**3 GENERAL MEDICINE**

**IMMUNOLOGY**

STUDY QUESTIONS

1. Structure of the MHC I molecule. On what cells is it expressed? What antigens does it present? In what cellular compartment does the formation of complexes of antigenic peptides with MHC I take place? What genes encode the formation of this molecule?
2. Structure of the MHC II molecule. On what cells is it expressed? What antigens does it present? In what cellular compartment does the formation of complexes of antigenic peptides with MHC II take place? What genes encode the formation of this molecule?
3. Cytotoxic type of cellular immune response. What antigens is it formed on, what cells are involved in its implementation? What are the pathogen elimination mechanisms?
4. Inflammatory type of cellular immune response. What antigens is it formed on, what cells are involved in its implementation? What are the pathogen elimination mechanisms?
5. Humoral immune response. What antigens is it formed on, what cells are involved in its implementation? What are the pathogen elimination mechanisms?

MULTIPLE-CHOICE STUDY QUESTIONS

1. The functions of the immune system include:

Answer 1: all of the following;

Answer 2: elimination and disposal of necrotizing tissue structures;

Answer 3: rejection of the donor graft;

Answer 4: protection against pathogens of infectious diseases;

Answer 5: anti-tumor protection.

2. Immune responses to antigens that have infiltrated the skin or mucous membranes develop in:

Answer 1: the thymus;

Answer 2: bone marrow;

Answer 3: lymph nodes;

Answer 4: the liver;

Answer 5: the spleen.

3. The B-zone of the lymph node is:

Answer 1: capsule;

Answer 2: cortical zone;

Answer 3: paracortical zone;

Answer 4: medullar zone;

Answer 5: the lymph node gate.

4. The peripheral organs of the immune system include all but:

Answer 1: lymph nodes;

Answer 2: Peyer's patches;

Answer 3: appendicular process;

Answer 4: peripheral blood;

Answer 5: bone marrow.

5. Which organ is not encapsulated lymphoid organ?

Answer 1: Liver;

Answer 2: Lymph nodes;

Answer 3: Peyer's patches;

Answer 4: lymph node;

Answer 5: spleen.

6. The morphological substrate of the immune system is:

Answer 1: thymus;

Answer 2: bone marrow;

Answer 3: lymph node;

Answer 4: liver;

Answer 5: lymphoid tissue.

7. The peripheral organs of the immune system include the following, except:

Answer 1: spleen;

Answer 2: lymph nodes;

Answer 3: thymus;

Answer 4: Peyer's patches;

Answer 5: BALT.

8. What is the characteristic of the immune system in children of the first years of life?

Answer 1: natural hyperfunction of the humoral link;

Answer 2: natural humoral immunodeficiency;

Answer 3: natural phagocytic link deficiency;

Answer 4: normal level of complement components;

Answer 5: increased levels of complement components;

9. The synthesis of native IgG begins approximately at:

Answer 1: 1 month;

Answer 2: 2 months;

Answer 3: 6 months;

Answer 4: 1 year;

Answer 5: 2 years;

10. A decrease in the mass of lymphoid organs is observed from the age of:

Answer 1: 1 month;

Answer 2: 1 year;

Answer 3: 6 years;

Answer 4: 7 years;

Answer 5: puberty;

11. B-cells recognize:

Answer 1: An epitope embedded in the composition of MHC molecules;

Answer 2: PAMP;

Answer 3: DAMP;

Answer 4: native antigen;

Answer 5: stress molecules.

12. Coreceptor molecule for MHC-II class is:

Answer 1: CD3;

Answer 2: CD4;

Answer 3: CD8;

Answer 4: CD16;

Answer 5: CD56.

13. The epitope presented as a part of specialized molecules of the major histocompatibility complex is recognized by:

Answer 1: T-lymphocytes with the αβTCR receptor;

Answer 2: T-lymphocytes with the γδTCR receptor;

Answer 3: B-lymphocytes;

Answer 4: NK-cells;

Answer 5: Macrophages.

14. What are the phases of the immune response?

Answer 1: cellular and humoral;

Answer 2: antigen-independent and antigen-dependent;

Answer 3: inductive and effector;

Answer 4: helper and suppressor;

Answer 5: primary and secondary.

15. The similarity of innate and adaptive immunity is in:

Answer 1: destroying pathogens or infected cells;

Answer 2: PAMP recognition;

Answer 3: DAMP recognition;

Answer 4: antigen recognition;

Answer 5: formation of immunological memory.

16. MHC-II molecules are expressed on:

Answer 1: eosinophils;

Answer 2: red blood cells;

Answer 3: lymphocytes;

Answer 4: antigen-presenting cells;

Answer 5: all nucleated cells.

17. Opsonization is:

Answer 1: coating cells with molecules that facilitate their recognition and phagocytosis;

Answer 2: formation of a membrane-attacking complex;

Answer 3: killing pathogens;

Answer 4: the process of elimination of destruction products;

Answer 5: destroying of infected cells.

18. Coreceptor molecule for MHC-I class is:

Answer 1: CD3;

Answer 2: CD4;

Answer 3: CD8;

Answer 4: CD16;

Answer 5: CD56.

19. Factors of innate immunity include:

Answer 1: primary receptors for pathogens;

Answer 2: the complement system;

Answer 3: phagocytosis;

Answer 4: endogenous peptides-antibiotics;

Answer 5: all of the above.

20. Activation of the complement system along the classical pathway is triggered by:

Answer 1: the antigen-antibody complex;

Answer 2: complex of mannose-binding lectin with carbohydrates of the surface structures of microbial cells;

Answer 3: lipopolysaccharide of bacterial cell wall;

Answer 4: G - bacteria endotoxin;

Answer 5: zymosan.

21.WHAT ARE THE MAIN CYTOKINES SECRETED BY MACROPHAGES?

Answer 1: IL-2, IFNγ;

Answer 2 IL-1, TNFα;

Answer 3: IL-4, IL-5;

Answer 4: IL-17;

Answer 5: TGFβ;

22.THE FUNCTION OF MONOCYTE/MACROPHAGE Fs-RECEPTORS IS

Answer 1: recognition of antibody-opsonized cells;

Answer 2 facilitation of phagocytosis of antibody-opsonized cells;

Answer 3: destruction of antibody-opsonized cells by monocytes and macrophages;

Answer 4: recognition of the Fc-site of immunoglobulin molecules;

Answer 5: all of the above;

23.THE SPECIFICITY OF THE ANTIGEN IS DETERMINED BY

Answer 1: adjuvant;

Answer 2: hapten;

Answer 3: carrier;

Answer 4: all of the above;

Answer 5: none of the above;

24.CYTOKINE THAT REGULATES THE TRANSFORMATION OF A MONOCYTE INTO A MACROPHAGE IS

Answer 1: TNFα;

Answer 2 IL-1;

Answer 3: IL-5;

Answer 4: TGFβ;

Answer 5: M-CSF;

25.T-CELLS RECOGNIZE

Answer 1: an epitope embedded in the composition of MHC molecule;

Answer 2 PAMP;

Answer 3: DAMP;

Answer 4:  native antigen;

Answer 5: stress molecules;

26.MONONUCLEAR PHAGOCYTE SYSTEM INCLUDES CELLS OTHER THAN:

Answer 1: Macrophages;

Answer 2: Langerhans cells;

Answer 3: T-lymphocytes;

Answer 4: Monocytes;

Answer 5: Dendritic cells;

27.THE IMMUNOGENICITY OF ANTIGENS IS

Answer 1: the signs of genetic foreignness;

Answer 2: developing of non-responsiveness;

Answer 3: ability to cause antibody production;

Answer 4: the ability of an antigen to induce an immune response;

Answer 5: the feature by which the antigens differ from each other;

28.THE MAIN MARKER OF MONOCYTES AND MACROPHAGES

Answer 1: CD3 molecule;

Answer 2: CD4 molecule;

Answer 3: CD8 molecule;

Answer 4: CD14 molecule;

Answer 5: CD16 molecule;

29.IMMUNOGENICITY DEPENDS ON:

Answer 1: the method of ingestion;

Answer 2: chemical properties;

Answer 3: molecular weight;

Answer 4: features of the body's reaction;

Answer 5: all of the above;

30.RESIDENT MACROPHAGES INCLUDE

Answer 1: Kupffer cells;

Answer 2: microglia;

Answer 3: osteoclasts;

Answer 4: alveolar macrophages;

Answer 5: all of the above;

31.MUCOSAL IMMUNOGLOBULIN IS

Answer 1: IgM;

Answer 2: IgG;

Answer 3: IgA;

Answer 4: IgD;

Answer 5: IgE

32.WHAT DETERMINE THE DIFFERENCES BETWEEN THE CLASSES OF IMMUNOGLOBULINS?

Answer 1: hypervariable sites;

Answer 2: L – light chains;

Answer 3: Н – heavy chains;

Answer 4: frame regions;

Answer 5: domains

33.AVIDITY IS

Answer 1: individual allelic variants within one isotype;

Answer 2: antigenic variants of immunoglobulins;

Answer 3: the force of the chemical bond of one antigenic epitope with one of the active centers of the immunoglobulin molecule;

Answer 4: classes and subclasses of immunoglobulins;

Answer 5: the binding force of an entire antibody molecule to all the antigenic epitopes it has managed to bind

34.THE IMMUNOGLOBULIN OF THE PRIMARY IMMUNE RESPONSE IS

Answer 1: IgM;

Answer 2: IgG;

Answer 3: IgA;

Answer 4: IgD

Answer 5: IgE

35.WHAT ARE THE ISOTYPES?

Answer 1: individual allelic variants;

Answer 2: specificity to a specific antigen;

Answer 3: antigenic variants of immunoglobulins;

Answer 4: classes and subclasses of immunoglobulins;

Answer 5: the binding forces of the whole antibody molecule with all the antigenic epitopes that it has managed to bind

36.IMMUNOGLOBULINS THAT ACTIVATE COMPLEMENT BY THE CLASSICAL PATHWAY ARE

Answer 1: IgM, IgG1, IgG2, IgG3,

Answer 2: IgG4,IgE;

Answer 3: IgA, IgD;

Answer 4: IgD, IgE;

Answer 5: IgE, IgA1, IgA2.

37.WHAT ARE THE FORMS OF IMMUNOGLOBULINS?

Answer 1: soluble;

Answer 2: transmembrane;

Answer 3: binding;

Answer 4: all of the above;

Answer 5: none of the above

38.IMMUNOGLOBULIN PASSING THROUGH THE PLACENTA IS

Answer 1: IgM;

Answer 2: IgG;

Answer 3: IgA;

Answer 4: IgD;

Answer 5: IgE

39. IMMUNOGLOBULIN, WHICH PLAYS A KEY ROLE IN IMMEDIATE ALLERGIC REACTIONS IS

Answer 1: IgM;

Answer 2: IgG;

Answer 3: IgA;

Answer 4: IgD;

Answer 5: IgE

40. IMMUNOGLOBULIN OF THE SECONDARY IMMUNE RESPONSE IS

Answer 1: IgM;

Answer 2: IgG;

Answer 3: IgA;

Answer 4: IgD

Answer 5: IgE

41. THE REACTION OF THE CELLULAR LINK OF THE IMMUNE SYSTEM TO THE INTRODUCTION OF VIRUSES INTO THE BODY IS:

Answer 1: inhibition of T-suppressors;

Answer 2: lysis by T-killer cells of the body cells that have viral determinants on them;

Answer 3: activation of T-helpers;

Answer 4: inhibition of T-helper cells;

Answer 5: activation of T-suppressors;

42. THE MAIN MEMBRANE MARKER OF T-LYMPHOCYTES IS:

Answer 1: CD3;

Answer 2: CD4;

Answer 3: CD8;

Answer 4: CD16;

Answer 5: CD56;

43. HYPERSENSITIVITY OF THE PATIENT TO VIRAL AND FUNGAL INFECTIONS IS OBSERVED WITH A DEFICIENCY OF:

Answer 1: macrophages;

Answer 2: В-cells;

Answer 3: Т-cells;

Answer 4: neutrophils;

Answer 5: complement system;

44. THE MAIN PURPOSE OF NK CELLS IS:

Answer 1: progenitors of effector, regulatory cells;

Answer 2: progenitors of antibody-secreting cells;

Answer 3: cytotoxic cells;

Answer 4: antibody-secreting cells;

Answer 5: helpers

45. TOLERANCE IS CHARACTERIZED BY EVERYTHING EXCEPT:

Answer 1: no reaction to the antigen from the T-lymphocytes;

Answer 2: specificity;

Answer 3: no reaction to the antigen from B-lymphocytes;

Answer 4: no reaction to the antigens of the body;

Answer 5: production of IgM and IgG;

46. A MARKER OF A MATURE NAIVE B-LYMPHOCYTE READY TO LEAVE THE BONE MARROW IS:

Answer 1: BCR –IgD expression;

Answer 2: BCR – IgM expression;

Answer 3: BCR-IgG expression;

Answer 4: simultaneous expression of 2 types of BCR-IgM and IgD;

Answer 5: BCR – IgA expression;

47. B-LYMPHOCYTE SUBPOPULATIONS ARE:

Answer 1: В1-cells;

Answer 2: В2-cells;

Answer 3: marginal zone B-cells;

Answer 4: all of the above;

Answer 5: none of the above;

48. THE MAIN MEMBRANE MARKER OF B-LYMPHOCYTES IS:

Answer 1: CD3;

Answer 2: CD4;

Answer 3: CD8;

Answer 4: CD19;

Answer 5: CD56;

49. MECHANISMS OF B-LYMPHOCYTE TOLERANCE ARE:

Answer 1: editing the receptor by antigen specificity;

Answer 2: anergy;

Answer 3: deletion of autoreactive clones and negative selection;

Answer 4: all of the above;

Answer 5: none of the above;

50. ONE OF THE MAIN FUNCTIONS OF THE CELLULAR LINK OF THE IMMUNE SYSTEM IS:

Answer 1: antigen-presenting;

Answer 2: antigen-binding;

Answer 3: regulatory;

Answer 4: activity;

Answer 5: object's opsonization;

51. THE MAJOR HISTOCOMPATIBILITY COMPLEX IS

Answer 1: a complex of genes encoding the synthesis of immunoglobulins;

Answer 2: the gene system that ensures the presence of ABO blood groups;

Answer 3: the gene system encoding the synthesis of acute phase proteins;

Answer 4: the gene system that codes for the synthesis of complement proteins;

Answer 5: a system of genes with high polymorphism that determines tissue incompatibility in allotransplantation of tissues;

52. THE FUNCTION OF HLA SYSTEM IS:

Answer 1: cytokine production;

Answer 2: Ig production;

Answer 3: presentation of peptide antigens to T-lymphocytes;

Answer 4: facilitating phagocytosis of antibody-opsonized cells;

Answer 5: cytotoxicity;

53. CO-DOMINANCE IS

Answer 1: a simultaneous expression of maternal and paternal chromosome genes;

Answer 2: an expression of paternal chromosome genes;

Answer 3: an expression of maternal chromosome genes;

Answer 4: a lack of gene expression and maternal and paternal chromosomes;

Answer 5: a lack of gene expression on the paternal chromosome only;

54. THE EPITOPE EMBEDDED IN THE COMPOSITION OF MHC MOLECULES IS RECOGNIZED BY

Answer 1: B-lymphocytes;

Answer 2: T-lymphocytes;

Answer 3: NK cells;

Answer 4: red blood cells;

Answer 5: neutrophils;

55. ANTIGEN-PRESENTING CELLS (APC) ARE

Answer 1: macrophages, dendritic cells, B-lymphocytes;

Answer 2: red blood cells, platelets;

Answer 3: NK-cells;

Answer 4: T-lymphocytes;

Answer 5: CD8+ T-lymphocytes;

56. THE PRESENCE IN THE POPULATION OF MANY ALLELIC VARIANTS OF THE SAME GENE IN DIFFERENT INDIVIDUALS IS CALLED

Answer 1: gene polymorphism;

Answer 2: co-dominance;

Answer 3: natural selection;

Answer 4: all of the above;

Answer 5: none of the above;

57. THE MHC CLASS II MOLECULE CONSISTS OF THE FOLLOWING GLYCOPROTEINS

Answer 1: α-chains and β2-microglobulin;

Answer 2: 2 transmembrane chains: α-and β-chains;

Answer 3: 2α-chains;

Answer 4: 3α-chains;

Answer 5: 2β-chains;

58. THE MHC CLASS I MOLECULE CONSISTS OF THE FOLLOWING GLYCOPROTEINS

Answer 1: α-chains and β2-microglobulin;

Answer 2: 2 transmembrane chains: α-and β-chains;

Answer 3: 2α-chains;

Answer 4: 3α-chains;

Answer 5: 2β-chains;

59. MHC CLASS I GENES INVOLVED IN ANTIGEN PRESENTATION ARE

Answer 1: A, B, C;

Answer 2: Е, F, G, Н;

Answer 3: DP, DQ и DR;

Answer 4: DM, DO;

Answer 5: D;

60. WHICH GENE PRODUCTS ARE INVOLVED IN THE REJECTION OF INCOMPATIBLE GRAFTS AND THE PRESENTATION OF ANTIGEN TO T-CELLS

Answer 1: cytokine genes;

Answer 2: immunoglobulin genes;

Answer 3: MHCI and MHCII;

Answer 4: MHCIII;

Answer 5: non-classical genes;

61. WHAT ARE THE PHASES OF IMMUNE RESPONSE?

Answer 1: cellular and humoral;

Answer 2: antigen-independent and antigen-dependent;

Answer 3: inductive and effector;

Answer 4: helper and suppressor;

Answer 5: primary and secondary;

62. THE HUMORAL IMMUNE RESPONSE IS FORMED TO ALL AGENTS EXCEPT:

Answer 1: helminths;

Answer 2: bacteria;

Answer 3: bacterial toxins;

Answer 4: virus-infected cells;

Answer 5: allergens;

63. CELLULAR IMMUNITY DEFICIENCY IS MOST OFTEN MANIFESTED BY:

Answer 1: recurrent S. aureus infection;

Answer 2: chronic pyoderma;

Answer 3: persistence of viruses and other intracellular parasites;

Answer 4: dysbiosis of the gastrointestinal tract;

Answer 5: chronic upper respiratory tract infection;

64. THE MAIN CYTOKINE OF TH1-LYMPHOCYTES IS:

Answer 1: IL-3;

Answer 2: IL-4;

Answer 3: IL-5;

Answer 4: IFNγ;

Answer 5: TGFβ;

65. THE FUNCTIONS OF IFNγ ARE:

Answer 1: increased differentiation of Th2 cells;

Answer 2: suppression of virus replication;

Answer 3: stimulation of immunoglobulin E production

Answer 4: stimulation of IL-4 production;

Answer 5: neutralizing toxins;

66. THE STRENGTH AND DURATION OF THE HUMORAL IMMUNE RESPONSE ARE DETERMINED BY:

Answer 1: antigenic stimulation;

Answer 2: concentration of specific antibodies in the body;

Answer 3: activity of T- and B- regulators;

Answer 4: activity of T-helpers;

Answer 5: all of the above;

67. TH2-DEPENDENT DISEASES INCLUDE:

Answer 1: multiple sclerosis;

Answer 2: rheumatoid arthritis;

Answer 3: allergic diseases;

Answer 4: chronic hepatitis C;

Answer 5: diabetes mellitus type 1;

68. THE MAIN CYTOKINE OF TH2-LYMPHOCYTES IS:

Answer 1: IL-3;

Answer 2: IL-4;

Answer 3: IL-5;

Answer 4: IFNγ;

Answer 5: TGFβ;

69. EOSINOPHIL SURVIVAL AND DIFFERENTIATION FACTOR IS:

Answer 1: IL-3;

Answer 2: IL-4;

Answer 3: IL-5;

Answer 4: IFNγ;

Answer 5: TGFβ;

70. THE PRIMARY IMMUNE RESPONSE IS CHARACTERIZED BY:

Answer 1: occurs when the antigen re-enters the body;

Answer 2: the maximum level of antibodies is higher;

Answer 3: the antibody persistence period is longer;

Answer 4: the predominant production of immunoglobulins G;

Answer 5: the predominant production of immunoglobulins M;

71. WHICH HORMONE IS THE HORMONE OF THE THYMUS?

Answer 1: thyroxine;

Answer 2: thymulin;

Answer 3: cortisol;

Answer 4: testosterone;

Answer 5: insulin;

72. WHICH CYTOKINE IS A FACTOR OF SURVIVAL AND DIFFERENTIATION OF EOSINOPHILS?

Answer 1: IL-3;

Answer 2: IL-4;

Answer 3: IL-5;

Answer 4: IFNγ;

Answer 5: TFRβ;

73. GM-CSF IS:

Answer 1: antiviral cytokine;

Answer 2: pro-inflammatory cytokine;

Answer 3: anti-inflammatory cytokine;

Answer 4: immunoregulatory cytokine;

Answer 5: hematopoietic cytokine;

74. WHICH CYTOKINES CONTRIBUTE TO INFLAMMATION?

Answer 1: IL-1;

Answer 2: IL-4;

Answer 3: IL-10;

Answer 4: IL-2;

Answer 5: IL-4;

75. WHICH CYTOKINES SUPPRESS INFLAMMATION?

Answer 1: IL-10;

Answer 2: IL-1;

Answer 3: TNFα;

Answer 4: IL-6;

Answer 5: IL-5;

76. IFNγ IS:

Answer 1: antiviral cytokine;

Answer 2: pro-inflammatory cytokine;

Answer 3: anti-inflammatory cytokine;

Answer 4: immunoregulatory cytokine;

Answer 5: hematopoietic cytokine;

77. TNFα IS:

Answer 1: antiviral cytokine;

Answer 2: pro-inflammatory cytokine;

Answer 3: anti-inflammatory cytokine;

Answer 4: immunoregulatory cytokine;

Answer 5: hematopoietic cytokine;

78. IL-10 IS:

Answer 1: antiviral cytokine;

Answer 2: pro-inflammatory cytokine;

Answer 3: anti-inflammatory cytokine;

Answer 4: immunoregulatory cytokine;

Answer 5: hematopoietic cytokine;

79. WHAT FUNCTIONS ARE RELATED TO THE FUNCTIONS OF INTERFERONS?

Answer 1: all of the following;

Answer 2: participation in antigen recognition;

Answer 3: suppression of the connection of the virus RNA with the ribosomes of the host cells;

Answer 4: regulation of the immune response;

Answer 5: cytotoxic effect on the virus;

80. WHICH CELLS ARE THE MAIN PRODUCERS OF TNFα?

Answer 1: T-helpers and cytotoxic T-lymphocytes;

Answer 2: monocytes and macrophages;

Answer 3: eosinophils and basophils;

Answer 4: red blood cells and platelets;

Answer 5: NK cells and NKT cells;

81. WHAT FACTORS INHIBIT THE FUNCTIONS OF THE IMMUNE SYSTEM

Answer 1: glucocorticoids

Answer 2: insulin

Answer 3: thyroxine

Answer 4: cholinergic nerve stimuli

Answer 5: somatotropic hormone

82. WHAT FACTORS INHIBIT THE FUNCTIONS OF THE IMMUNE SYSTEM

Answer 1: α-endorphin;

Answer 2: thyroxine;

Answer 3: acetylcholine;

Answer 4: androgens;

Answer 5: somatotropic hormone;

83. WHAT FACTORS INHIBIT THE FUNCTIONS OF THE IMMUNE SYSTEM

Answer 1: α-endorphin

Answer 2: acetylcholine

Answer 3: catecholamines

Answer 4: thyroxine

Answer 5: somatotropic hormone

84. WHAT FACTORS STIMULATE THE FUNCTIONS OF THE IMMUNE SYSTEM

Answer 1: androgens;

Answer 2: somatotropic hormone;

Answer 3: estrogens;

Answer 4: glucocorticoids;

Answer 5: β-endorphin;

85. HOW SEX HORMONES (ANDROGENS AND ESTROGENS) AFFECT THE IMMUNE SYSTEM

Answer 1: increase the number of lymphocytes and their reaction to antigens;

Answer 2: activate regulatory T cells;

Answer 3: increase the level of T-lymphocytes;

Answer 4: increase the level of B-lymphocytes;

Answer 5: reduce the number of lymphocytes and their reaction to antigens;

86. HOW GLUCOCORTICOIDS AFFECT PERIPHERAL LYMPHOCYTES

Answer 1: increased proliferation of lymphocytes

Answer 2: induction of apoptosis of activated lymphocytes

Answer 3: increased secretion of IL-2 by T-lymphocytes

Answer 4: stimulation of cytokine

Answer 5: production activation of lymphocytes

87. WHAT EFFECT DO GLUCOCORTICOIDS SYNTHESIZED BY THYMUS EPITHELIAL CELLS HAVE ON THYMOCYTES

Answer 1: cause deletion of autoreactive clones of thymocytes

Answer 2: increase activation of thymocytes

Answer 3: accelerate the differentiation of thymocytes

Answer 4: promote thymocyte anergy

Answer 5: participation in the editing of the thymocyte receptor

88. WHAT FACTORS ACTIVATE THE CELLS OF THE IMMUNE SYSTEM

Answer 1: ACTH

Answer 2: adrenaline

Answer 3: norepinephrine

Answer 4: GCS

Answer 5: melatonin

89. WHAT FACTORS STIMULATE THE FUNCTIONS OF THE IMMUNE SYSTEM

Answer 1: ACTH

Answer 2: androgens

Answer 3: insulin

Answer 4: estrogens

Answer 5: norepinephrine

90. WHAT IS THE RESULT OF THE WEAKENING OF THYMUS HORMONE PRODUCTION

Answer 1: to a decrease in the activity of NK cells

Answer 2: to a decrease in the level of B-lymphocytes

Answer 3: to an increase in the ability of T-lymphocytes to respond with proliferation to activating stimuli

Answer 4: to a decrease in the ability of T-lymphocytes to secrete IL-2

Answer 5: to an increase in the ability of T-lymphocytes to secrete IL-2

91. DETERMINATION OF WHICH INDICATORS OF THE IMMUNOGRAM BELONG TO THE LEVEL 1 TESTS:

Answer 1: determination of the content of acute phase proteins;

Answer 2: determination of complement system proteins;

Answer 3: determination of the presence of autoantibodies;

Answer 4: determination of the expression of activation markers (HLA-DR, CD25) of lymphocyte subpopulations;

Answer 5: determination of IgA content;

92. DETERMINATION OF WHICH INDICATORS OF THE IMMUNOGRAM BELONG TO THE LEVEL 1 TESTS:

Answer 1: determination of the presence of autoantibodies;

Answer 2: determination of complement proteins;

Answer 3: determining the number of B cells;

Answer 4: definition of general IgE;

Answer 5: definition of a specific IgE;

93. DETERMINATION OF WHICH INDICATORS OF THE IMMUNOGRAM BELONG TO THE LEVEL 2 TESTS:

Answer 1: determination of the functional activity of phagocytes;

Answer 2: determination of the number of NK cells;

Answer 3: determination of the number of B-lymphocytes;

Answer 4: determination of the absolute number of peripheral blood lymphocytes;

Answer 5: evaluation of cytokine formation in cell culture;

94. DETERMINATION OF WHICH INDICATORS OF THE IMMUNOGRAM REFERS TO THE LEVEL 2 TESTS:

Answer 1: determination of the number of B-lymphocytes;

Answer 2: determination of complement system proteins;

Answer 3: determination of the number of CD3+, CD4+, CD8+ lymphocytes;

Answer 4: determination of the number of T-lymphocytes;

Answer 5: determination of the content of IgA, IgM, IgG;

95. WHAT CHANGES IN THE IMMUNOGRAM ARE CHARACTERISTIC OF AUTOIMMUNE DISEASES IN THE PERIOD OF EXACERBATION

Answer 1: concentrations of circulating immune complexes within the normative values;

Answer 2: general hypergammaglobulinemia;

Answer 3: increased number of T-suppressors;

Answer 4: reduced number of T-helpers;

Answer 5: hypofunction of the macrophage link;

96. WHICH CLASS OF IMMUNOGLOBULINS PREVAIL DURING PRIMARY INFECTION WITH THE PATHOGEN:

Answer 1: immunoglobulins G;

Answer 2: immunoglobulins E;

Answer 3: immunoglobulins M;

Answer 4: normal antibodies;

Answer 5: immunoglobulins D;

97. WHAT CHANGES IN THE IMMUNOGRAM ARE CHARACTERISTIC OF ALLERGIC DISEASES:

Answer 1: an increase in the number of B-lymphocytes;

Answer 2: an increase in the number of T-lymphocytes;

Answer 3: increasing the IgE level;

Answer 4: increasing the IgA level;

Answer 5: increasing IgG levels;

98. WHAT CHANGES IN THE IMMUNOGRAM ARE CHARACTERISTIC OF A VIRAL INFECTION:

Answer 1: decrease in the number of CD4 lymphocytes;

Answer 2: decrease in the number of CD8 lymphocytes;

Answer 3: reducing IgM levels;

Answer 4: increasing the IgE level;

Answer 5: reducing IgG levels;

99. WHAT CHANGES IN THE IMMUNOGRAM ARE CHARACTERISTIC OF SEVERE PURULENT SURGICAL INFECTION

Answer 1: decreased functional activity of macrophages;

Answer 2: reducing the number of T-killers;

Answer 3: increasing the number of T-helpers;

Answer 4: an increase in the number of B-lymphocytes;

Answer 5: general hypergammaglobulinemia;

100. SYNTHESIS OF IMMUNOGLOBULINS OF WHAT CLASS IS CHARACTERISTIC OF BACTERIAL INFECTION:

Answer 1: immunoglobulins E and A;

Answer 2: immunoglobulins E;

Answer 3: immunoglobulins M and G;

Answer 4: normal antibodies;

Answer 5: immunoglobulins D;

101. TO ASSESS THE T-CELL LINK OF IMMUNITY, THE FOLLOWING STUDIES ARE NECESSARY, EXCEPT:

Answer 1: quantitative determination of T-lymphocytes and their subpopulations;

Answer 2: determining the level of thymus hormones;

Answer 3: identification of cytokines produced;

Answer 4: determination of the functional activity of macrophages;

Answer 5: identification of the ability to perform effector functions of T-lymphocytes;

102. WHAT CAN CAUSE A DECREASE IN THE CONTENT OF B-LYMPHOCYTES:

Answer 1: bacterial infections;

Answer 2: autoimmune diseases;

Answer 3: allergic diseases;

Answer 4: lymphocytic leukemia;

Answer 5: primary humoral immunodeficiency;

103. FLOW CYTOMETRY IS USED FOR EVERYTHING EXCEPT:

Answer 1: immunophenotyping of peripheral blood cells;

Answer 2: determination of phagocytic activity;

Answer 3: determination of the level of immunoglobulins;

Answer 4: determination of intracellular cytokines;

Answer 5: cell cycle research;

104. WHAT TEST IS CARRIED OUT TO ASSESS THE FUNCTIONAL STATE OF PHAGOCYTES:

Answer 1: NBT test;

Answer 2: turbodimetry;

Answer 3: high-speed nephelometry;

Answer 4: the ELISA method;

Answer 5: the reaction of lymphocyte blast transformation;

105. WHAT METHOD IS USED TO DETERMINE ANTIBODIES:

Answer 1: enzyme immunoassay;

Answer 2: the rosette formation method;

Answer 3: counting the number of white blood cells in the Goryaev chamber;

Answer 4: flow cytometry;

Answer 5: the method of mixed culture of lymphocytes;

106. WHAT METHOD IS USED TO EVALUATE THE NUMBER OF LYMPHOCYTE SUBPOPULATIONS:

Answer 1: NBT test;

Answer 2: cytometry;

Answer 3: nephelometry;

Answer 4: turbodimetry;

Answer 5: cultural method;

107. WHAT TEST IS CARRIED OUT TO DETERMINE THE FUNCTIONAL STATE OF LYMPHOCYTES:

Answer 1: NBT test;

Answer 2: phagocytic index studies;

Answer 3: radial immunodiffusion method;

Answer 4: enzyme immunoassay;

Answer 5: the reaction of lymphocyte blast transformation;

108. WHICH PATHOGEN CAUSES EOSINOPHILIA AND HYPERPRODUCTION OF IgE

Answer 1: bacteria;

Answer 2: viruses;

Answer 3: parasites;

Answer 4: fungi;

Answer 5: single-celled protozoa;

109. WHAT CAUSES INCREASE THE PHAGOCYTIC ACTIVITY OF LEUKOCYTES:

Answer 1: primary immunodeficiency;

Answer 2: chronic infections;

Answer 3: AIDS;

Answer 4: acute bacterial infections;

Answer 5: severe purulent infections;

110. WHICH PATHOGEN INCREASES THE NUMBER OF CD8+ LYMPHOCYTES:

Answer 1: bacteria;

Answer 2: viruses;

Answer 3: parasites;

Answer 4: mushrooms;

Answer 5: single-celled protozoa;

111. WHICH GROUPS OF DRUGS CONTRIBUTE TO THE DEVELOPMENT OF SECONDARY IMMUNODEFICIENCY?

Answer 1: antihypertensive drugs;

Answer 2: adaptogens;

Answer 3: antihistamines;

Answer 4: cytostatics;

Answer 5: sulfonamides;

112. WHAT FACTORS CAN CONTRIBUTE TO THE DEVELOPMENT OF SECONDARY IMMUNODEFICIENCY?

Answer 1: multivitamins;

Answer 2: walking in the forest;

Answer 3: sports;

Answer 4: adaptogens;

Answer 5: long-term stress;

113. WHAT IMMUNOTROPIC DRUGS ARE USED FOR AUTOIMMUNE DISEASES?

Answer 1: immunostimulants;

Answer 2: immunosuppressants;

Answer 3: interferon inductors;

Answer 4: drugs that stimulate the humoral immunity;

Answer 5: drugs that stimulate the cellular immunity;

114. WHAT CONTRAINDICATIONS TO THE USE OF IMMUNOSTIMULATING DRUGS DO YOU KNOW?

Answer 1: severe lung diseases;

Answer 2: severe cardiovascular diseases;

Answer 3: allergic diseases;

Answer 4: tuberculosis;

Answer 5: hypersensitivity to drug components;

115. WHAT IS THE INDICATION FOR THE USE OF IMMUNOMODULATORS?

Answer 1: primary immunodeficiency;

Answer 2: secondary immunodeficiency;

Answer 3: allergic diseases;

Answer 4: autoimmune diseases;

Answer 5: oncological diseases;

116. WHICH IMMUNOMODULATORS ARE OF BONE MARROW ORIGIN?

Answer 1: Licopid;

Answer 2: Myelopid;

Answer 3: Bronchomunal;

Answer 4: Ronkoleikin;

Answer 5: Pentaglobin;

117. WHICH DRUGS ENHANCE PHAGOCYTOSIS AND INTRACELLULAR BACTERIAL KEELING?

Answer 1: T-activin;

Answer 2: Timogen;

Answer 3: Licopid;

Answer 4: Myelopid;

Answer 5: Imunofan;

118. WHICH DRUGS BELONG TO INTERFERONS?

Answer 1: Viferon;

Answer 2: Arbidol;

Answer 3: Cycloferon;

Answer 4: Imunofane;

Answer 5: Octagam;

119. WHICH DRUGS ARE BACTERIAL LYSATES?

Answer 1: Polyoxidonium;

Answer 2: Myelopid;

Answer 3: Ismigen;

Answer 4: Ronkoleikin;

Answer 5: Pentaglobin;

120. WHICH DRUGS CAUSE APOPTOSIS OF ACTIVATED LYMPHOCYTES?

Answer 1: Arbidol;

Answer 2: Polyoxidonium;

Answer 3: Glucocorticosteroids;

Answer 4: Tacrolimus;

Answer 5: Bronchomunal;

121. WHICH METHOD OF ADMINISTRATION OF THE VACCINE INCREASES ITS IMMUNOGENICITY?

Answer 1: subcutaneous;

Answer 2: intramuscular;

Answer 3: intravenous;

Answer 4: intradermal;

Answer 5: does not depend on the route of administration;

122. CHOOSE THE RIGHT SENTENCE:

Answer 1: adjuvants promote slower antigen release and a stronger immune response;

Answer 2: adjuvants promote faster antigen release and a stronger immune response;

Answer 3: adjuvants promote slower antigen release and a weaker immune response;

Answer 4: adjuvants promote faster antigen release and a weaker immune response;

Answer 5: immunogenicity does not depend on the presence of an adjuvant;

123. WHAT VACCINES ARE RECOMMENDED FOR PEOPLE WITH ASTHMA AND OTHER CHRONIC LUNG DISEASES?

Answer 1: hepatitis A and B;

Answer 2: meningococcal and Hib infections;

Answer 3: flu and pneumococcal infection;

Answer 4: chickenpox and hepatitis B;

Answer 5: Hib infections;

124. WHICH CATEGORIES OF PEOPLE ARE RECOMMENDED TO BE VACCINATED AGAINST INFLUENZA?

Answer 1: persons over 60 years of age;

Answer 2: students;

Answer 3: people working in educational institutions;

Answer 4: people working in medical institutions;

Answer 5: all the answers are correct;

125. WHICH CATEGORIES OF PEOPLE ARE RECOMMENDED TO BE VACCINATED AGAINST TICK-BORNE ENCEPHALITIS?

Answer 1: persons living in territories endemic to tick-borne viral encephalitis;

Answer 2: students of secondary and higher educational institutions;

Answer 3: persons working in agriculture;

Answer 4: persons over 60 years of age;

Answer 5: working in medical institutions;

126. IF A TICK HAS BITTEN, WHEN IS IT RECOMMENDED TO INJECT IMMUNOGLOBULIN AGAINST TICK-BORNE ENCEPHALITIS?

Answer 1: on the first day;

Answer 2: in the first 96 hours;

Answer 3: in the first week;

Answer 4: does not depend on the time after the tick bite;

Answer 5: it is not recommended;

127. WHAT VACCINES ARE RECOMMENDED FOR PEOPLE WITH CARDIOVASCULAR DISEASES?

Answer 1: hepatitis A and B;

Answer 2: meningococcal and HIB infections;

Answer 3: flu and pneumococcal infection;

Answer 4: chickenpox and hepatitis B;

Answer 5: HIB infections;

128. WHAT VACCINES ARE RECOMMENDED FOR PEOPLE WITH CHRONIC VIRAL HEPATITIS B AND C?

Answer 1: hepatitis A;

Answer 2: meningococcal infection;

Answer 3: flu;

Answer 4: pneumococcal infection;

Answer 5: Hib infections;

129. WHICH CATEGORIES OF PEOPLE ARE RECOMMENDED TO BE VACCINATED AGAINST RUBELLA?

Answer 1: women aged 18-25 who are not vaccinated against rubella;

Answer 2: women aged 18-25 years who have 1 rubella vaccination;

Answer 3: women planning pregnancy with unknown vaccination status;

Answer 4: women planning pregnancy with the absence of specific IgG for rubella, regardless of the presence of rubella disease in the past;

Answer 5: all the answers are correct;

130. WHAT VACCINES ARE RECOMMENDED FOR ONCOHEMATOLOGICAL PATIENTS RECEIVING IMMUNOSUPPRESSIVE THERAPY?

Answer 1: flu;

Answer 2: pneumococcal infection;

Answer 3: chickenpox;

Answer 4: hepatitis B;

Answer 5: influenza, pneumococcal infection, chickenpox, hepatitis B;

131.WHEN DOES THE MASS OF LYMPHOID ORGANS BEGIN TO DECREASE?

Answer 1: from 1 month;

Answer 2: from 1 year;

Answer 3: from 6 years old;

Answer 4: from the age of 7;

Answer 5: from puberty;

132. WHAT CLASS OF IMMUNOGLOBULINS PREVAIL IN THE BLOOD OF A NEWBORN?

Answer 1: IgA of the child;

Answer 2: IgM maternal;

Answer 3: IgM of the child;

Answer 4: maternal IgG;

Answer 5: сhild's IgG;

133. HOW DOES THE LEVEL OF B-LYMPHOCYTES DIFFER IN NEWBORNS COMPARED TO ADULTS?

Answer 1: reduced;

Answer 2: normal;

Answer 3: increased;

Answer 4: B cells are not detected;

Answer 5: only B1 cells are present;

134. WHAT TYPICAL CHANGES IN THE IMMUNOGRAM FOR CHILDREN OF THE FIRST YEARS OF LIFE?

Answer 1: natural hyperfunction of the humoral link;

Answer 2: natural humoral immunodeficiency;

Answer 3: natural deficiency of the phagocytic link;

Answer 4: normal level of complement components;

Answer 5: increased levels of complement components;

135. WHEN IS sIgA COMPARABLE TO ADULTS?

Answer 1: by 1 month of life;

Answer 2: to 2 months of life;

Answer 3: by 6-7 months of life;

Answer 4: by 2-4 years;

Answer 5: by 5-6 years;

136. HOW IS THE LEVEL OF T-LYMPHOCYTES IN NEWBORNS COMPARED TO ADULTS?

Answer 1: reduced;

Answer 2: normal;

Answer 3: increased;

Answer 4: T cells are not detected;

Answer 5: only T cells alpha-betaTCR are present;

137. WHEN IS IgM COMPARABLE TO ADULTS?

Answer 1: by 1 month of life;

Answer 2: by 2 months of life;

Answer 3: by 6 months of life;

Answer 4: by 1 year;

Answer 5: by 6 years;

138.WHEN THE CHILD BEGINS TO SYNTHESIZE IgG?

Answer 1: 1 month;

Answer 2: 2 months;

Answer 3: 6 months;

Answer 4: from 1 year;

Answer 5: from 2 years old;

139. WHAT CAUSES THE INCREASE IN TUMOR DISEASES IN THE ELDERLY?

Answer 1: T cell immunodeficiency;

Answer 2: B cell immunodeficiency;

Answer 3: deficiency of the phagocytic link;

Answer 4: NK cell deficiency;

Answer 5: complement deficiency

140. WHAT MECHANISM PREVENTS FETAL REJECTION?

Answer 1: no expression of classical MHC-I molecules on trophoblast cells;

Answer 2: expression of molecules that block the activity of natural killers;

Answer 3: decreased synthesis of pro-inflammatory cytokines by placental macrophages;

Answer 4: placental APC immunosuppressive microenvironment;

Answer 5: all of the above

141. WHAT IMMUNOLOGICAL EXAMINATION SHOULD BE PRESCRIBED FOR A PATIENT WITH SUSPECTED IMMUNODEFICIENCY?

Answer 1: blood test

Answer 2: determination of the content of T- and B-lymphocytes

Answer 3: determination of the content of serum immunoglobulins IgA, IgG, IgM

Answer 4: determination of the phagocytic activity of neutrophils

Answer 5: all of the above

142. PATIENTS WITH HUMORAL IMMUNODEFICIENCY ARE PREDISPOSED TO THE PERSISTENCE OF WHAT TYPE OF PATHOGEN?

Answer 1: viral infection

Answer 2: parasitic infestation

Answer 3: mycoses

Answer 4: bacterial infection

Answer 5: specific infection

143. WHAT PRIMARY IMMUNODEFICIENCIES ARE RELATED TO HUMORAL PID?

Answer 1: Good's Syndrome

Answer 2: DiGeorge Syndrome

Answer 3: Bruton's disease

Answer 4: Louis Bar Syndrome

Answer 5: Chediak-Higashi Syndrome

144. WHAT PID IS CHARACTERIZED BY A DEFECT IN THE COMPLEMENT SYSTEM?

Answer 1: Nijmegen syndrome

Answer 2: DiGeorge Syndrome

Answer 3: Bruton's disease

Answer 4: hereditary angioedema

Answer 5: Chediak-Higashi Syndrome

145. WHAT PID IS MANIFESTED BY REPEATED ABSCESSES OF THE SKIN AND SUBCUTANEOUS TISSUE OF STAPHYLOCOCCAL ETIOLOGY, PNEUMONIA WITH THE FORMATION OF PNEUMOCELE, ANOMALIES IN THE STRUCTURE OF THE FACIAL SKELETON, ATOPIC DERMATITIS?

Answer 1: Selective IgA deficiency

Answer 2: IgE hyperimmunoglobulemia syndrome

Answer 3: Louis Bar Syndrome

Answer 4: Wiskott-Aldrich Syndrome

Answer 5: Chronic granulomatous disease

146. WHICH PID REFERS TO COMBINED IMMUNODEFICIENCIES?

Answer 1: Nijmegen syndrome

Answer 2: DiGeorge Syndrome

Answer 3: Bruton's disease

Answer 4: Louis Bar syndrome

Answer 5: Chediak-Higashi Syndrome

147. WHAT IS THE MAIN GROUP OF DRUGS USED TO TREAT SEVERE COMBINED IMMUNODEFICIENCY (CVID)?

Answer 1: intravenous immunoglobulins

Answer 2: bone marrow transplant

Answer 3: antibacterial drugs

Answer 4: monoclonal antibodies

Answer 5: Thymus epithelial tissue transplantation

148. WHAT PID IS MANIFESTED BY HYPOPLASIA OF THE THYMUS, LYMPH NODES, TELANGIECTASIA, ATAXIA?

Answer 1: selective IgA deficiency

Answer 2: IgE hyperimmunoglobulemia syndrome

Answer 3: Louis Bar syndrome

Answer 4: Wiskott-Aldrich syndrome

Answer 5: chronic granulomatous disease

149. WHAT PID IS COMBINED T- AND B-CELL IMMUNODEFICIENCY IN ADULTS?

Answer 1: Good's Syndrome

Answer 2: DiGeorge Syndrome

Answer 3: Bruton's disease

Answer 4: Louis Bar Syndrom

Answer 5: Chronic granulomatous disease

150. WHAT PID IS PRIMARY IMMUNODEFICIENCY WITH A DEFECT IN PHAGOCYTOSIS?

Answer 1: Good's syndrome

Answer 2: DiGeorge Syndrome

Answer 3: Bruton's disease

Answer 4: Louis Bar syndrome

Answer 5: chronic granulomatous disease