

Lymphatics questions/answers

Exam 1	Exam 2
<p>1. The thoracic duct drains:</p> <ul style="list-style-type: none">A. all the lymphatic structures in the lower trunk.B. all the lymphatic structures in the neck and head.C. Both A and BD. Neither A nor B <p>2. Which of the following is a lymphatic "nodule"?</p> <ul style="list-style-type: none">A. The inferior portion of the external earsB. The tonsilsC. The "Adam's apple"D. All of the above <p>3. Which is/are not a function of the spleen?</p> <ul style="list-style-type: none">A. Destruction and production (in utero) of RBC'sB. phagocytosis of some red blood cellsC. Edema formationD. Reservoir for RBC'sE. All of the above <p>4. Which tonsils are located in the posterior nasal cavity?</p> <ul style="list-style-type: none">A. Lingual	<p>1. "Sensitized" lymphocytes are those which:</p> <ul style="list-style-type: none">A. have been cloned to form memory cells.B. have been exposed to a recent foreign antigen or foreign body.C. have become tolerant to the body's own proteins.D. have converted from pre-processed stem cells to mesenchymal cells.E. None of the above <p>2. The secondary or anamnestic response in immunity:</p> <ul style="list-style-type: none">A. occurs after the primary response has activated specific B-cells.B. is due to proliferation of plasma cells from stimulated T-cells.C. is more effective than the primary response because more antibodies are produced in a shorter period of time.D. results in the production of different classes of antibodies than the primary response.E. are similar in function to plasma cells. <p>3. The AIDS virus infects:</p> <ul style="list-style-type: none">A. B-cells.B. T-effector cells.C. T-suppressor cells.D. T-helper cells.

<p>B. Pharyngeal</p> <p>C. Palatine</p> <p>D. All of the above</p> <p>5. Red streaks extending up the arm from an infection in the hand are most likely caused by:</p> <p>A. inflamed lymphatic vessels.</p> <p>B. inflamed veins.</p> <p>C. microorganisms that release a red pigment.</p> <p>D. bilirubin derived from the breakdown of red blood cells.</p> <p>E. the sunset, as in "red streaks in the sunset".</p> <p>6. Which of the following is/are an example of an extremely specific defense mechanism?</p> <p>A. Phagocytosis</p> <p>B. Inflammation</p> <p>C. Antibody formation</p> <p>D. All of the preceding</p> <p>E. None of the preceding</p> <p>7. In <u>?</u> immunity, an individual makes his own antibodies, while in <u>?</u> immunity, the antibodies are presented to him in antisera.</p> <p>A. active; passive</p> <p>B. natural; acquired</p> <p>C. passive; active</p> <p>D. acquired; natural</p> <p>8. Vaccination introduces attenuated <u>?</u> which provide</p>	<p>E. NK-cells.</p> <p>4. The spleen:</p> <p>A. detects and responds to foreign substances in the blood.</p> <p>B. destroys worn out red blood cells.</p> <p>C. is a reservoir for red blood cells.</p> <p>D. can act as a reservoir for platelets.</p> <p>E. All of the above</p> <p>5. Antibodies can bind to:</p> <p>A. antigens, and interfere with their activity.</p> <p>B. antigens, and make them more likely to be phagocytized.</p> <p>C. antigens, and initiate an inflammatory response.</p> <p>D. cell surface antigens and cause the cells to agglutinate.</p> <p>E. All of the above</p> <p>6. Nonspecific body defenses include:</p> <p>1. Phagocytosis</p> <p>2. T Cells</p> <p>3. Plasma cells</p> <p>-----</p> <p>A. 1 only</p> <p>B. 2 only</p> <p>C. 3 only</p> <p>D. 1 and 3</p>
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<p>a(n) ? type response.</p> <p>A. antibodies; passive</p> <p>B. antibodies; therapeutic</p> <p>C. antigens; acquired</p> <p>D. antigens; prophylactic</p> <p>E. antigens; therapeutic</p> <p>9. The idea that "lymphocytic cloning ability is destroyed before birth" is the premise for explaining the condition known as:</p> <p>A. immunity.</p> <p>B. tolerance.</p> <p>C. autoimmune disease.</p> <p>D. antigenicity.</p> <p>E. sensitivity.</p> <p>10. T-Lymphocytes become ? when exposed to tissue transplants from non-related persons.</p> <p>A. B-lymphocytes</p> <p>B. hemocytoblast</p> <p>C. platelet-producers</p> <p>D. sensitized lymphocytes</p> <p>E. plasma cells</p> <p>11. The thymus plays an important role in the development of (the)</p> <p>A. endocrine system.</p> <p>B. cellular immunity.</p>	<p>E. 2 and 3</p> <p>7. Helper T cells:</p> <p>A. bind tightly to target cells and release a lymphotoxin called perforin.</p> <p>B. are essential in both humoral and cell mediated immune function activation.</p> <p>C. do not release interleukin 2.</p> <p>D. often function to decrease the immune response.</p> <p>E. None of the above</p> <p>8. Immunity:</p> <p>A. is not possible without a thyroid gland.</p> <p>B. is always achieved by getting a disease.</p> <p>C. confers "resistance" to specific diseases by antibody production.</p> <p>D. may be acquired by eating antigens.</p> <p>E. may be acquired only by injection with the proper antibodies.</p> <p>9. When B-cells are activated, they:</p> <p>A. multiply and produce plasma cells which release antibodies into the circulation.</p> <p>B. rush to the site of invasion and shower a pathogen with antibodies.</p> <p>C. form several types of helper cells which produce complement.</p> <p>D. develop into macro phages which phagocytize the invaders.</p> <p>10 Which of the following is/are a function of the</p>
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<p>C. circulatory system.</p> <p>D. integumentary system.</p> <p>E. lymphatic system.</p> <p>12. The most important function of T-cells is/are:</p> <p>A. phagocytosis of foreign antigens.</p> <p>B. potentiation of the antibody function of B-lymphocytes.</p> <p>C. Both A and B</p> <p>D. Neither A nor B</p> <p>13. The lymphatic system differs from the circulatory system:</p> <p>A. by only carrying fluid away from tissues.</p> <p>B. in that the epithelial cells of lymph capillaries do not overlap.</p> <p>C. in that lymph capillaries are far more permeable than blood capillaries.</p> <p>D. in that the lymph capillaries allow free movement of fluid in and out of the capillaries.</p> <p>E. A and C only</p> <p>14. A "B Cell" responds to the initial antigen challenge immediately by all of these except:</p> <p>A. enlargement and rapid mitosis.</p> <p>B. formation of a large number of cells just like the original.</p> <p>C. immediate production of antigen-specific antibodies.</p> <p>D. production of progeny cells that include plasma cells and memory cells.</p>	<p>lymphatic System:</p> <p>A. Serves as an interstitial fluid drainage system.</p> <p>B. Removes bacteria from tissue fluid.</p> <p>C. Produces viruses and bacteria for use in the large Intestine and appendix.</p> <p>D. All of the above</p> <p>E. A and B only</p> <p>11. A "clone" of identical lymphocytes is produced in the -?-- In response to invasion of--?--.</p> <p>A. Thymus; antibodies</p> <p>B. Lungs, foreign antigens</p> <p>C. Lymph nodes; phagocytized foreign matter</p> <p>D. Cerebrum; toxic nerve impulses</p> <p>E. None of the above</p> <p>12. The lymphatic and venous systems are similar in that</p> <p>A. They both contain red blood cells.</p> <p>B. The walls of the vessels are impermeable to proteins.</p> <p>C. Both A and B</p> <p>D. Neither A nor B</p> <p>13. Active immunity is acquired by either infection with the live organism or by:</p> <p>A. Being given the antibody from a person or animal that been infected.</p> <p>B. Exposure to histocompatible (or similar) antigens.</p> <p>C. Vaccination.</p> <p>D. Blood transfusions.</p>
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<p>15. Select the correct statement about immune function:</p> <p>A. when a B-lymphocyte expresses a single unique receptor for an antigen on its cell surface, it is said to be immunocompetent.</p> <p>B. some lymphocytes will never encounter an antigen, to which they are capable of responding.</p> <p>C. an antigen only determines which existing lymphocytes will be stimulated to proliferate.</p> <p>D. once immunocompetence is established, the cell is committed to react with that one antigen.</p> <p>E. All of the above</p> <p>16. --?-- in the intercellular space are more likely to enter lymph capillaries than blood capillaries.</p> <p>A. Bacteria</p> <p>B. Walter molecules</p> <p>C. Sugar molecules</p> <p>D. Salt molecules</p> <p>E. All of the above</p> <p>17. The composition of lymph is similar to that of</p> <p>A. whole blood.</p> <p>B. interstitial fluid.</p> <p>C. sugar.</p> <p>D. chyme (fluid in stomach)</p> <p>E. semen.</p> <p>18. The spleen:</p> <p>A. is situated in the upper right portion of the abdominal cavity.</p>	<p>E. All of the above</p> <p>14. The factors that are believed to be responsible for the flow of lymph include:</p> <p>A. Contraction of skeletal muscles during activity.</p> <p>B. Contraction of the smooth muscle in the wall of the lymph vessels.</p> <p>C. Pressure changes in the thorax during breathing.</p> <p>D. Blood pressure in the large arteries.</p> <p>E. All except D.</p> <p>15. "Interferon" is:</p> <p>A. A toxic substance released by environmental poisons.</p> <p>B. Something which interferes with the development of immunity.</p> <p>C. A tissue extract which prevents viral RNA from changing normal cellular DNA activity.</p> <p>D. A substance which releases histamine during inflammation.</p> <p>E. A type of "passive immunity".</p> <p>16. The thoracic duct carries tissue fluid from the --?-- to the --?-- .</p> <p>A. Arterioles; capillary beds</p> <p>B. Capillaries, venules</p> <p>C. Cisterna chyli; subclavian vein</p> <p>D. Heart; coronary circulation</p> <p>E. Lymphatic capillaries; giant lacteal of the intestines.</p>
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B. is the largest lymphoid organ in the body.

C. Both A and B

D. Neither A nor B

19. The lymphatic system returns fluid from tissue spaces to the

A. circulatory system.

B. spinal fluid.

C. Both A and B

D. Neither A nor B

20. Lymph in the thoracic duct should have a much higher lymphocyte count than lymph in peripheral lymph vessels because the lymphocytes:

A. have just circulated through the tissues and are carrying waste material.

B. have multiplied by mitotic division in the lymph stream.

C. have increased in numbers because this lymph has just passed through numerous lymph nodes.

D. have not as yet been filtered out by passage through the lymph nodes.

E. have not as yet been filtered out by passing through two or the primary filters, the liver and the spleen.

21. The functions of the spleen include

A. destruction of foreign organisms reaching it thru the blood.

B. destruction of worn out lymphocytes

C. serves as a lymph reservoir.

D. formation of red blood cells after birth.

17. The term "antigenic" means :

A. Able to form specific antibodies

B. Comes from a protein precursor

C. Both a and b

D. Neither a nor b

18. The likelihood of ___?___ increases with age and wear and tear on body tissues.

A. Immune tolerance

B. Autoimmunity

C. Agglutination

D. Natural immunity

19. Plasma cells are derived from:

A. Mast cells.

B. lymphocytes.

C. Bone marrow.

D. Monocytes.

20. Because the thymus gland is important in the pre-processing of T-lymphocytes before birth, it is considered to be a:

A. Vestigial organ

B. Pre-processing organ

C. Circulatory organ

D. All of the above

E. None of the above

<p>E. All of the above</p> <p>22. Factor(s) controlling flow of lymph include:</p> <p>A. Gravity in areas below the heart</p> <p>B. muscular movements and valve action in veins</p> <p>C. Inspiration and expiration</p> <p>D. All of the above</p> <p>23. Which of the following is not a factor in the movement of lymph?</p> <p>A. Arterial pulsations</p> <p>B. Squeezing action of skeletal muscles upon veins</p> <p>C. Breathing</p> <p>D. Contraction of smooth muscle in the visceral organs</p> <p>E. Negative pressure in thoracic cavity</p> <p>24. T-lymphocytes become ? when exposed to tissue transplants from non-relatives.</p> <p>A. B-lymphocytes</p> <p>B. Hemocytoblasts</p> <p>C. Platelet-producers</p> <p>D. Killer lymphocytes</p> <p>E. Plasma cells</p> <p>25. Functions of the "immune (or lymphatic) system" include:</p> <p>A. involvement in the elimination of foreign bodies.</p> <p>B. prevents successful transplantation of organs from</p>	<p>21. The primary function of the lymphatic system is</p> <p>A. circulation of nutrients</p> <p>B. the transport of hormones</p> <p>C. the production maintenance, and distribution of lymphocytes</p> <p>D. the production, maintenance, and distribution of plasma proteins</p> <p>E. both C and D</p> <p>22. Anatomically, lymph vessels resemble</p> <p>A. elastic arteries</p> <p>B. muscular arteries</p> <p>C. arterioles</p> <p>D. medium veins</p> <p>E. the vena cavae</p> <p>23. Lymph nodes do all of the following, <u>except</u></p> <p>A. produce antibodies</p> <p>B. monitor the contents of lymph</p> <p>C. remove debris and pathogens from the lymph</p> <p>D. act as a "way station" for cancer cells</p> <p>E. remove excess nutrients from the lymph</p> <p>24. Lymphocytes are located in each of the following tissues or organs <u>except</u> the</p> <p>A. tonsils</p> <p>B. spleen</p>
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<p>non-related persons.</p> <p>C. Both A and B</p> <p>D. Neither A nor B</p> <p>26. "The ability to resist toxins or organisms that would damage another tissue" is called:</p> <p>A. tolerance.</p> <p>B. immunity.</p> <p>C. antigenicity.</p> <p>D. phagocytosis.</p> <p>E. Inflammation</p> <p>27. In passive immunity:</p> <p>A. antibodies made by another person are injected into the patient as a form of treatment.</p> <p>B. the patient produces lymphocytes and antibodies in response to an infection.</p> <p>C. immunity lasts for many years because memory cells are produced.</p> <p>D. All of the above</p> <p>E. A and B only</p> <p>28. The type of resistance that develops as a result of developing a disease is:</p> <p>A. natural-acquired active immunity.</p> <p>B. artificial-acquired active immunity.</p> <p>C. artificial-acquired passive immunity.</p> <p>D. natural-acquired passive immunity.</p> <p>29. Two means of acquiring active immunity are</p>	<p>C. lymph nodes</p> <p>D. brain</p> <p>E. thymus gland</p> <p>25. The body's nonspecific defenses include all of the following, <u>except</u></p> <p>A. the skin</p> <p>B. complement</p> <p>C. interferon</p> <p>D. inflammation</p> <p>E. antibodies</p> <p>26. Each of the following is a physical barrier to infection except</p> <p>A. body hair</p> <p>B. epithelium</p> <p>C. mucous secretions</p> <p>D. complement</p> <p>E. basement membranes</p> <p>27. The second line of defense against pathogens are the</p> <p>A. T cells</p> <p>B. B cells</p> <p>C. NK cells</p> <p>D. phagocytes</p> <p>E. plasma cells</p>
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<p>vaccination and:</p> <ul style="list-style-type: none"> A. agglutination. B. infection. C. pregnancy. D. All of the preceding. <p>30. If a mother should introduce gamma globulin against measles to her fetus, then the fetus would have a type of -- produced by -- means.</p> <ul style="list-style-type: none"> A. active immunity; acquired B. passive immunity; acquired C. passive immunity; natural D. active immunity; natural <p>31. The following processes, A to E occur in getting humoral immunity. Which is first out of order?</p> <ul style="list-style-type: none"> A. Production of stem cells in bone marrow B. Potentiation at thymus and other areas, such as the liver C. Cloning in response to microbial introduction D. Antigenicity by plasma cells. E. Antibody production to specific antigens <p>32. The idea that one's own antigens provide too much exposure to the thymus in the pre-processing time and thus destroy the ability to later provide lymphocyte cloning,</p> <p>is called:</p> <ul style="list-style-type: none"> A. phagocytosis. B. coagulation. 	<p>28. Immunity that results from the natural exposure to an antigen in the environment is called ? immunity.</p> <ul style="list-style-type: none"> A. active B. natural passive C. acquired D. auto E. innate <p>29. In active immunization, the</p> <ul style="list-style-type: none"> A. immune system attacks normal body cells B. body is deliberately exposed to an antigen C. body receives antibodies produced by another person D. body receives antibodies produced by another animal E. genes fro antibodies are introduced into the body <p>30. The cells responsible for humoral immunity are the ? cells.</p> <ul style="list-style-type: none"> A. NK B. B C. helper T D. cytotoxic T E. suppressor T <p>31. Suppressor T cells act to</p> <ul style="list-style-type: none"> A. suppress antigens B. limit the degree of memory in memory T cells
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<p>C. autoimmunity.</p> <p>D. tolerance.</p> <p>33. Antibodies combine with molecules which are called:</p> <p>A. nucleic acids.</p> <p>B. foreign bodies.</p> <p>C. antigens.</p> <p>D. antagonists.</p> <p>E. agonists.</p> <p>34. Cells responsible for immunity:</p> <p>A. know or recognize their own body's molecules.</p> <p>B. recognize the macro molecules from other organisms as foreign.</p> <p>C. launch immune attacks when stimulated by foreign macro molecules.</p> <p>D. All of the above</p> <p>E. A and B only</p> <p>35. Which of the following is thought to be a possible cause of autoimmune disease?</p> <p>A. An imbalance between too much B-cell activity and not enough suppressor T-cell activity.</p> <p>B. Altering of cells or tissues so that surface antigens cause the production of killer T cells or antibodies to them.</p> <p>C. Long-term deprivation of sleep, causing prolonged loss in rem-sleep, and thus a drastic drop in serotonin levels.</p> <p>D. All of the above</p>	<p>C. limit antigen proliferation</p> <p>D. lower the responses of other T cells and B cells</p> <p>E. produce antibodies invited in autoimmunity</p> <p>32. Leslie has a bad sore throat and the lymph glands in her neck are swollen. This would indicate that</p> <p>A. the focus of the infection is the lymph glands</p> <p>B. lymph is not flowing through these lymph glands</p> <p>C. the affected lymph glands contain an increased number of lymphocytes</p> <p>D. the lymph gland is actively producing phagocytes</p> <p>E. the lymph gland has increased its secretion of thymosin</p> <p>33. In order for a lymphocyte to respond to an antigen, the antigen must</p> <p>A. be phagocytized by the lymphocyte</p> <p>B. enter the cytoplasm of the lymphocyte</p> <p>C. bind to the DNA of the lymphocyte</p> <p>D. bind to specific receptors on the lymphocyte membrane</p> <p>E. depolarize the lymphocyte</p> <p>34. B cells are primarily activated by the action of</p> <p>A. antigens</p> <p>B. antibodies</p> <p>C. helper T cells</p> <p>D. macrophages</p> <p>E. plasma cells</p>
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36. The production of antibodies in response to invasion of foreign antigens is facilitated by the action of --?-- lymphocytes in lymph nodes.

- A. A
- B. B
- C. C
- D. D
- E. T

37. Which of the following is the better definition of immunity?

A. Immunity refers to the resistance of the body to microbes: viruses, bacteria, and other unicellular and multicellular organisms.

B. Immunity constitutes all the physiological mechanisms which allow the body to recognize materials as foreign to itself and to neutralize or eliminate them.

38. The (gland) organ which determines the ability to provide cellular immunity, very early in life, is the:

- A. thyroid.
- B. pituitary.
- C. thymus.
- D. testes.
- E. brain

39. ? from the thymus is believed to give rise to sensitized lymphocytes and eventual cellular immunity.

- A. Pre-processing
- B. Enzymes
- C. Antibodies

35. The following are steps in the cell-mediated immune response.

1. several cycles of mitosis occur
2. antigen is engulfed and presented by a macrophage
3. cytotoxic T cells migrate to focus of infection
4. undifferentiated T cells with specific receptors recognize the antigen
5. T cells differentiate into cytotoxic T cells and T memory cells
6. cytotoxic T cells release perforin and/or lymphotoxin.

The correct sequence for these steps is

- A. 4, 1, 5, 3, 6, 2
- B. 2, 4, 1, 5, 3, 6
- C. 1, 2, 4, 5, 3, 6
- D. 3, 2, 4, 1, 5, 6
- E. 3, 6, 4, 5, 1, 2

36. All of the following are true of the secondary or anamnestic response of humoral immunity, except that it

- A. involves memory B cells
- B. results in elevated titres of antibodies sooner than in the primary response
- C. generally prevents a person from showing symptoms of the disease
- D. can occur even if the second exposure occurs years after the initial exposure
- E. promotes an increased susceptibility to immune system failure

D. Cells

E. Foreign antigens

40. When antigens (foreign substances) enter the respiratory tract,

A. atherosclerosis results.

B. the probability for success of a heart transplant increases.

C. B-lymphocytes multiply and form antibody-producing plasma cells.

D. the clotting reactions are initiated.

E. alveolar macrophages attempt to destroy them before delivering their by-products to lymph nodes.

LYMPHATICS-1 ANSWERS

1. The thoracic duct drains:

A. all the lymphatic structures in the lower trunk.

B. all the lymphatic structures in the neck and head.

C. Both A and B

D. Neither A nor B

2. Which of the following is a lymphatic "nodule"?

A. The inferior portion of the external ears

B. The tonsils

C. The "Adam's apple"

D. All of the above

LYMPHATICS-2 ANSWERS

1. "Sensitized" lymphocytes are those which:

A. have been cloned to form memory cells.

B. have been exposed to a recent foreign antigen or foreign body.

C. have become tolerant to the body's own proteins.

D. have converted from pre-processed stem cells to mesenchymal cells.

E. None of the above

2. The secondary or anamnestic response in immunity:

A. occurs after the primary response has activated specific B-cells.

B. is due to proliferation of plasma cells from stimulated T-cells.

C. is more effective than the primary response because more antibodies are produced in a shorter period of time.

D. results in the production of different classes of antibodies than the primary response.

E. are similar in function to plasma cells.

3. The AIDS virus infects:

A. B-cells.

B. T-effector cells.

C. T-suppressor cells.

D. T-helper cells.

E. NK-cells.

3. Which is/are not a function of the spleen?

- A. Destruction and production (in utero) of RBC's
- B. phagocytosis of some red blood cells
- C. Edema formation
- D. Reservoir for RBC's
- E. All of the above**

4. Which tonsils are located in the posterior nasal cavity?

- A. Lingual
- B. Pharyngeal**
- C. Palatine
- D. All of the above

5. Red streaks extending up the arm from an infection in the hand are most likely caused by:

- A. inflamed lymphatic vessels.**
- B. inflamed veins.
- C. microorganisms that release a red pigment.
- D. bilirubin derived from the breakdown of red blood cells.
- E. the sunset, as in "red streaks in the sunset".

6. Which of the following is/are an example of an extremely specific defense mechanism?

- A. Phagocytosis
- B. Inflammation
- C. Antibody formation**

4. The spleen:

- A. detects and responds to foreign substances in the blood.
- B. destroys worn out red blood cells.
- C. is a reservoir for red blood cells.
- D. can act as a reservoir for platelets.

E. All of the above

5. Antibodies can bind to:

- A. antigens, and interfere with their activity.
- B. antigens, and make them more likely to be phagocytized.
- C. antigens, and initiate an inflammatory response.
- D. cell surface antigens and cause the cells to agglutinate.

E. All of the above

6. Nonspecific body defenses include:

- 1. Phagocytosis
- 2. T Cells
- 3. Plasma cells

A. 1 only

B. 2 only

C. 3 only

D. 1 and 3

E. 2 and 3

<p>D. All of the preceding</p> <p>E. None of the preceding</p> <p>7. In ? immunity, an individual makes his own antibodies, while in ? immunity, the antibodies are presented to him in antisera.</p> <p>A. active; passive</p> <p>B. natural; acquired</p> <p>C. passive; active</p> <p>D. acquired; natural</p> <p>8. Vaccination introduces attenuated ?_which provide a(n) ?_type response.</p> <p>A. antibodies; passive</p> <p>B. antibodies; therapeutic</p> <p>C. antigens; acquired</p> <p>D. antigens; prophylactic</p> <p>E. antigens; therapeutic</p> <p>9. The idea that "lymphocytic cloning ability is destroyed before birth" is the premise for explaining the condition known as:</p> <p>A. immunity.</p> <p>B. tolerance.</p> <p>C. autoimmune disease.</p> <p>D. antigenicity.</p> <p>E. sensitivity.</p> <p>10.T-Lymphocytes become ?_when exposed to tissue transplants from non-related persons.</p>	<p>7. Helper T cells:</p> <p>A. bind tightly to target cells and release a lymphotoxin called perforin.</p> <p>B. are essential in both humoral and cell mediated immune function activation.</p> <p>C. do not release interleukin 2.</p> <p>D. often function to decrease the immune response.</p> <p>E. None of the above</p> <p>8. Immunity:</p> <p>A. is not possible without a thyroid gland.</p> <p>B. is always achieved by getting a disease.</p> <p>C. confers "resistance" to specific diseases by antibody production.</p> <p>D. may be acquired by eating antigens.</p> <p>E. may be acquired only by injection with the proper antibodies.</p> <p>9. When B-cells are activated, they:</p> <p>A. multiply and produce plasma cells which release antibodies into the circulation.</p> <p>B. rush to the site of invasion and shower a pathogen with antibodies.</p> <p>C. form several types of helper cells which produce complement.</p> <p>D. develop into macro phages which phagocytize the invaders.</p> <p>10 Which of the following is/are a function of the lymphatic System:</p>
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<p>A. B-lymphocytes</p> <p>B. hemocytoblast</p> <p>C. platelet-producers</p> <p>D. sensitized lymphocytes</p> <p>E. plasma cells</p>	<p>A. Serves as an interstitial fluid drainage system.</p> <p>B. Removes bacteria from tissue fluid.</p> <p>C. Produces viruses and bacteria for use in the large Intestine and appendix.</p> <p>D. All of the above</p> <p>E. A and B only</p>
<p>11. The thymus plays an important role in the development of (the)</p> <p>A. endocrine system.</p> <p>B. cellular immunity.</p> <p>C. circulatory system.</p> <p>D. integumentary system.</p> <p>E. lymphatic system.</p>	<p>11. A "clone" of identical lymphocytes is produced in the -?-- In response to invasion of--?--. A. Thymus; antibodies</p> <p>B. Lungs, foreign antigens</p> <p>C. Lymph nodes; phagocytized foreign matter</p> <p>D. Cerebrum; toxic nerve impulses</p> <p>E. None of the above</p>
<p>12. The most important function of T-cells is/are:</p> <p>A. phagocytosis of foreign antigens.</p> <p>B. potentiation of the antibody function of B-lymphocytes.</p> <p>C. Both A and B</p> <p>D. Neither A nor B</p>	<p>12. The lymphatic and venous systems are similar in that</p> <p>A. They both contain red blood cells.</p> <p>B. The walls of the vessels are impermeable to proteins.</p> <p>C. Both A and B</p> <p>D. Neither A nor B</p>
<p>13. The lymphatic system differs from the circulatory system:</p> <p>A. by only carrying fluid away from tissues.</p> <p>B. in that the epithelial cells of lymph capillaries do not overlap.</p> <p>C. in that lymph capillaries are far more permeable than blood capillaries.</p> <p>D. in that the lymph capillaries allow free movement of fluid in and out of the capillaries.</p>	<p>13. Active immunity is acquired by either infection with the live organism or by:</p> <p>A. Being given the antibody from a person or animal that been infected.</p> <p>B. Exposure to histocompatible (or similar) antigens.</p> <p>C. Vaccination.</p> <p>D. Blood transfusions.</p> <p>E. All of the above</p>

E. A and C only

14.A "B Cell" responds to the initial antigen challenge immediately by all of these except:

- A. enlargement and rapid mitosis.
- B. formation of a large number of cells just like the original.
- C. immediate production of antigen-specific antibodies.
- D. production of progeny cells that include plasma cells and memory cells.

E. Cell to cell combat which includes phagocytosis

15. Select the correct statement about immune function:

- A. when a B-lymphocyte expresses a single unique receptor for an antigen on its cell surface, it is said to be immunocompetent.
- B. some lymphocytes will never encounter an antigen, to which they are capable of responding.
- C. an antigen only determines which existing lymphocytes will be stimulated to proliferate.
- D. once immunocompetence is established, the cell is committed to react with that one antigen.

E. All of the above

16. --?-- in the intercellular space are more likely to enter lymph capillaries than blood capillaries.

- A. Bacteria**
- B. Water molecules
- C. Sugar molecules
- D. Salt molecules

14. The factors that are believed to be responsible for the flow of lymph include:

- A. Contraction of skeletal muscles during activity.
- B. Contraction of the smooth muscle in the wall of the lymph vessels.
- C. Pressure changes in the thorax during breathing.
- D. Blood pressure in the large arteries.

E. All except D.

15. "Interferon" is:

- A. A toxic substance released by environmental poisons.
- B. Something which interferes with the development of immunity.
- C. A tissue extract which prevents viral RNA from changing normal cellular DNA activity.**
- D. A substance which releases histamine during inflammation.
- E. A type of "passive immunity".

16. The thoracic duct carries tissue fluid from the --?-- to the --?--.

- A. Arterioles; capillary beds
- B. Capillaries, venules
- C. Cisterna chyli; subclavian vein**
- D. Heart; coronary circulation
- E. Lymphatic capillaries; giant lacteal of the intestines.

17. The term "antigenic" means :

E. All of the above

17. The composition of lymph is similar to that of

A. whole blood.

B. interstitial fluid.

C. sugar.

D. chyme (fluid in stomach)

E. semen.

18. The spleen:

A. is situated in the upper right portion of the abdominal cavity.

B. is the largest lymphoid organ in the body.

C. Both A and B

D. Neither A nor B

19. The lymphatic system returns fluid from tissue spaces to the

A. circulatory system.

B. spinal fluid.

C. Both A and B

D. Neither A nor B

20. Lymph in the thoracic duct should have a much higher lymphocyte count than lymph in peripheral lymph vessels because the lymphocytes:

A. have just circulated through the tissues and are carrying waste material.

B. have multiplied by mitotic division in the lymph stream.

A. Able to form specific antibodies

B. Comes from a protein precursor

C. Both a and b

D. Neither a nor b

18. The likelihood of ___?___ increases with age and wear and tear on body tissues.

A. Immune tolerance

B. Autoimmunity

C. Agglutination

D. Natural immunity

19. Plasma cells are derived from:

A. Mast cells.

B. lymphocytes.

C. Bone marrow.

D. Monocytes.

20. Because the thymus gland is important in the pre-processing of T-lymphocytes before birth, it is considered to be a:

A. Vestigial organ

B. Pre-processing organ

C. Circulatory organ

D. All of the above

E. None of the above

21. The primary function of the lymphatic system is

C. have increased in numbers because this lymph has just passed through numerous lymph nodes.

D. have not as yet been filtered out by passage through the lymph nodes.

E. have not as yet been filtered out by passing through two or the primary filters, the liver and the spleen.

21. The functions of the spleen include

A. destruction of foreign organisms reaching it thru the blood.

B. destruction of worn out lymphocytes

C. serves as a lymph reservoir.

D. formation of red blood cells after birth.

E. All of the above

22. Factor(s) controlling flow of lymph include:

A. Gravity in areas below the heart

B. muscular movements and valve action in veins

C. Inspiration and expiration

D. All of the above

23. Which of the following is not a factor in the movement of lymph?

A. Arterial pulsations

B. Squeezing action of skeletal muscles upon veins

C. Breathing

D. Contraction of smooth muscle in the visceral organs

E. Negative pressure in thoracic cavity

A. circulation of nutrients

B. the transport of hormones

C. the production maintenance, and distribution of lymphocytes

D. the production, maintenance, and distribution of plasma proteins

E. both C and D

22. Anatomically, lymph vessels resemble

A. elastic arteries

B. muscular arteries

C. arterioles

D. medium veins

E. the vena cavae

23. Lymph nodes do all of the following, except

A. produce antibodies

B. monitor the contents of lymph

C. remove debris and pathogens from the lymph

D. act as a "way station" for cancer cells

E. remove excess nutrients from the lymph

24. Lymphocytes are located in each of the following tissues or organs except the

A. tonsils

B. spleen

C. lymph nodes

D. brain

<p>24. T-lymphocytes become ? when exposed to tissue transplants from non-relatives.</p> <p>A. B-lymphocytes</p> <p>B. Hemocytoblasts</p> <p>C. Platelet-producers</p> <p>D. Killer lymphocytes</p> <p>E. Plasma cells</p> <p>25. Functions of the "immune (or lymphatic) system" include:</p> <p>A. involvement in the elimination of foreign bodies.</p> <p>B. prevents successful transplantation of organs from non-related persons.</p> <p>C. Both A and B</p> <p>D. Neither A nor B</p> <p>26. "The ability to resist toxins or organisms that would damage another tissue" is called:</p> <p>A. tolerance.</p> <p>B. immunity.</p> <p>C. antigenicity.</p> <p>D. phagocytosis.</p> <p>E. Inflammation</p> <p>27. In passive immunity:</p> <p>A. antibodies made by another person are injected into the patient as a form of treatment.</p> <p>B. the patient produces lymphocytes and antibodies in response to an infection.</p> <p>C. immunity lasts for many years because memory</p>	<p>E. thymus gland</p> <p>25.The body's nonspecific defenses include all of the following, <u>except</u></p> <p>A. the skin</p> <p>B. complement</p> <p>C. interferon</p> <p>D. inflammation</p> <p>E. antibodies</p> <p>26.Each of the following is a physical barrier to infection except</p> <p>A. body hair</p> <p>B. epithelium</p> <p>C. mucous secretions</p> <p>D. complement</p> <p>E. basement membranes</p> <p>27.The second line of defense against pathogens are the</p> <p>A. T cells</p> <p>B. B cells</p> <p>C. NK cells</p> <p>D. phagocytes</p> <p>E. plasma cells</p> <p>28.Immunity that results from the natural exposure to an antigen in the environment is called ? immunity.</p> <p>A. active</p>
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<p>cells are produced.</p> <p>D. All of the above</p> <p>E. A and B only</p> <p>28. The type of resistance that develops as a result of developing a disease is:</p> <p>A. natural-acquired active immunity.</p> <p>B. artificial-acquired active immunity.</p> <p>C. artificial-acquired passive immunity.</p> <p>D. natural-acquired passive immunity.</p> <p>29. Two means of acquiring active immunity are vaccination and:</p> <p>A. agglutination.</p> <p>B. infection.</p> <p>C. pregnancy.</p> <p>D. All of the preceding.</p> <p>30. If a mother should introduce gamma globulin against measles to her fetus, then the fetus would have a type of – ?-- produced by – ?-- means.</p> <p>A. active immunity; acquired</p> <p>B. passive immunity; acquired</p> <p>C. passive immunity; natural</p> <p>D. active immunity; natural</p> <p>31. The following processes, A to E occur in getting humoral immunity. Which is first out of order?</p> <p>A. Production of stem cells in bone marrow</p> <p>B. Potentiation at thymus and other areas, such as</p>	<p>B. natural passive</p> <p>C. acquired</p> <p>D. auto</p> <p>E. innate</p> <p>29. In active immunization, the</p> <p>A. immune system attacks normal body cells</p> <p>B. body is deliberately exposed to an antigen</p> <p>C. body receives antibodies produced by another person</p> <p>D. body receives antibodies produced by another animal</p> <p>E. genes for antibodies are introduced into the body</p> <p>30. The cells responsible for humoral immunity are the <u>2</u> cells.</p> <p>A. NK</p> <p>B. B</p> <p>C. helper T</p> <p>D. cytotoxic T</p> <p>E. suppressor T</p> <p>31. Suppressor T cells act to</p> <p>A. suppress antigens</p> <p>B. limit the degree of memory in memory T cells</p> <p>C. limit antigen proliferation</p> <p>D. lower the responses of other T cells and B cells</p>
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<p>the liver</p> <p>C. Cloning in response to microbial introduction</p> <p>D. Antigenicity by plasma cells.</p> <p>E. Antibody production to specific antigens</p> <p>32. The idea that one's own antigens provide too much exposure to the thymus in the pre-processing time and thus destroy the ability to later provide lymphocyte cloning,</p> <p>is called:</p> <p>A. phagocytosis.</p> <p>B. coagulation.</p> <p>C. autoimmunity.</p> <p>D. tolerance.</p> <p>33. Antibodies combine with molecules which are called:</p> <p>A. nucleic acids.</p> <p>B. foreign bodies.</p> <p>C. antigens.</p> <p>D. antagonists.</p> <p>E. agonists.</p> <p>34. Cells responsible for immunity:</p> <p>A. know or recognize their own body's molecules.</p> <p>B. recognize the macro molecules from other organisms as foreign.</p> <p>C. launch immune attacks when stimulated by foreign macro molecules.</p> <p>D. All of the above</p>	<p>E. produce antibodies invited in autoimmunity</p> <p>32. Leslie has a bad sore throat and the lymph glands in her neck are swollen. This would indicate that</p> <p>A. the focus of the infection is the lymph glands</p> <p>B. lymph is not flowing through these lymph glands</p> <p>C. the affected lymph glands contain an increased number of lymphocytes</p> <p>D. the lymph gland is actively producing phagocytes</p> <p>E. the lymph gland has increased its secretion of thymosin</p> <p>33. In order for a lymphocyte to respond to an antigen, the antigen must</p> <p>A. be phagocytized by the lymphocyte</p> <p>B. enter the cytoplasm of the lymphocyte</p> <p>C. bind to the DNA of the lymphocyte</p> <p>D. bind to specific receptors on the lymphocyte membrane</p> <p>E. depolarize the lymphocyte</p> <p>34. B cells are primarily activated by the action of</p> <p>A. antigens</p> <p>B. antibodies</p> <p>C. helper T cells</p> <p>D. macrophages</p> <p>E. plasma cells</p> <p>35. The following are steps in the cell-mediated immune response.</p>
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<p>E. A and B only</p> <p>35. Which of the following is thought to be a possible cause of autoimmune disease?</p> <p>A. An imbalance between too much B-cell activity and not enough suppressor T-cell activity.</p> <p>B. Altering of cells or tissues so that surface antigens cause the production of killer T cells or antibodies to them.</p> <p>C. Long-term deprivation of sleep, causing prolonged loss in rem-sleep, and thus a drastic drop in serotonin levels.</p> <p>D. All of the above</p> <p>36. The production of antibodies in response to invasion of foreign antigens is facilitated by the action of --?-- lymphocytes in lymph nodes.</p> <p>A. A</p> <p>B. B</p> <p>C. C</p> <p>D. D</p> <p>E. T</p> <p>37. Which of the following is the better definition of immunity?</p> <p>A. Immunity refers to the resistance of the body to microbes: viruses, bacteria, and other unicellular and multicellular organisms.</p> <p>B. Immunity constitutes all the physiological mechanisms which allow the body to recognize materials as foreign to itself and to neutralize or eliminate them.</p> <p>38. The (gland) organ which determines the ability to provide cellular immunity, very early in life, is the:</p>	<p>1. several cycles of mitosis occur</p> <p>2. antigen is engulfed and presented by a macrophage</p> <p>3. cytotoxic T cells migrate to focus of infection</p> <p>4. undifferentiated T cells with specific receptors recognize the antigen</p> <p>5. T cells differentiate into cytotoxic T cells and T memory cells</p> <p>6. cytotoxic T cells release perforin and/or lymphotoxin.</p> <p>-----</p> <p>The correct sequence for these steps is</p> <p>A. 4, 1, 5, 3, 6, 2</p> <p>B. 2, 4, 1, 5, 3, 6</p> <p>C. 1, 2, 4, 5, 3, 6</p> <p>D. 3, 2, 4, 1, 5, 6</p> <p>E. 3, 6, 4, 5, 1, 2</p> <p>36. All of the following are true of the secondary or anamnestic response of humoral immunity, <u>except</u> that it</p> <p>A. involves memory B cells</p> <p>B. results in elevated titres of antibodies sooner than in the primary response</p> <p>C. generally prevents a person from showing symptoms of the disease</p> <p>D. can occur even if the second exposure occurs years after the initial exposure</p> <p>E. promotes an increased susceptibility to immune system failure</p>
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- A. thyroid.
- B. pituitary.
- C. thymus.**
- D. testes.
- E. brain

39. ? from the thymus is believed to give rise to sensitized lymphocytes and eventual cellular immunity.

A. Pre-processing

- B. Enzymes
- C. Antibodies
- D. Cells
- E. Foreign antigens

40. When antigens (foreign substances) enter the respiratory tract,

- A. atherosclerosis results.
- B. the probability for success of a heart transplant increases.
- C. B-lymphocytes multiply and form antibody-producing plasma cells.
- D. the clotting reactions are initiated.
- E. alveolar macrophages attempt to destroy them before delivering their by-products to lymph nodes.**