Mnire disease is prone to falls because of dizziness.

18. Which nursing diagnosis is most appropriate when considering the impact of a hearing deficit when planning care for a child who has been diagnosed with a hearing impairment?

- a. Risk for injury, related to hearing impairment
- b. Risk for social isolation, related to hearing impairment
- c. Knowledge deficit, related to hearing impairment
- d. Anxiety, related to hearing impairment ANS: B

The loss of hearing and the mild stigma associated with hearing impairment place the newly diagnosed child at risk for social isolation.

19. What information should a nurse stress when teaching a patient with Mnire disease about managing the disorder?

- a. Limiting fluid intake
- b. Avoiding the use of alcohol and tobacco
- c. Using antiemetic medications sparingly
- d. Staying active during the day ANS: B

The use of alcohol and tobacco products affects the amount of fluid in the middle ear, worsening the symptoms of Mnire disease. The patient with Mnire disease should drink adequate fluid, use antiemetic medications as needed, and conserve energy during the day.

20. An 85-year-old patient has had age-related changes in the cochlea. What is the most appropriate nursing action for the nurse to implement?

- a. Speak slowly.
- b. Provide assistance with ambulation.
- c. Speak in a lower tone.
- d. Communicate with the patient in writing. ANS: B

Assisting the patient when ambulating will diminish the risk of a fall. Changes in the cochlea will cause dizziness and ataxia.

21. A patient comes to the primary care clinic complaining of a head cold and ear pain with drainage. What should the nurse suspect this patient is experiencing?

- a. Otitis externa
- b. Hearing loss

- c. Acute otitis media
- d. Mastoiditis ANS: C

Acute otitis media is connected with colds and drainage from the ear. A hearing loss may be experienced as well, but the pain and drainage place the need to intervene for the infection first.

22. A young woman being admitted to the clinic service states that all the members of her family have been hard of hearing. She says her hearing loss became more pronounced when she was pregnant. What term explains this type of hearing loss?

- a. Otosclerosis
- b. Ototoxicity
- c. Otagia
- d. Otitis media ANS: A

Otosclerosis is hereditary, develops in young women, and worsens with pregnancy.

23. What should a nurse include when educating a patient with Meniere disease?

- a. When you feel dizzy, just stay in bed and take your medications.
- b. Decrease your sodium intake and take your diuretic medication between attacks.
- c. Vestibular rehabilitation might help, and you can still drink your morning coffee.
- d. Your vertigo will get better if you take your medications. You won't need any relaxation techniques.

ANS: B

A low-sodium diet and diuretic medications between attacks will prevent edema, which could cause an attack.

24. A 75-year-old patient reports having difficulty hearing in crowds but can hear just fine at home with his wife. What hearing disorder should the nurse suspect?

- a. Otitis media
- b. Presbycusis
- c. Ototoxicity

d. Central deafness ANS: B

Presbycusis is a conductive hearing loss associated with normal aging and is caused by changes in the cochlea.

25. During an intake physical examination, a patient reports that he has been taking 10 aspirin tablets a day for his arthritis. What question should the nurse ask based on this information?

- a. Can you hear high-pitched sounds?
- b. Have you noticed deafness in just one ear?
- c. Do you have ringing in your ears?
- d. Do you experience dizziness when you stand? ANS: C

A ringing in the ears (tinnitus) is an indication of aspirin toxicity. The patient should be advised to stop taking aspirin.

MULTIPLE RESPONSE

26. Which patient behaviors should alert a nurse to a possible hearing deficit? (Select all that apply.)

- a. Watches the speaker's mouth
- b. Gives inappropriate answers to questions
- c. Pulls at the ears
- d. Fails to respond when spoken to
- e. Turns the good ear to the speaker

ANS: A, B, D, E

27. Which common characteristics might a patient with conductive hearing loss display? (Select all that apply.)

- a. Hears adequately in noisy settings
- b. Hears sounds but has difficulty understanding speech
- c. Has improved hearing with hearing aids
- d. Has a history of diabetes mellitus

- e. Speaks in a normal volume ANS: A, C, E

Persons with conductive hearing loss can hear in a noisy setting and can have improved hearing with the use of hearing aids. Persons with conductive hearing loss speak at a normal or soft volume because they can hear themselves. Muffled sounds and a history of diabetes would be associated with sensorineural hearing loss.

MULTIPLE CHOICE

28. The primary purpose of the ciliated mucous membrane in the nose is to:

- a. Warm the inhaled air.
- b. Filter out dust and bacteria.
- c. Filter coarse particles from inhaled air.
- d. Facilitate the movement of air through the nares.

ANS: B

The nasal hairs filter the coarsest matter from inhaled air, whereas the mucous blanket filters out dust and bacteria. The rich blood supply of the nasal mucosa warms the inhaled air.

29. The projections in the nasal cavity that increase the surface area are called the:

- a. Meatus.
- b. Septum.
- c. Turbinates.
- d. Kiesselbach plexus.

ANS: C

The lateral walls of each nasal cavity contain three parallel bony projections: the superior, middle, and inferior turbinates. These increase the surface area, making more blood vessels and mucous membrane available to warm, humidify, and filter the inhaled air.

30. The nurse is reviewing the development of the newborn infant. Regarding the sinuses, which statement is true in relation to a newborn infant?

- a. Sphenoid sinuses are full size at birth.
- b. Maxillary sinuses reach full size after puberty.
- c. Frontal sinuses are fairly well developed at birth.

- d. Maxillary and ethmoid sinuses are the only sinuses present at birth.

ANS: D

Only the maxillary and ethmoid sinuses are present at birth. The sphenoid sinuses are minute at birth and develop after puberty. The frontal sinuses are absent at birth, are fairly well developed at age 7 to 8 years, and reach full size after puberty.

31. The tissue that connects the tongue to the floor of the mouth is the:

- a. Uvula.
- b. Palate.
- c. Papillae.
- d. Frenulum.

ANS: D

The frenulum is a midline fold of tissue that connects the tongue to the floor of the mouth. The uvula is the free projection hanging down from the middle of the soft palate. The palate is the arching roof of the mouth. Papillae are the rough, bumpy elevations on the tongue's dorsal surface.

32. The salivary gland that is the largest and located in the cheek in front of the ear is the gland.

- a. Parotid
- b. Stensen's
- c. Sublingual
- d. Submandibular

ANS: A

The mouth contains three pairs of salivary glands. The largest, the parotid gland, lies within the cheeks in front of the ear extending from the zygomatic arch down to the angle of the jaw. The Stensen's duct (not gland) drains the parotid gland onto the buccal mucosa opposite the second molar. The sublingual gland is located within the floor of the mouth under the tongue. The submandibular gland lies beneath the mandible at the angle of the jaw.

33. In assessing the tonsils of a 30 year old, the nurse notices that they are involuted, granular in appearance, and appear to have deep crypts. What is correct response to these findings?

- a. Refer the patient to a throat specialist.

- b. No response is needed; this appearance is normal for the tonsils.
- c. Continue with the assessment, looking for any other abnormal findings.
- d. Obtain a throat culture on the patient for possible streptococcal (strep) infection.

ANS: B

The tonsils are the same color as the surrounding mucous membrane, although they look more granular and their surface shows deep crypts. Tonsillar tissue enlarges during childhood until puberty and then involutes.

34. The nurse is obtaining a health history on a 3-month-old infant. During the interview, the mother states, I think she is getting her first tooth because she has started drooling a lot. The nurses best response would be:

- a. You're right, drooling is usually a sign of the first tooth.
- b. It would be unusual for a 3 month old to be getting her first tooth.
- c. This could be the sign of a problem with the salivary glands.
- d. She is just starting to salivate and hasn't learned to swallow the saliva.

ANS: D

In the infant, salivation starts at 3 months. The baby will drool for a few months before learning to swallow the saliva. This drooling does not herald the eruption of the first tooth, although many parents think it does.

35. The nurse is assessing an 80-year-old patient. Which of these findings would be expected for this patient?

- a. Hypertrophy of the gums
- b. Increased production of saliva
- c. Decreased ability to identify odors
- d. Finer and less prominent nasal hair

ANS: C

The sense of smell may be reduced because of a decrease in the number of olfactory nerve fibers. Nasal hairs grow coarser and stiffer with aging. The gums may recede with aging, not hypertrophy, and saliva production decreases.

40. The nurse is performing an oral assessment on a 40-year-old Black patient and notices the presence of a 1 cm, nontender, grayish-white lesion on the left buccal mucosa. Which one of these statements is true? This lesion is:

- a. Leukoedema and is common in dark-pigmented persons.
- b. The result of hyperpigmentation and is normal.
- c. Torus palatinus and would normally be found only in smokers.
- d. Indicative of cancer and should be immediately tested.

ANS: A

Leukoedema, a grayish-white benign lesion occurring on the buccal mucosa, is most often observed in Blacks.

41. While obtaining a health history, a patient tells the nurse that he has frequent nosebleeds and asks the best way to get them to stop. What would be the nurses best response?

- a. While sitting up, place a cold compress over your nose.
- b. Sit up with your head tilted forward and pinch your nose.
- c. Just allow the bleeding to stop on its own, but dont blow your nose.
- d. Lie on your back with your head tilted back and pinch your nose.

ANS: B

With a nosebleed, the person should sit up with the head tilted forward and pinch the nose between the thumb and forefinger for 5 to 15 minutes.

42. A 92-year-old patient has had a stroke. The right side of his face is drooping. The nurse might also suspect which of these assessment findings?

- a. Epistaxis
- b. Rhinorrhea
- c. Dysphagia
- d. Xerostomia

ANS: C

Dysphagia is difficulty with swallowing and may occur with a variety of disorders, including stroke and other neurologic diseases. Rhinorrhea is a runny nose, epistaxis is a bloody nose, and xerostomia is a dry mouth.

43. While obtaining a health history from the mother of a 1-year-old child, the nurse notices that the baby has had a bottle in his mouth the entire time. The mother states, It makes a great pacifier. The best response by the nurse would be:

- a. You're right. Bottles make very good pacifiers.
- b. Using a bottle as a pacifier is better for the teeth than thumb-sucking.
- c. It's okay to use a bottle as long as it contains milk and not juice.
- d. Prolonged use of a bottle can increase the risk for tooth decay and ear infections.

ANS: D

Prolonged bottle use during the day or when going to sleep places the infant at risk for tooth decay and middle ear infections.

44. A 72-year-old patient has a history of hypertension and chronic lung disease. An important question for the nurse to include in the health history would be:

- a. Do you use a fluoride supplement?
- b. Have you had tonsillitis in the last year?
- c. At what age did you get your first tooth?
- d. Have you noticed any dryness in your mouth?

ANS: D

Xerostomia (dry mouth) is a side effect of many drugs taken by older people, including antidepressants, anticholinergics, antispasmodics, antihypertensives, antipsychotics, and bronchodilators.

45. The nurse is using an otoscope to assess the nasal cavity. Which of these techniques is correct?

- a. Inserting the speculum at least 3 cm into the vestibule
- b. Avoiding touching the nasal septum with the speculum
- c. Gently displacing the nose to the side that is being examined
- d. Keeping the speculum tip medial to avoid touching the floor of the nares

ANS: B

The correct technique for using an otoscope is to insert the apparatus into the nasal vestibule, avoiding pressure on the sensitive nasal septum. The tip of the nose should be lifted up before inserting the speculum.

46. The nurse is performing an assessment on a 21-year-old patient and notices that his nasal mucosa appears pale, gray, and swollen. What would be the most appropriate question to ask the patient?

- a. Are you aware of having any allergies?
- b. Do you have an elevated temperature?
- c. Have you had any symptoms of a cold?
- d. Have you been having frequent nosebleeds?

ANS: A

With chronic allergies, the mucosa looks swollen, boggy, pale, and gray. Elevated body temperature, colds, and nosebleeds do not cause these mucosal changes.

47. The nurse is palpating the sinus areas. If the findings are normal, then the patient should report which sensation?

- a. No sensation
- b. Firm pressure
- c. Pain during palpation
- d. Pain sensation behind eyes

ANS: B

The person should feel firm pressure but no pain. Sinus areas are tender to palpation in persons with chronic allergies or an acute infection (sinusitis).

48. During an oral assessment of a 30-year-old Black patient, the nurse notices bluish lips and a dark line along the gingival margin. What action would the nurse perform in response to this finding?

- a. Check the patient's hemoglobin for anemia.
- b. Assess for other signs of insufficient oxygen supply.
- c. Proceed with the assessment, knowing that this appearance is a normal finding.
- d. Ask if he has been exposed to an excessive amount of carbon monoxide.

ANS: C

Some Blacks may have bluish lips and a dark line on the gingival margin; this appearance is a normal finding.

49. During an assessment of a 20-year-old patient with a 3-day history of nausea and vomiting, the nurse notices dry mucosa and deep vertical fissures in the tongue. These findings are reflective of:

- a. Dehydration.
- b. Irritation by gastric juices.
- c. A normal oral assessment.
- d. Side effects from nausea medication.

ANS: A

Dry mouth occurs with dehydration or fever. The tongue has deep vertical fissures.

50. A 32-year-old woman is at the clinic for little white bumps in my mouth. During the assessment, the nurse notes that she has a 0.5 cm white, nontender papule under her tongue and one on the mucosa of her right cheek. What would the nurse tell the patient?

- a. These spots indicate an infection such as strep throat.
- b. These bumps could be indicative of a serious lesion, so I will refer you to a specialist.
- c. This condition is called leukoplakia and can be caused by chronic irritation such as with smoking.
- d. These bumps are Fordyce granules, which are sebaceous cysts and are not a serious condition.

ANS: D

Fordyce granules are small, isolated white or yellow papules on the mucosa of the cheek, tongue, and lips. These little sebaceous cysts are painless and are not significant. Chalky, white raised patches would indicate leukoplakia. In strep throat, the examiner would see tonsils that are bright red, swollen, and may have exudates or white spots.

1. According to the National Association of Orthopaedic Nurses (NAON), which of the following is possibly the most effective cleansing solution for pin-site care?

- a. Normal saline
- b. Hydrogen peroxide
- c. Chlorhexidine
- d. None of the above

ANS: C

The second group to develop clinical practice guidelines is the United States-based NAON, which indicated that chlorhexidine 2 mg/mL solution is possibly the most effective cleansing solution for pin-site care. A British consensus group of orthopedic nurse experts recommends that pin sites be cleaned only with sterile normal saline or water to remove crusts around the pins (Walker, 2007). Walker found no definitive evidence to support a pin-site dressing containing an antimicrobial agent. Several studies have found that although hydrogen peroxide is a common cleansing agent, it may cause damage to the healthy tissue surrounding the pin.

2. The patient has a broken leg and needs to have a cast applied. When plaster of Paris is compared and contrasted versus the newer synthetic casts, which of the following statements is true?

- a. Plaster of Paris can tolerate earlier weight bearing than synthetic casts.
- b. Plaster of Paris is more expensive than synthetic casts.
- c. Synthetic casts can withstand contact with water better than plaster of Paris.
- d. Synthetic casts are lighter but take longer to set than plaster of Paris.

ANS: C

Although the newer synthetic casts are more expensive than plaster of Paris, they can withstand contact with water without crumbling. A plaster of Paris cast has multiple rolls of open-weave cotton saturated with calcium sulfate crystals. These casts are heavier than synthetic casts and take 24 to 72 hours with no weight bearing or application of pressure while drying. Synthetic casts are lightweight, set in 15 minutes, and can sustain weight bearing or pressure in 15 to 30 minutes.

3. An expected outcome of cast application that the nurse evaluates is:

- a. skin irritation at the cast edges.
- b. decreased capillary refill and pallor.

- c. tingling and numbness distal to the cast.
- d. slight edema, soreness, and limited range of motion.

ANS: D

Expected outcomes after completion of the procedure: Patient initially experiences only slight edema, soreness, mild pain, and some limitation of active range of joint motion (ROJM) from being in the cast. Expected outcomes after completion of the procedure: Skin around proximal and distal cast edges remains intact without irritation, is free of pressure and friction from the cast edges, and is warm and of normal color with capillary refill of 3 seconds or less; and the patient verbalizes no abnormal or unusual sensations and is able to move the fingers or toes below the casted part. Neurovascular function to the body part is maintained.

4. The patient is admitted for a fractured tibia. The nurse is preparing for cast application and expects to administer a(n) to the patient minutes before the procedure.

- a. oral analgesic 10
- b. intramuscular (IM) analgesic 10
- c. intravenous (IV) analgesic 2 to 5
- d. muscle relaxant 10

ANS: C

Administer analgesic per order before cast application: IV, 2 to 5 minutes before the procedure. This is the most effective way to reduce pain during cast application.

Alternately, you could administer analgesic by mouth (PO), 30 to 40 minutes before cast application to obtain optimal analgesic effect. If administering analgesic via IM injection, give does 20 to 30 minutes before cast application for optimal analgesic effect.

Administer muscle relaxant 30 minutes before cast application if spasms are present. Often, muscle spasms are treated more effectively with skeletal muscle relaxants than with opioids.

5. An appropriate technique for the nurse to implement for the patient who is being casted is to:
- a. apply ice to the top of the cast.
 - b. maintain the extremity below heart level.
 - c. handle the wet cast with the fingertips.

- d. fold the stockinette or padding over the outer cast edges.

ANS: D

Assist with finishing by folding the stockinette or other padding down over the outer edge of the cast to provide a smooth edge. Smooth edges lessen possible skin irritation. When the cast is finished with a stockinette, later petaling with tape is not required when the cast is dry. Elevation and ice can be ordered, but ice would not be applied to the top of the wet cast because the weight could change the shape of the cast, causing indentations that can lead to pressure areas. Maintain elevation at or above heart level; elevation

enhances venous return and decreases edema. Handle the casted extremity with palms only until the cast is dry. Fingers can cause indentations that can lead to pressure areas.

- 6. When teaching cast care, the nurse instructs the patient to:
 - a. blow dry the wet cast on the hot setting.
 - b. report changes in sensation or mobility to the area.
 - c. use only soft objects to slide down the cast for scratching.
 - d. cut away the edges of the cast if the skin becomes irritated.

ANS: B

The patient must monitor neurovascular status, paying particular attention to blueness or paleness of the nails, pain, a feeling of tightness, numbness, or a tingling sensation.

Caution the patient against drying a wet cast with a hair dryer; this can cause plaster to crack or the skin underneath to be damaged. The patient should avoid sticking objects down or into the cast to scratch because these objects can cause breaks in underlying skin and subsequent infection. Inform the patient to inspect the cast and petal rough edges to reduce the risk of trauma to underlying skin and the need for cast changes. Small pieces (petals) of adhesive tape 2.5 to 5.0 cm (1 to 2 inches) are cut and taped smoothly over the edge of the cast.

- 7. For cast removal, which of the following instructions should the nurse provide to the patient?
 - a. Discomfort will be felt from the cast saw.
 - b. An enzyme wash may be applied to intact skin.
 - c. The skin will be scrubbed very well after the removal.
 - d. Aggressive range-of-motion exercises will be performed after removal.

ANS: B

If the skin is intact, gently apply a cold water enzyme wash to the skin; let it stay on the skin 15 to 20 minutes. This helps dissolve or emulsify dead cells and fatty deposits on tissues and prevents injury to delicate tissue. A cast saw vibrates the cast loose; the patient will feel heat and vibration. Do not scrub the skin because this may traumatize delicate tissue and lead to skin breakdown. It may take several days before all residue is removed from the skin. Obtain a physicians order to gently put joints through active and passive ROM. Clarify the level of activity allowed. Joints and muscles will be stiff and weak. Activity is resumed slowly to avoid reinjury.

8. The patient is brought into the emergency department after falling on the ice in her driveway. She is suspected of having a fractured hip. After comparing different available types of traction, she anticipates that which of the following will be used?

- a. Bryants traction
- b. Dunlops traction
- c. Bucks extension
- d. Gallows traction

ANS: C

Bucks extension provides temporary immobilization of a hip fracture until open reduction and internal fixation (ORIF) can be performed. It also reduces muscle spasms, contractures, and dislocations and occasionally is used as an interim treatment for lumbosacral muscle spasms that cause low back pain. Bryants traction (called Gallows in England) is no longer used because of the risk for gravitational vascular draining of the extremities and the possible tourniquet effect of bandages, triggering vasospasms and avascular necrosis. Dunlops traction is a simultaneous horizontal form of Bucks extension to the humerus with an accompanying vertical Bucks extension to the forearm.

9. Which type of traction does the nurse anticipate will be used for an adult patient with a fractured humerus?

- a. Bryants traction
- b. Dunlops traction
- c. Gallows traction
- d. Bucks extension

ANS: B

Dunlops traction is a simultaneous horizontal form of Bucks extension to the humerus with an accompanying vertical Bucks extension to the forearm. Bryants traction (called Gallows in England) is no longer used because of the risk for gravitational vascular draining of the extremities and the possible tourniquet effect of bandages, triggering vasospasms and avascular necrosis. Bucks extension provides temporary immobilization of a hip fracture until ORIF can be performed. It also reduces muscle spasms, contractures, and dislocations and occasionally is used as an interim treatment for lumbosacral muscle spasms that cause low back pain.

10. For a patient who is to be placed in Russells traction, the nurse prepares the:
- a. occipital area.
 - b. arm and forearm.
 - c. back and abdomen.
 - d. lower extremities.

ANS: D

Russells traction is a modification of Bucks extension in which Newtons third law of motion (for each force in one direction, there is an equal force in the opposite direction) is used to double the amount of pull through the arrangement of ropes, pulleys, and weights.

11. The nurse places the patient in traction. Expected outcomes would include which of the following?
- a. Alignment of fracture fragments with formation of callus within 24 hours
 - b. Verbalization of pain level as a 4 on a scale of 0 to 10
 - c. Verbalization of immediate relief of symptoms
 - d. Distal skin tissue becoming cooler, with capillary refill greater than 3 seconds

ANS: B

Expected outcomes would include verbalization of increased comfort after traction application and rating of pain as 4 or lower on a scale of 0 to 10 since injured tissues and bone are stabilized. Evidence of callus may not become apparent for 7 to 10 days or longer. Sufficient time in traction (varying from 1 to 10 or more days) elicits symptom relief. It takes time for inflammation to decrease and tissues to regain

more normal function. Neurovascular status should remain stable. Distal skin tissue remains warm and of a normal color with capillary refill of 3 seconds or less.

12. While in Bucks extension traction, the patient may be positioned on the back:
- a. with the head of the bed elevated 45 degrees.
 - b. turning to the unaffected side for 10- to 15-minute periods.
 - c. with the buttocks slightly elevated off of the bed.
 - d. with the bed tilted toward the side that is opposite the traction.

ANS: B

Position varies with the part of the body to be placed in traction, plus effects of weight and gravity. Body parts are kept aligned anatomically. With Bucks extension, the patient is primarily on his back but may be allowed to turn to the unaffected side for brief periods (10 to 15 minutes). With Bucks extension, the patient is on his back with the head of the bed flat or elevated no more than 30 degrees. With Dunlops traction, the patient may be tilted on low-shock blocks toward the side opposite the traction.

13. An appropriate technique for the nurse to implement for a patient who is being placed in traction is to:
- a. apply a traction boot tightly.
 - b. drop the weights after the traction is attached.
 - c. assess neurovascular status every 1 to 2 hours for the first day.
 - d. shave the hair off the area where traction is to be placed.

ANS: C

Assess neurovascular status 15 minutes after application of skin traction and every 1 to 2 hours for 24 hours, and then extend to every 4 hours if the patient is stabilizing. Ensure that boot size is correct. A traction boot should fit snugly (not too tight or too loose). Too tight leads to pressure on skin, peroneal nerve, and vascular structures. When all traction materials and spreader bars are in place, weights are placed on weight holders and are attached to a loop in the rope. The weights then are lowered slowly and gently until the rope is taut. Traction is established slowly to avoid involuntary muscle spasms or pain for the patient. Shaving may create micro nicks that could become inflamed under traction strips.

14. For a patient in traction who has skeletal pins, the nurse should:
- a. use povidone-iodine to cleanse the pin site.
 - b. apply antiseptic ointment and cover with a split dressing.

- c. use hydrogen peroxide as a rinse before a dressing is applied.
- d. do both pin sites at the same time, with the same swab and solution.

ANS: B

Using a sterile applicator, apply a small amount of topical antibiotic ointment to the pin site and cover with a sterile 2 x 2 split gauze dressing. (Note: Some physicians leave the site uncovered.) Dip a sterile cotton-tipped applicator into a sterile container of chlorhexidine 2 mg/mL solution. Place a sterile applicator by the pin, and roll it along the skin, away from the insertion site. Clean outward in a circular fashion from the pin.

Dispose of the applicator. Remove crusts from the pin site when signs of infection are present. Chlorhexidine 2 mg/mL is the most effective cleansing solution for pin-site care. Never touch one pin site with material used on another. This prevents cross-contamination.

15. For a patient with a fractured femur, a nurse is alert to the possibility of a fat embolus. What should the nurse specifically watch for?

- a. Bradypnea
- b. Restlessness
- c. Bradycardia
- d. Calf pain

ANS: B

Assess for indicators of hypoxemia, such as restlessness or agitation. Recognize early signs of fat embolism syndrome. Signs of hypoxemia include tachypnea, not bradypnea. Signs of hypoxemia include tachycardia, not bradycardia. Calf pain would indicate a DVT, not a fat embolism.

16. In planning nursing care, the nurse knows that she will need to provide an abduction pillow for which patient?

- a. A patient who will be immobilized for a long time
- b. A patient who has undergone repair of a fractured right arm
- c. A patient who is post hip replacement surgery
- d. A patient who has a severely sprained ankle

ANS: C

The abduction splint or pillow, used after hip replacement surgery, maintains the patients legs in an abducted position. This permits the patient to be turned without changing the position of the healing limb, and prevents dislocation of the hip prosthesis.

MULTIPLE RESPONSE

1. The nurse is caring for a patient who has had a new cast applied. The nurse is performing a neurovascular assessment so as to detect signs of possible compartment syndrome. Which of the following are signs of compartment syndrome? (Select all that apply.)

- a. Inability to move body parts distal to the cast
- b. Pain on passive motion of distal body parts
- c. Hyperventilation
- d. Tachycardia

ANS: A, B, C, D

Signs of development of compartment syndrome, cast syndrome, or severe claustrophobia may result from snugness of the cast, which is common for patients in a

spica or body cast. Observe the patient for signs of pain or anxiety; ask the patient to rate pain on a scale from 0 to 10; observe for inability to move body parts distal to the cast, pain on passive motion of distal body parts, hyperventilation, swallowing of air (aerophagia), nausea and/or vomiting, tachycardia, and blood pressure elevation.

2. The patient is in traction and is at risk for fat embolism syndrome. Signs and symptoms of fat embolism include which of the following? (Select all that apply.)

- a. Chest pain
- b. Tachypnea
- c. Tachycardia
- d. Apprehension
- e. Altered LOC

ANS: A, B, C, D

Symptoms of possible fat embolism include clinical manifestations of dyspnea, tachycardia, cyanosis, and circulatory collapse.

3. The patient has been in skeletal traction for external fixation of his femur for 2 days. Suddenly, he calls the nurse complaining of chest pain and shortness of breath. The nurse notes that the patient appears anxious, and that his pulse and respirations are elevated. She should do which of the following? (Select all that apply.)

- a. Massage the lower extremity
- b. Elevate the head of the bed
- c. Administer oxygen
- d. Notify the physician

ANS: B, C, D

If symptoms of pulmonary embolus are evident, elevate the head of the bed (if conscious), administer oxygen, and notify the physician immediately. Do not massage the lower extremity.

4. Skeletal traction is implemented primarily for: (Select all that apply.)

- a. simple fracture.
- b. multiple trauma.
- c. fractured ankle.
- d. acetabular fracture.
- e. cervical fracture.

ANS: B, C, D, E

Skeletal traction immobilizes fractures of the cervical spine, fractures of the femur below the trochanter, and some fractures of the bones of the arm or ankle. It is also used to immobilize the femoral head in an acetabular fracture.

COMPLETION

1. _____ involves monitoring for the five Ps (pain, pallor, pulselessness, paresthesia, and paralysis).

ANS:

Neurovascular assessment

It is essential to monitor for the five Ps (pain, pallor, pulselessness, paresthesia, and paralysis) of neurovascular status because permanent damage may result if circulation is not restored or pressure is not removed.

2. The patient has fallen and broken her leg. To keep the leg bones aligned and to reduce muscle spasms, the physician orders the patient to be placed in .

ANS:

Bucks traction

Bucks traction is the most common type of adult skin traction. It is applied to the legs to provide temporary immobilization of the hip while reducing muscle spasms, contractures, and dislocations.

MSC: NCLEX: Physiological Integrity

3. A is an externally applied structure that holds musculoskeletal tissues in a specific position to permit healing of injuries or fractures or to align malpositioned tissues.

ANS:

cast

A cast is an externally applied structure that holds musculoskeletal tissues in a specific position to permit healing of injuries or fractures or to align malpositioned tissues, as in clubfoot or congenital hip dislocation.

4. After application of the cast, the nurse ensures that plaster crumbs are removed and rough edges are to prevent skin breakdown.

ANS:

petaled

After application of the cast, ensure that plaster crumbs are removed and rough edges are petaled to prevent skin breakdown.

5. When applying a plaster of Paris cast, it is important to keep the cast exposed for at least minutes.

ANS:

15

fifteen

Explain that the patient may experience warmth during the cast application process. Plaster gives off heat from a chemical reaction when drying. Keep the cast exposed to permit maximum dissipation of the heat. Most casts cool in about 15 minutes.

6. After applying a cast, the nurse should be able to insert fingers between the cast and the limb.

ANS:

2

two

Plaster must be of sufficient thickness to give strength to the cast. More than two fingers space in the cast indicates that the cast is too loose and will not support the limb; less than two fingers space indicates that the cast may be too tight and may inhibit circulation.

7. may occur when pressure within a casted extremity increases. ANS:

Compartment syndrome

When pressure within a casted extremity increases, this may lead to compartment syndrome, which occurs when pressure within the muscle compartment increases as a result of edema, bleeding, or decreased venous return. The fascia covering the muscle group acts as a tourniquet on structures within the compartment such as nerves, blood vessels, and muscle tissue.

8. applies a pull indirectly to the bone via straps attached to the skin around the structure.

ANS:

Skin traction

Skin traction applies a pull indirectly to the bone via straps and a sling or boot applied to the skin around the structure. Skin traction typically applies between 5 and 7 lb and is commonly used for minor trauma or immediate immobilization before surgery.

9. consists of a metal frame that secures pins inserted through the bone above and below the fracture site. It stabilizes a fracture with hardware visible outside the body.

ANS:

External fixation

External fixation consists of a metal frame that secures pins inserted through the bone above and below a fracture site. External fixation stabilizes a fracture with hardware visible outside the body. It fosters the healing of complex fractured bones, usually in the lower extremities.

10. An immobilization device used to immobilize and protect a body part is known as a

. ANS:

splint

Immobilization devices increase stability, support weak extremities, or reduce the load on weight-bearing structures such as hips, knees, or ankles. A splint immobilizes and protects a body part.

Chapter 31: Skeletal Muscle and Peripheral Nervous System

MULTIPLE CHOICE

1. Which of the following cells produce new bone?
 - a. Osteocytes

- b. Osteoblasts
- c. Osteoclasts
- d. Stem cells from the bone marrow

ANS: B

2. What is the chemical transmitter released at the neuromuscular junction?

- a. Norepinephrine
- b. GABA
- c. Serotonin
- d. Acetylcholine

ANS: D

3. What are the two types of bone tissue?

- a. Vascular and nonvascular
- b. Spongy and calcified
- c. Compact and cancellous
- d. Dense and pliable

ANS: C

4. Which of the following would identify an open or compound fracture?

- a. The skin and soft tissue are exposed at the fracture site.
- b. A bone is crushed into many small pieces.
- c. The bone appears bent with a partial fracture line.
- d. One end of a bone is forced into an adjacent bone.

ANS: A

5. Which of the following describes a Colles fracture?

- a. The distal radius is broken.

- b. The distal fibula is broken.
- c. A vertebra appears crushed.
- d. A spontaneous fracture occurs in weakened bone.

ANS: A

6. During the fracture healing process, the hematoma:
- a. is broken down and absorbed immediately.
 - b. provides the base for bone cells to produce new bone.
 - c. is the structure into which granulation tissue grows.
 - d. produces fibroblasts to lay down new cartilage.

ANS: C

7. When a fracture is healing, the procallus or fibrocartilaginous callus:
- a. can bear weight.
 - b. serves as a splint across the fracture site.
 - c. is the tissue that lays down new cartilage.
 - d. is made up of new bone.

ANS: B

8. The inflammation surrounding a fracture site during the first few days may complicate healing by causing:
- a. excessive bone movement.
 - b. severe ischemia and tissue necrosis.
 - c. malunion or nonunion.
 - d. fat emboli to form.

ANS: B

9. What is a sign of a dislocation?
- a. Crepitus
 - b. Pain and tenderness

- c. Increased range of motion at a joint
- d. Deformity at a joint

ANS: D

10. All of the following predispose to osteoporosis EXCEPT:

- a. weight-bearing activity.
- b. a sedentary lifestyle.
- c. long-term intake of glucocorticoids.
- d. calcium deficit.

ANS: A

11. Which of the following statements does NOT apply to osteoporosis?

- a. Bone resorption is greater than bone formation.
- b. It causes compression fractures of the vertebrae.
- c. Osteoporosis is always a primary disorder.
- d. It often leads to kyphosis and loss of height.

ANS: C

12. Which of the following best describes the typical bone pain caused by osteogenic sarcoma?

- a. Intermittent, increasing with activity
- b. Sharp, increased with joint movement
- c. Mild, aching when weight-bearing
- d. Steady, severe, and persisting with rest

ANS: D

13. How is Duchennes muscular dystrophy inherited?

- a. Autosomal recessive gene
- b. X-linked recessive gene

- c. Autosomal dominant gene
- d. Codominant gene

ANS: B

14. Which of the following is true about Duchennes muscular dystrophy?
- a. There is difficulty climbing stairs or standing up at 2 to 3 years of age.
 - b. It involves only the legs and pelvis.
 - c. Skeletal muscle atrophy can be seen in the legs of a toddler.
 - d. It cannot be detected in any carriers.

ANS: A

15. The most common type of joint, which are freely movable, are called:
- a. Synarthroses
 - b. Amphiarthroses
 - c. Anarthroses
 - d. Diarthroses

ANS: D

16. Which of the following is characteristic of osteoarthritis?
- a. Inflammation and fibrosis develop at the joints.
 - b. Degeneration of articulating cartilage occurs in the large joints.
 - c. It progresses bilaterally through the small joints.
 - d. There are no changes in the bone at the affected joints.

ANS: B 17. What is a typical characteristic of the pain caused by osteoarthritis?

- b. Quite severe in the early stages
- c. Aggravated by general muscle aching
- d. Increased with weight-bearing and activity

ANS: D

18. What limits joint movement in osteoarthritis?

- a. The osteophytes and irregular cartilage surface
- b. The wider joint space
- c. Decreased amount of synovial fluid in the cavity
- d. Fibrosis involving the joint capsule and ligaments

ANS: A

19. Joints affected by osteoarthritis can sometimes affect healthy joints by:

- a. causing enzymes to be released that travel to other joints.
- b. bacteria traveling from the affected joint to a healthy one through the bloodstream.
- c. inflammation and edema affecting the entire limb.
- d. the affected individuals exerting stress on the normal joint to protect the damaged one.

ANS: D

20. What is the typical joint involvement with rheumatoid arthritis?

- a. Random single joints, progressing to involve other joints
- b. Bilateral small joints, symmetrical progression to other joints
- c. Abused or damaged joints first, then joints damaged by compensatory movement
- d. Progressive degeneration in selected joints

ANS: B

21. What is the basic pathology of rheumatoid arthritis?

- a. Degenerative disorder involving the small joints

- b. Chronic inflammatory disorder affecting all joints
- c. Systemic inflammatory disorder due to an autoimmune reaction
- d. Inflammatory disorder causing damage to many organs

ANS: C

22. How is the articular cartilage damaged in rheumatoid arthritis?

- a. Enzymatic destruction by the pannus
- b. Inflamed synovial membrane covers the cartilage
- c. Fibrous tissue connects the ends of the bones
- d. Blood supply to the cartilage is lost

ANS: A

23. How does the joint appear during an exacerbation of rheumatoid arthritis?

- a. Relatively normal
- b. Enlarged, firm, crepitus with movement
- c. Deformed, pale, and nodular
- d. Red, warm, swollen, and tender to touch

ANS: D

24. Ankylosis and deformity develop in rheumatoid arthritis because:

- a. skeletal muscle hypertrophies.
- b. fibrosis occurs in the joint.
- c. replacement cartilage changes alignment.
- d. ligaments and tendons shorten.

ANS: A

25. Systemic effects of rheumatoid arthritis are manifested as:

- a. nodules in various tissues, severe fatigue, and anorexia.

- b. headache, leukopenia, and high fever.
- c. swelling and dysfunction in many organs.
- d. progressive damage to a joint.

ANS: A

26. What is a common effect of long-term use of glucocorticoids to treat rheumatoid arthritis?

- a. Leukocytosis
- b. Osteoporosis
- c. Severe anemia
- d. Orthostatic hypotension

ANS: B

27. Juvenile rheumatoid arthritis (JRA) differs from the adult form in that:

- a. only small joints are affected.
- b. rheumatoid factor is not present in JRA, but systemic effects are more severe.
- c. onset is more insidious in JRA.
- d. deformity and loss of function occur in most children with JRA.

ANS: B

28. Which of the following distinguishes septic arthritis?

- a. Multiple joints that are swollen, red, and painful at one time
- b. Presence of mild fever, fatigue, and leukocytosis
- c. Purulent synovial fluid present in a single, swollen joint
- d. Presence of many antibodies in the blood

ANS: C

29. Which of the following may precipitate an attack of gout?

- a. A sudden increase in serum uric acid levels

- b. Severe hypercalcemia
- c. Mild trauma to the toes
- d. Development of a tophus

ANS: A

30. Where does inflammation usually begin in an individual with ankylosing spondylitis?

- a. Costovertebral joints with progression down the spine
- b. Cervical and thoracic vertebrae, causing kyphosis
- c. Sacroiliac joints with progression up the spine
- d. Peripheral joints and then proceeds to the vertebrae

ANS: C

31. What is a common outcome of fibrosis, calcification, and fusion of the spine in ankylosing spondylitis?

- a. Damage to the spinal nerves and loss of function
- b. Frequent fractures of long bones
- c. Impaired heart function
- d. Rigidity, postural changes, and osteoporosis

ANS: D

32. Which statement applies to menisci?

- a. They are found in the hip joints.
- b. They are secretory membranes in joints.
- c. They prevent excessive movement of joints.
- d. They are found in the shoulder joint.

ANS: C

33. Which factors delay healing of bone fractures?

- 1. Lack of movement of the bone
- 2. Prolonged inflammation and ischemia

- 3. Presence of osteomyelitis
- 4. Close approximation of bone ends
- a. 1, 2
- b. 1, 3
- c. 2, 3
- d. 3, 4

ANS: C

- 34. What is the likely immediate result of fat emboli from a broken femur?
- a. Additional ischemia in the broken bone
- b. Nonunion or malunion of the fracture
- c. Pulmonary inflammation and obstruction
- d. Abscess and infection at a distant site

ANS: C

- 35. A sprain is a tear in a:
- a. ligament.
- b. tendon.
- c. skeletal muscle.
- d. meniscus.

ANS: A

- 36. Therapeutic measures for osteoporosis include:
- a. nonweight-bearing exercises.
- b. dietary supplements of calcium and vitamin D.
- c. transplants of osteoblasts.
- d. avoidance of all hormones.

ANS: B

37. What is the distinguishing feature of primary fibromyalgia syndrome?
- a. Joint pain and stiffness throughout the body
 - b. Degeneration and atrophy of skeletal muscles in back and lower limbs
 - c. Localized areas of constant pain
 - d. Specific trigger points for pain and tenderness

ANS: D

38. Ewings sarcoma metastasizes at an early stage to the:
- a. brain.
 - b. liver.
 - c. lungs.
 - d. other bones.

ANS: C

39. Immovable joints are called:
- a. amphiarthroses.
 - b. synarthroses.
 - c. diarthroses.
 - d. synovial joints.

ANS: B

40. Rickets results from:
- a. excessive bone resorption by osteoclasts.
 - b. a deficit of vitamin D and phosphates.
 - c. replacement of bone by fibrous tissue.
 - d. hyperparathyroidism.

ANS: B

41. Pagets disease often leads to which of the following?

- a. A reduction in bone fractures
- b. Decreased intracranial pressure
- c. Cardiovascular disease
- d. Disintegration of joint cartilage

ANS: C

42. Bones classified as irregular would include:

- a. skull bones.
- b. the mandible.
- c. wrist bones.
- d. the femur.

ANS: B

43. A dislocation is:

- a. the tearing of a tendon in the joint.
- b. the separation of bones in the joint with a loss of contact.
- c. the twisting of a joint, causing excessive inflammation of the surrounding tissue.
- d. the oversteering of ligaments, causing loss of elasticity.

ANS: B

44. A diagnostic test that measures the electrical charge of muscle contraction and can help differentiate muscle disorders from neurological disease is a/an:

- a. electromyogram.
- b. arthroscopy.
- c. radiograph.
- d. electroencephalograph.

ANS: A

45. The type of compound fracture in which there are multiple fracture lines and bone fragments is referred to as a/an:

- a. compression fracture.
- b. greenstick fracture.
- c. simple fracture.
- d. comminuted fracture.

ANS: D

46. Fluid-filled sacs composed of synovial membrane located between structures such as tendons and ligaments and act as additional cushions are called:

- a. articular capsules.
- b. bursae.
- c. synovial sacs.
- d. hyaline chambers.

ANS: B

Chapter 32: The Central Nervous System

1. The intracranial volume that is most capable of compensating for increasing intracranial pressure is the:

- A) brain cell tissue.

B) intravascular blood.

C) surface sulci fluid.

D) cerebrospinal fluid.

2. A late indicator of increased intracranial pressure is:

A) tachycardia.

B) right-sided heart failure.

C) narrow pulse pressure.

D) high mean arterial pressure.

3. Extreme cerebral edema may cause the brain to herniate into another compartment. Upward herniation from the infratentorial compartment against the aqueduct of Sylvius causes:

A) hydrocephalus.

B) cardiac arrest.

C) tissue infarction.

D) intracranial bleeding.

4. Coup and contrecoup cerebral contusion caused by blunt head trauma against a fixed object results in:

A) diffuse axonal injuries.

B) cerebrovascular infarction.

C) momentary unconsciousness.

D) permanent brain tissue damage.

5. An intracranial epidural hematoma causes focal symptoms that can include:

A) ipsilateral pupil dilation.

B) ipsilateral hemiparesis.

- C) diffuse venous bleeding.
 - D) communicating hydrocephalus.
6. The earliest signs of decreased level of consciousness include:
- A) stupor.
 - B) lethargy.
 - C) delirium.
 - D) inattention.
7. Metabolic factors that increase cerebral blood flow include:
- A) increased oxygen saturation.
 - B) increased carbon dioxide level.
 - C) decreased serum sodium level.
 - D) decreased hydrogen ion concentration.
8. Transient ischemic attacks (TIAs) are characterized by ischemic cerebral neurologic deficits that:
- A) indicate aneurysm leakage.
 - B) cause minor residual deficits.
 - C) affect diffuse cerebral functions.
 - D) resolve within one hour of onset.
9. Common manifestations of acute meningococcal meningitis, a highly contagious and lethal form of meningitis, include:
- A) diplopia.
 - B) petechiae.
 - C) papilledema.
 - D) focal paralysis.

10. The moderate stage of the progressive degenerative Alzheimer-type dementia is manifested by behaviors that include:

- A) confusion.
- B) incontinence.
- C) decreased level of consciousness.
- D) social withdrawal.

11. A patient's recent computed tomography (CT) scan has revealed the presence of hydrocephalus. Which of the following treatment measures is most likely to resolve this health problem?

- A) Aggressive diuresis
- B) Placement of a shunt
- C) Administration of hypertonic intravenous solution
- D) Lumbar puncture

12. A high school senior sustained a concussion during a football game. Which of the following signs and symptoms would indicate the presence of postconcussion syndrome in the days and weeks following his injury?

- A) Headaches and memory lapses
- B) Recurrent nosebleeds and hypersomnia
- C) Unilateral weakness and decreased coordination
- D) Neck pain and decreased neck range of motion

13. An elderly male patient has been brought to the emergency department after experiencing stroke-like symptoms a few hours ago, and has been subsequently diagnosed with an ischemic stroke. The care team is eager to restore cerebral perfusion despite the likely death of the brain cells directly affected by the stroke. What is the rationale for the care teams emphasis on restoring circulation?

- A) Failure to restore blood flow creates a severe risk for future transient ischemic attacks.
- B) Necrosis will continue unabated throughout the brain unless blood flow is restored.
- C) Cells of the penumbra may be saved from hypoxic damage if blood flow is promptly restored.
- D) Unless blood flow is restored, the patient faces the risk of progressing to hemorrhagic stroke.

14. A patients emergency magnetic resonance imaging (MRI) has been examined by the physician and tPA has been administered to the patient. What was this patients most likely diagnosis?

- A) Status epilepticus
- B) Subarachnoid hemorrhage
- C) Ischemic stroke
- D) Encephalitis

15. A patient has been diagnosed with a cerebral aneurysm and placed under close observation before treatment commences. Which of the following pathophysiologic conditions has contributed to this patients diagnosis?

- A) Weakness in the muscular wall of an artery
- B) Impaired synthesis of clotting factors
- C) Deficits in the autonomic control of blood pressure
- D) Increased levels of cerebrospinal fluid

16. Which of the following pathophysiologic processes occurs in cases of bacterial meningitis?
- A) Infection in the cerebrospinal fluid causes vasoconstriction and cerebral hypoxia.
 - B) Trauma introduces skin-borne pathogens to the cerebrospinal fluid.
 - C) Infection in the cerebrospinal fluid causes spinal cord compression and neurologic deficits.
 - D) Inflammation allows pathogens to cross into the cerebrospinal fluid.
17. Which of the following individuals has the highest chance of having a medulloblastoma?
- A) An 88-year-old man who has begun displaying signs and symptoms of increased ICP
 - B) A 60-year-old woman who is soon to begin radiation therapy for the treatment of breast cancer
 - C) A 4-year-old child who has become uncoordinated in recent months
 - D) A 68-year-old man who is a smoker and has a family history of cancer
18. A patient with a history of a seizure disorder has been observed suddenly and repetitively patting his knee. After stopping this repetitive action, the patient appears confused and is oriented to person and place but not time. What type of seizure did this patient most likely experience?
- A) Simple partial seizure
 - B) Atonic seizure
 - C) Myoclonic seizure
 - D) Complex partial seizure
19. A patient with a long history of cigarette smoking and poorly controlled hypertension has experienced recent psychomotor deficits as a result of hemorrhagic brain damage. The patients psychomotor deficits are likely the result of:

- A) Alzheimer disease.
- B) frontotemporal dementia (FTD).
- C) vascular dementia.
- D) Wernicke-Korsakoff syndrome.

20. Which of the following statements by the husband of a patient with Alzheimer disease demonstrates an accurate understanding of his wifes medication regimen?

- A) Im really hoping these medications will slow down her mental losses.
- B) Were both holding out hope that this medication will cure her Alzheimers.
- C) I know that this wont cure her, but we learned that it might prevent a bodily decline while she declines mentally.
- D) I learned that if we are vigilant about her medication schedule, she may not experience the physical effects of her disease.

Answer Key

- 1. D
- 2. D
- 3. A
- 4. D
- 5. A
- 6. D
- 7. B
- 8. D
- 9. B
- 10. A

11. B

12. A

13. C

14. C

15. A

16. D

17. C

18. D

19. C

20. A

21. More complex patterns of movements, such as throwing a ball or picking up a fork, are
co

A)

B)

C)

D)

22. Disorders of the pyramidal tracts, such as a stroke, are characterized by:

A) paralysis.

B) hypotonia.

C) muscle rigidity.

D) involuntary movements.

23. Myasthenia gravis is characterized by muscle weakness caused by antibody-mediated
destruction of:

A) periorbital muscles.

- B) thymus gland cells.
- C) skeletal muscle fibers.
- D) acetylcholine receptors.

24. A patient has wrist inflammation causing compression of the median nerve in the carpal tunnel. Manifestations of this syndrome include:

- A) little finger numbness.
- B) forearm paresthesia.
- C) loss of tendon reflexes.
- D) precision grip weakness.

25. The cardinal symptoms of Parkinson disease include:

- A) hypotonia.
- B) bradykinesia.
- C) paresthesia.
- D) lack of sweating.

26. The patient has a traumatic complete spinal cord transection at the C5 level. Intact motor and somatosensory function will include control.

- A) bladder
- B) finger flexion
- C) diaphragm
- D) trunk muscle

27. Unlike disorders of the motor cortex and corticospinal (pyramidal) tract, lesions of the basal ganglia disrupt movement:

- A) without causing paralysis.
- B) posture and muscle tone.

- C) and cortical responses.
- D) of upper motor neurons.

28. The demyelination and degeneration of nerve fibers characteristic of multiple sclerosis is the result of:

- A) decreased oligodendrocytes.
- B) corticospinal injuries.
- C) atherosclerotic destruction.
- D) oligodendrocytic infection.

29. A sudden traumatic complete transection of the spinal cord results in below the level of injury.

- A) flaccid paralysis
- B) vasoconstriction
- C) deep visceral pain
- D) 3+ tendon reflexes

30. Autonomic dysreflexia (autonomic hyperreflexia) is characterized by:

- A) severe spinal shock.
- B) tachycardia and pale skin.
- C) lack of sweat above injury level.
- D) vasospasms and hypertension.

31. A clinician is assessing the muscle tone of a patient who has been diagnosed with a lower motor neuron (LMN) lesion. Which of the following assessment findings is congruent with the patients diagnosis?

- A) Hypotonia
- B) Spasticity
- C) Tetany
- D) Rigidity

32. An elderly patient has been brought to his primary care provider by his wife who is concerned about his recent decrease in coordination. Upon assessment, his primary care provider notes that the patient's gait is wide-based, unsteady, and lacking in fluidity, although his muscle tone appears normal. This patient requires further assessment for which of the following health problems?

- A) Muscle atrophy
- B) Cerebellar disorders
- C) Impaired spinal reflexes
- D) Lower motor neuron lesions

33. Knowing that she is a carrier for Duchenne muscular dystrophy (DMD), a pregnant woman arranged for prenatal genetic testing, during which her child was diagnosed with DMD. As her son develops, the woman should watch for which of the following early signs that the disease is progressing?

- A) Impaired sensory perception and frequent wounds
- B) Spasticity and hypertonic reflexes
- C) Muscle atrophy with decreased coordination
- D) Frequent falls and increased muscle size

34. A patient with a diagnosis of myasthenia gravis has required a mastectomy for the treatment of breast cancer. The surgery has been deemed a success, but the patient has gone into a

myasthenic crisis on postoperative day one. Which of the following measures should the care team prioritize in this patient's immediate care?

- A) Positioning the patient to minimize hypertonia and muscle rigidity
- B) Seizure precautions
- C) Respiratory support and protection of the patient's airway
- D) Monitoring the patient for painful dyskinesias

35. Which of the following disorders of neuromuscular function typically has the most rapid onset?

- A) Duchenne muscular dystrophy (DMD)
- B) Guillain-Barré syndrome
- C) Parkinson disease
- D) Myasthenia gravis

36. A patient who experienced a traumatic head injury from a severe blow to the back of his head now lives with numerous function deficits, including an inability to maintain steady posture while he is in a standing position, although he is steadier when walking. Which of the following disorders most likely resulted from his injury?

- A) Cerebellar dystaxia
- B) Cerebellar tremor
- C) A lower motor neuron lesion
- D) A vestibulocerebellar disorder

37. A patient's recent diagnosis of Parkinson disease has prompted his care provider to promptly begin pharmacologic therapy. The drugs that are selected will likely influence the patient's levels of:

- A) dopamine.
- B) acetylcholine.
- C) serotonin.
- D) adenosine.

38. A patient is devastated to receive a diagnosis of amyotrophic lateral sclerosis (ALS). The symptomatology of this disease is a result of its effects on:

- A) upper motor neurons.
- B) the vestibulocerebellar system.
- C) upper and lower motor neurons.
- D) neuromuscular junctions.

39. Restoration of the integrity of myelin sheaths would likely result in a slowing or stopping of the progression of:

- A) Amyotrophic lateral sclerosis (ALS)
- B) Multiple sclerosis (MS)
- C) Duchenne muscular dystrophy (DMD)
- D) Paralysis caused by *Clostridium botulinum*

40. A patient with a spinal cord injury at T8 would likely retain normal motor and somatosensory function of her:

- A) arms.

B) bowels.

C) bladder.

D)

Answer perineal musculature.

Key

21. A

22. A

23. D

24. D

25. B

26. C

27. A

28. A

29. A

30. D

31. A

32. B

33. D

34. C

35. B

36. D

37. A

38. C

39. B

40. A

Chapter 33: The Eye

MULTIPLE CHOICE

1. What do the extrinsic muscles of the eye control?
 - a. Movement of the eyeball
 - b. Movement of the eyelid
 - c. Size of the pupil
 - d. Shape of the lens

ANS: A

2. What must happen for the pupil of the eye to dilate?
- a. The circular muscle of the iris must contract.
 - b. Cranial nerve III must be activated.
 - c. Stimulation of the sympathetic nervous system is required.
 - d. The optic nerve must be stimulated.

ANS: C

3. Which of the following is caused by an irregular curvature of the cornea or lens?
- a. Nystagmus
 - b. Astigmatism
 - c. Hyperopia
 - d. Strabismus

ANS: B

4. Trachoma is an eye infection caused by:
- a. influenza virus.
 - b. Candida albicans.
 - c. Staphylococcus bacteria.
 - d. Chlamydia bacteria.

ANS: D

5. Which statement does NOT apply to chronic glaucoma?
- a. Degeneration and obstruction of the trabecular network
 - b. Gradual increase in intraocular pressure
 - c. Abnormally narrow angle between the cornea and iris
 - d. Damage to the retina and optic nerve

ANS: C

6. Which disorder is manifested by loss of peripheral vision?
- a. Retinal detachment
 - b. Chronic (wide-angle) glaucoma
 - c. Cataract
 - d. Macular degeneration

ANS: B

7. Which of the following involves a gradual clouding of the lens of the eye?
- a. Glaucoma
 - b. Cataract
 - c. Macular degeneration
 - d. Keratitis

ANS: B

8. Which of the following is a likely consequence of an untreated detached retina?
- a. Lack of nutrients causing death of retinal cells
 - b. Edema of the cornea causing blurred vision
 - c. Cupping of the optic disc with damage to the optic nerve
 - d. Damage to the fovea centralis

ANS: A

9. Which of the following is a sign of a detached retina?
- a. Painless blurring of vision
 - b. Eye pain, halos around lights, and nausea
 - c. Progressive loss of central vision
 - d. No pain, development of a dark area in the visual field

ANS: D

10. What is the basic pathological change with macular degeneration?

- a. Increased amount of aqueous humor in the eye
- b. Movement of vitreous humor between the retina and the choroid
- c. Degeneration of the retinal cells in the fovea centralis
- d. Damage to the optic nerve and meninges

ANS: C

11. Which is the early effect of age-related macular degeneration?

- a. Loss of central visual acuity
- b. Intermittent pain and blurred vision
- c. Loss of peripheral vision
- d. Loss of night vision and color perception

ANS: A

12. Loss of the left visual field results from damage to the:

- a. left optic nerve.
- b. right optic nerve.
- c. left occipital lobe.
- d. right occipital lobe.

ANS: D

13. The involuntary abnormal movement of one or both eyes is referred to as:

- a. strabismus.
- b. nystagmus.
- c. presbyopia.
- d. diplopia.

ANS: B

14. The area providing the greatest visual acuity is the:

- a. Macula lutea
- b. Fovea centralis
- c. Optic disc
- d. Lens

ANS: B

15. Narrow-angle glaucoma develops when the angle is decreased between the:

- a. retina and ciliary process.
- b. lens and ciliary body.
- c. iris and cornea.
- d. iris and lens.

ANS: C

16. The lens and cornea are nourished by:

- a. small capillaries.
- b. tears.
- c. vitreous humor.
- d. aqueous humor.

ANS: D

17. Which term refers to near-sightedness?

- a. Hyperopia
- b. Presbyopia
- c. Myopia
- d. Diplopia

ANS: C

18. Severe pain develops with narrow-angle glaucoma when the:

- a. pupils are constricted.
- b. pupils are dilated.
- c. lens changes shape.
- d. excess vitreous humor forms.

ANS: B

19. Herpes simplex virus is a common cause of:

- a. conjunctivitis.
- b. corneal ulceration and scarring.
- c. eye infection in the neonate.
- d. total blindness.

ANS: B

Chapter 34: Forensic Pathology

Discuss

- 10.

- 22. A massive crushing force to the chest may lacerate the pericardium.

