

Eisenberg: Comprehensive Radiographic Pathology, 5th Edition

Chapter 1: Introduction to Pathology

Test Bank

MULTIPLE CHOICE

1. A disease process caused by physicians or their treatment is this type of process.
 - a. Idiopathic
 - b. Iatrogenic
 - c. Neoplasia
 - d. Community acquired

ANS: B

The disease process caused by physicians and their treatment is iatrogenic.

REF: p. 3

2. Basic reactions of the body to some form of injury is a:
 - a. Disease process
 - b. Pathology
 - c. Study of diseases
 - d. Idiopathic process

ANS: A

A disease is the pattern of the body's response to some form of injury.

REF: p. 1

3. What term is used to denote a disease in which the underlying cause is unknown?
 - a. Idiopathic
 - b. Antietiologic
 - c. Iatrogenic
 - d. Nosocomial

ANS: A

Idiopathic diseases are those with an unknown, or as of yet unidentified, cause.

REF: p. 3

4. Alterations of cell growth, specifically an abnormal proliferation of cells is called:
 - a. Hyperplasia
 - b. Dysplasia
 - c. Neoplasia
 - d. Aplasia

ANS: C

Alterations in cell growth lead to the development of neoplasms (tumors).

REF: p. 7

5. The initial response of body tissues to local injury is:
- Infection
 - Ischemia
 - Edema
 - Inflammation

ANS: D

Inflammation is the initial response of body tissues to local injury.

REF: p. 3

6. Heat and redness associated with inflammation is produced by:
- Hyperemia
 - Scar tissue
 - Hyperplasia
 - Infarction

ANS: A

This hyperemia produces the heat and redness associated with inflammation.

REF: p. 3

7. In an injury, the destroyed tissue is replaced with:
- Granulomatous inflammation
 - Granulation tissue
 - Phagocytes
 - Pyogens

ANS: B

A fibrous *scar* replaces the area of destroyed tissue with granulation tissue. Granulation tissue refers to a combination of young, developing capillaries and actively proliferating fibroblasts, which produce connective tissue fibers (collagen) that replace the dead tissue.

REF: p. 4

8. Of the five clinical signs of acute inflammation, the medical term for swelling is:
- Edema
 - Tumor
 - Calor
 - Dolor

ANS: B

The five clinical signs of acute inflammation are rubor (redness), calor (heat), tumor (swelling), dolor (pain), and loss of function.

REF: p. 4

9. Some bacterial organisms that produce these substances that cause damage to the tissue and incite the inflammatory process are known as:
- Toxoids
 - Pyogens
 - Toxins
 - Abscesses

ANS: C

Some bacterial organisms (such as staphylococci and streptococci) produce toxins that damage the tissues and incite an inflammatory response.

REF: p. 4

10. Chronic inflammation in a localized area, which often has a centralized necrosis is called:
- An exudates
 - A granuloma
 - An abscess
 - Hyperplasia

ANS: B

A granuloma is a localized area of chronic inflammation, often with central necrosis.

REF: p. 4

11. In acute inflammation, the localized heat and redness are a result of the:
- Migration of circulating white blood cells
 - Increased blood flow and vascular permeability
 - Regeneration of normal parenchymal cells
 - Enzymatic digestion of dead cells

ANS: B

The localized heat and redness result from increased blood flow in the microcirculation at the site of injury.

REF: p. 4

12. In pyogenic infections, the body responds by producing a thick, yellow fluid called:
- Bacteria
 - Pus
 - Edema
 - A scar

ANS: B

The presence of pyogenic bacteria leads to the production of a thick, yellow fluid called pus, which contains dead white blood cells, inflammatory exudates, and bacteria.

REF: p. 4

13. All pyogens have the ability to enter the blood circulation causing:
- Bacteremia
 - Phagocytosis
 - Septicemia
 - Keloid tissue

ANS: A

All pyogens, wherever they become implanted, have the ability to invade blood vessels to produce bacteremia, with the potential involvement of other organs and tissues in the body.

REF: p. 4

14. Connective tissue fibers replacing dead tissue, then contracting in the abdomen are known as:
- Keloids
 - Suppurative inflammation
 - Fibrous adhesions
 - Hyperemia

ANS: C

Eventually the strong connective tissue contracts to produce a fibrous scar. In the abdomen, such fibrous adhesions can narrow loops of intestine and result in an obstruction.

REF: p. 4

15. An accumulation of abnormal amounts of fluid in the intercellular tissue throughout the body is called:
- Bacteremia
 - Elephantiasis
 - Filariasis
 - Anasarca

ANS: D

Generalized edema occurs with pronounced swelling of subcutaneous tissues throughout the body (anasarca).

REF: p. 4

16. Localized _____ is produced in an inflammatory reaction as a result of a fluid accumulation.
- Filariasis
 - Edema
 - Elephantiasis

d. Fibrous adhesions

ANS: B

Edema is the accumulation of abnormal amounts of fluid in the intercellular tissue spaces or body cavities. Localized edema results from an inflammatory reaction.

REF: p. 4

17. An inflammation associated with pus formation is:

- a. Bacteremia
- b. Phagocytosis
- c. Suppurative
- d. Hyperemia

ANS: C

Suppurative inflammation is associated with pus formation.

REF: p. 4

18. The protein-rich fluid associated with swelling in an inflammatory process is:

- a. Exudate
- b. Transudate
- c. Pus
- d. Permeable

ANS: A

This inflammatory exudate in the tissues results in the swelling associated with inflammation. The protein-rich exudate of inflammation must be differentiated from a transudate, a low-protein fluid, such as that seen in the pulmonary edema that develops in congestive heart failure.

REF: p. 3

19. The low-protein fluid associated with the inflammatory process as seen in pulmonary edema is called:

- a. An abscess
- b. Exudate
- c. Transudate
- d. Filariasis

ANS: C

The protein-rich exudate of inflammation must be differentiated from a transudate, a low-protein fluid, such as that seen in the pulmonary edema that develops in congestive heart failure.

REF: p. 3

20. A localized area of ischemic necrosis within a tissue or organ produced by vascular occlusion is a(n):
- Gangrene
 - Infarct
 - Purpura
 - Ecchymosis

ANS: B

An infarct is a localized area of ischemic necrosis within a tissue or organ produced by occlusion of either its arterial supply or its venous drainage.

REF: p. 5

21. Depriving tissues of oxygen and nutrients caused by an arterial vessel narrowing is referred to as:
- Ischemia
 - Petechiae
 - Filariasis
 - Gangrene

ANS: A

Ischemia refers to an interference with the blood supply to an organ or part of an organ, depriving the organ's cells and tissues of oxygen and nutrients.

REF: p. 5

22. The progression of a loss of oxygen and nutrients resulting in tissue necrosis especially in the diabetic's foot is called:
- Infarction
 - Gangrene
 - Ischemia
 - Hemorrhage

ANS: B

Severe arterial disease of the lower extremities may result in necrosis of several toes or a large segment of the foot, a condition called gangrene. A frequent symptom in diabetic patients is ischemia of the foot, which may progress to infarction and result in gangrene.

REF: p. 5

23. A subcutaneous hematoma greater than 1 to 2 cm is called a(n):
- Purpura
 - Ecchymosis
 - Petechia
 - Infarct

ANS: B

A large (greater than 1 to 2 cm) subcutaneous hematoma, or bruise, is called an ecchymosis.

REF: p. 6

24. An accumulation of blood trapped within the body tissues is known as a(an):
- Hematoma
 - Ecchymosis
 - Petechiae
 - Pleural effusion

ANS: A

Blood may be trapped within body tissues resulting in an accumulation called a hematoma.

REF: p. 5

25. Bleeding into mucous membranes or serosal surfaces is referred to as:
- Petechiae
 - Hemorrhage
 - Purpura
 - Ecchymosis

ANS: A

Minimal hemorrhages into the skin, mucous membranes, or serosal surfaces are called petechiae.

REF: p. 5

26. Volume of blood loss, the rate of blood loss, and the site of the blood loss will determine the:
- Patient status
 - Clinical significance
 - Treatment required
 - All of the above

ANS: D

The significance of hemorrhage depends on the volume of blood loss, the rate of loss, and the site of the hemorrhage. Sudden losses of up to 20% of the blood volume or slow losses of even larger amounts may have little clinical significance.

REF: p. 6

27. When a reduction in the size or number of cells in an organ occurs, this results in:
- Aplasia
 - Atrophy
 - Hypoplasia
 - Dysplasia

ANS: B

Atrophy refers to a reduction in the size or number of cells in an organ or tissue.

REF: p. 6

28. When cells fail to develop and as a result the organ is small, the organ is considered:
- Hypoplastic
 - Dysplastic
 - Hyperplastic
 - Anaplastic

ANS: A

Failure of normal development accounts for small size in hypoplasia and aplasia.

REF: p. 6

29. When increased function of an organ is required, the term _____ is used.
- Neoplastic
 - Hypotrophy
 - Hyperplasia
 - Hypertrophy

ANS: D

Hypertrophy refers to an increase in the size of the cells of a tissue or organ in response to a demand for increased function.

REF: p. 6

30. The proliferation of granulation tissue to repair an injury is an example of:
- Hypertrophy
 - Anaplasia
 - Hyperplasia
 - Dysplasia

ANS: C

Hyperplasia is an increase in the number of cells in a tissue or organ. Proliferation of granulation tissue in the repair of injury is an example.

REF: pp. 6-7

31. The Latin word for “new growth” is:
- Tumor
 - Seeding
 - Neoplasia
 - Ecchymosis

ANS: C

Neoplasia, from the Latin word for new growth, refers to an abnormal proliferation of cells that are no longer controlled by the factors that govern the growth of normal cells.

REF: p. 7

32. New growths that invade and destroy adjacent structures and have the ability to spread are considered:
- Neoplastic
 - Benign
 - Cachexia
 - Malignant

ANS: D

Malignant neoplasms invade and destroy adjacent structures and spread to distant sites (metastasize).

REF: p. 7

33. A polyp is a:
- Projecting mass from an inner mucous membrane
 - Malignant epithelial neoplasm
 - Benign cartilaginous tumor
 - Cancer

ANS: A

An epithelial tumor that grows as a projecting mass on the skin or from an inner mucous membrane (such as the gastrointestinal tract) is termed a papilloma or a polyp.

REF: p. 7

34. A malignancy of glandular tissue, such as breast or liver, is referred to as a(n):
- Adenoma
 - Adenocarcinoma
 - Cystadenoma
 - Dysplasia

ANS: B

Adenocarcinoma refers to malignancies of glandular tissues, such as the breast, liver, and pancreas, and of the cells lining the gastrointestinal tract.

REF: p. 7

35. The term derived from the Latin term for “crab” is:
- Benign
 - Oncology
 - Neoplasia
 - Cancer

ANS: D

Malignant neoplasms of epithelial cell origin are called carcinomas, from the Greek word *karbinos*, meaning “crab.”

REF: p. 7

36. The study of neoplasms or tumors is called:
- Pathology
 - Radiology
 - Oncology
 - Etiology

ANS: C

Neoplasms are commonly referred to as tumors; indeed, the study of neoplasms is called oncology, derived from the Greek word *oncos*, meaning “tumor.”

REF: p. 7

37. Tumors closely resembling their cells of origin in structure and function are called::
- Malignant
 - Benign
 - Cancerous
 - Dysplastic

ANS: B

Benign tumors closely resemble their cells of origin in structure and function.

REF: p. 7

38. When tumor cells flourish, causing the patient to become weak and emaciated, this condition is referred to as:
- Cachexia
 - Petechiae
 - Anorexia
 - Anaplastic

ANS: A

Neoplastic cells act as parasites, competing with normal cells and tissues for their metabolic needs. Thus tumor cells may flourish, and the patient becomes weak and emaciated, a condition termed cachexia.

REF: p. 7

39. Benign epithelial neoplasms that grow in a glandlike pattern are:
- Cystadenomas
 - Adenocarcinomas
 - Adenomas
 - Fibromas

ANS: C

The term adenoma is applied to benign epithelial neoplasms that grow in glandlike patterns.

REF: p. 7

40. Tumors that contain muscle cells are called:

- a. Myelomas
- b. Myomas
- c. Papilloma
- d. Hypertrophic

ANS: B

Myomas are tumors consisting of muscle cells.

REF: p. 7

41. Tumor cells of stratified squamous epithelium, which invade and destroy adjacent structures, make up:

- a. Adenomas
- b. Sarcomas
- c. Cystadenomas
- d. Squamous cell carcinomas

ANS: D

Squamous cell carcinoma denotes a cancer in which the tumor cells resemble stratified squamous epithelium.

REF: p. 7

42. If a neoplastic growth proliferates without form, it is considered:

- a. Anaplastic
- b. Dysplastic
- c. Aplastic
- d. Hyperplastic

ANS: A

A tumor growing in a bizarre pattern is termed undifferentiated or anaplastic (without form).

REF: p. 7

43. Symptoms suggestive of esophageal or stomach cancer are:

- a. Anasarca and dysphagia
- b. Anaplasia and anorexia
- c. Aplasia and gangrene
- d. Anorexia and dysphagia

ANS: D

Difficulty in swallowing (dysphagia) or loss of appetite (anorexia), especially if accompanied by rapid weight loss, suggests a neoplasm in the esophagus or stomach.

REF: p. 8

44. Diffuse spread of malignant neoplasms by invasion into a natural body cavity is called:
- Tumor grading
 - Staging
 - Seeding
 - Lymphatic spread

ANS: C

Seeding (diffuse spread) of cancers occurs when neoplasms invade a natural body cavity.

REF: p. 8

45. The major metastatic route of carcinomas is:
- Lymphatic spread
 - Undifferentiated spread
 - Hematopoietic spread
 - Hematogenous spread

ANS: A

Lymphatic spread is the major metastatic route of carcinomas, especially those of the lung and breast.

REF: p. 8

46. Assessing the aggressiveness or degree of malignancy is referred to as:
- Staging
 - Grading
 - Seeding
 - Metastatic

ANS: B

The grading of a malignant tumor assesses aggressiveness, or degree of malignancy.

REF: p. 9

47. To determine the most appropriate therapy, the disease process must be:
- Seeded
 - Staged
 - Graded
 - Phased

ANS: B

Staging refers to the extensiveness of a tumor at its primary site and the presence or absence of metastases to lymph nodes and distant organs, such as the liver, lungs, and skeleton. The staging of a tumor aids in determining the most appropriate therapy.

REF: p. 9

48. Using a combination of cytotoxic substances to kill neoplastic cells is called:
- Radiation therapy
 - Chemotherapy
 - Hormonal therapy
 - Seeding

ANS: B

Chemotherapy uses one or a combination of cytotoxic substances that kill neoplastic cells, but these drugs may injure many normal cells and result in significant complications.

REF: p. 9

49. The most common hereditary abnormality is:
- Chromosomal aberration
 - Enzyme deficiency
 - Glycogen and lipid storage disease
 - Sex-linked disorders

ANS: B

The most common hereditary abnormality is an enzyme deficiency.

REF: p. 9

50. Exposure to radiation, chemicals, or viruses may result in alterations in the DNA called:
- Mutations
 - Reduced penetrance
 - Variable expressivity
 - Aberrations

ANS: A

Mutations are alterations in the DNA structure that may become permanent hereditary changes if they affect the gonadal cells. Mutations may result from radiation, chemicals, or viruses.

REF: p. 10

51. A gene always producing an effect regardless of whether the person is homozygous or heterozygous is named a(an) _____ gene.
- Recessive
 - Dominant
 - Autosomal recessive
 - Autosomal dominant

ANS: B

Dominant genes always produce an effect regardless of whether the person is homozygous or heterozygous.

REF: p. 10

52. When a vaccine or toxoid is used to counteract an antigen, it is considered:
- Passive immunity
 - Active immunity
 - Community-acquired immunity
 - Iatrogenic

ANS: B

In active immunity, a person forms antibodies to counteract an antigen in the form of a vaccine or a toxoid.

REF: p. 11

53. The body has the ability to combat antigens by forming _____ in the lymphoid tissue.
- Antibodies
 - Toxins
 - Immunoglobulins
 - A and C

ANS: D

The immune reaction of the body provides a powerful defense against invading organisms by allowing it to recognize foreign substances (antigens), such as bacteria, viruses, fungi, and toxins, and to produce antibodies or immunoglobulins to counteract them.

REF: p. 11

54. Hypotension and vascular collapse with urticaria, bronchiolar spasm, and laryngeal edema are characteristics of:
- Anaphylactic reactions
 - Cytotoxic reactions
 - Histamine release
 - Delayed reactions

ANS: A

Generalized, or systemic, anaphylactic reactions are characterized by hypotension and vascular collapse (shock) with urticaria (hives), bronchiolar spasm, and laryngeal edema.

REF: p. 11

55. Profound and sustained impairment of cellular immunity resulting in recurrent or sequential opportunistic infections is characteristic of:

- a. Anaphylactic reactions
- b. Histamine release
- c. AIDS
- d. Cytotoxic reactions

ANS: C

Acquired immunodeficiency syndrome (AIDS), which most commonly affects young homosexual men and intravenous drug abusers, is characterized by a profound and sustained impairment of cellular immunity that results in recurrent or sequential opportunistic infections.

REF: p. 12

56. The retrovirus known to contribute to AIDS is:
- a. Hepatitis
 - b. Human immunodeficiency virus
 - c. Immunoglobulins
 - d. Kaposi sarcoma

ANS: B

AIDS is attributable to infection with retroviruses known as human immunodeficiency viruses (HIV).

REF: p. 12

57. A hazy, perihilar, granular infiltrate spreading to the lung periphery is the early radiographic finding of:
- a. AIDS
 - b. Kaposi syndrome
 - c. Hepatitis
 - d. *Pneumocystis carinii* pneumonia

ANS: D

The typical early radiographic finding of *P. carinii* pneumonia is a hazy, perihilar, granular infiltrate that spreads to the periphery and appears preponderantly interstitial.

REF: p. 12

58. The modality of choice to demonstrate the multiple manifestations of AIDS in the central nervous system is:
- a. CT
 - b. Nuclear medicine
 - c. Ultrasound
 - d. MRI

ANS: D

MRI best demonstrates the multiple manifestations of AIDS in the central nervous system.

REF: p. 12

59. All of the following are protective personnel equipment (PPE), **except:**
- Gown
 - Gloves
 - Mask
 - Sharps container

ANS: D

A sharps container is not used for personnel protection against the transmission of diseases.

REF: p. 13

60. All of the following are additive diseases in terms of x-ray attenuation, **except:**
- Pneumonia
 - Osteolytic metastasis
 - Callus
 - Ascites

ANS: B

Osteolytic metastasis is a destructive disease.

REF: p. 2

MATCHING

Match each of the following terms with the correct answer. Each question has only one correct answer.

- Rubor
- Calor
- Dolor
- Tumor

- Heat
- Pain
- Redness
- Swelling

1. ANS: B REF: p. 4

NOT: Rationale: The five clinical signs of acute inflammation are rubor (redness), calor (heat), tumor (swelling), dolor (pain), and loss of function.

2. ANS: C REF: p. 4

NOT: Rationale: The five clinical signs of acute inflammation are rubor (redness), calor (heat), tumor (swelling), dolor (pain), and loss of function.

3. ANS: A REF: p. 4

NOT: Rationale: The five clinical signs of acute inflammation are rubor (redness), calor (heat), tumor (swelling), dolor (pain), and loss of function.

4. ANS: D REF: p. 4

NOT: Rationale: The five clinical signs of acute inflammation are rubor (redness), calor (heat), tumor (swelling), dolor (pain), and loss of function.

Match the following terms related to edema.

- a. A parasitic worm causing a lymphatic obstruction
 - b. Accumulation of fluid in a serous cavity
 - c. Extravascular fluid collection surrounding the heart
 - d. Localized edema resulting from a lymphatic obstruction
 - e. Pronounced swelling in subcutaneous tissue throughout the body
5. Anasarca
6. Elephantiasis
7. Filariasis
8. Pericardial effusion
9. Peritoneal ascites

5. ANS: E REF: p. 4

NOT: Rationale: Generalized edema occurs with pronounced swelling of subcutaneous tissues throughout the body (anasarca). In filariasis, a parasitic worm causes lymphatic obstruction, and the resulting localized edema is termed elephantiasis. Extravascular fluid can also accumulate in serous cavities to produce pleural and pericardial effusions and peritoneal ascites.

6. ANS: D REF: p. 4

NOT: Rationale: Generalized edema occurs with pronounced swelling of subcutaneous tissues throughout the body (anasarca). In filariasis, a parasitic worm causes lymphatic obstruction, and the resulting localized edema is termed elephantiasis. Extravascular fluid can also accumulate in serous cavities to produce pleural and pericardial effusions and peritoneal ascites.

7. ANS: A REF: p. 4

NOT: Rationale: Generalized edema occurs with pronounced swelling of subcutaneous tissues throughout the body (anasarca). In filariasis, a parasitic worm causes lymphatic obstruction, and the resulting localized edema is termed elephantiasis. Extravascular fluid can also accumulate in serous cavities to produce pleural and pericardial effusions and peritoneal ascites.

8. ANS: C REF: p. 4

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obstruction, and the resulting localized edema is termed elephantiasis. Extravascular fluid can also accumulate in serous cavities to produce pleural and pericardial effusions and peritoneal ascites.

Match the following terms related to hemorrhage.

- a. An accumulation of blood in the tissue
 - b. Large (greater than 1 to 2 cm) subcutaneous bruise
 - c. Larger areas of bleeding into the skin
 - d. Minimal bleeding in the skin or mucous membrane
 - e. Rupture of a blood vessel
10. Ecchymosis
 11. Hematoma
 12. Hemorrhage
 13. Petechiae
 14. Purpura

10. ANS: B REF: p. 6

NOT: Rationale: The term hemorrhage implies rupture of a blood vessel. Blood may be trapped within body tissues, resulting in an accumulation termed a hematoma. Minimal hemorrhages into the skin, mucous membranes, or serosal surfaces are called petechiae; slightly larger hemorrhages are termed purpura.

11. ANS: A REF: p. 5

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Match the following terms related to alterations in cell growth.

- a. Failure of normal development causing smaller cells
- b. Increased size of the cells

- c. Loss of uniformity of individual cells
- d. Number of cells in the tissue increases
- e. Reduction in number or size of cells

- 15. Atrophy
- 16. Dysplasia
- 17. Hyperplasia
- 18. Hypertrophy
- 19. Hypoplasia

15. ANS: E REF: p. 6

NOT: Rationale: Atrophy refers to a reduction in the size or number of cells in an organ or tissue, hypoplasia and aplasia, in which failure of normal development accounts for small size. Hypertrophy refers to an increase in the size of the cells of a tissue or organ in response to a demand for increased function. Hyperplasia is an increase in the number of cells in a tissue or organ, whereas dysplasia is a loss in the uniformity of individual cells.

16. ANS: C REF: p. 7

NOT: Rationale: Atrophy refers to a reduction in the size or number of cells in an organ or tissue, hypoplasia and aplasia, in which failure of normal development accounts for small size. Hypertrophy refers to an increase in the size of the cells of a tissue or organ in response to a demand for increased function. Hyperplasia is an increase in the number of cells in a tissue or organ, whereas dysplasia is a loss in the uniformity of individual cells.

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Match the following terms related to the neoplastic process.

- a. A malignant tumor arising from connective tissue
- b. Benign tumor consisting of fibrous tissue
- c. Cartilaginous tumor that is benign
- d. Composed of blood vessels

- e. Forming benign large cystic masses
 - f. Glandular cell malignancy
 - g. Malignancy of epithelial cell origin
 - h. Soft, fatty tissue tumor
 - i. Tumor that grows in a glandlike pattern
20. Adenocarcinoma
21. Adenoma
22. Angioma
23. Carcinoma
24. Chondroma
25. Cystadenoma
26. Fibroma
27. Lipoma
28. Sarcoma
20. ANS: F REF: p. 7
NOT: Rationale: Benign tumors of fibrous tissue are termed fibromas; benign cartilaginous tumors are chondromas. The term adenoma is applied to benign epithelial neoplasms that grow in glandlike patterns. Benign tumors that form large cystic masses are called cystadenomas. Lipomas consist of soft, fatty tissue, and angiomas are tumors composed of blood vessels. Malignant neoplasms of epithelial cell origin are called carcinomas, from the Greek word *karbinos*, meaning crab. Adenocarcinoma refers to malignancies of glandular tissues, such as the breast, liver, and pancreas, and of the cells lining the gastrointestinal tract. Sarcomas are highly malignant tumors arising from connective tissues, such as bone, muscle, and cartilage.
21. ANS: I REF: p. 7
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Match the following terms related to immunity.

- a. Binds with foreign substance to make harmless
 - b. Body makes harmless
 - c. Chemically altered poisonous material
 - d. Form in lymphoid tissue
 - e. Low dose of dead or deactivated bacteria or virus
 - f. Recognition of foreign substance
29. Antibody
30. Antigen
31. Immune
32. Immunoglobulin
33. Toxoid
34. Vaccine

29. ANS: A REF: p. 11

NOT: Rationale: The immune reaction of the body provides a powerful defense against invading organisms by allowing it to recognize foreign substances (antigens), such as bacteria, viruses, fungi, and toxins, and to produce antibodies to counteract them. The antibody binds together with the antigen to make the antigen harmless. Once antibodies have been produced, a person becomes immune to the antigen. Antibodies, or immunoglobulins, form in lymphoid tissue. A vaccine consists of a low dose of dead or deactivated bacteria or viruses. A toxoid is a chemically altered toxin, the poisonous material produced by a pathogenic organism.

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