1. We got an agglutinating serum after immunization of the rabbit with bacteria, which have antigen structure 1, 3, 4. How can we get monoreceptor serum against antigen 3, using our serum?
   + By adsorption of agglutinins by antigens 1, 4
   By precipitation reaction
   By neutralization reaction
   By immobilization reaction
   By opsonization reaction

2. New material for heart valves replacement found. How can we find out if this material is antigenic?
   + We should immunize laboratory animals
   Put agglutination reaction
   Put precipitation reaction
   Put reaction of binding complement
   Put neutralization reaction

3. The medicine which accelerates regenerative processes of the wound of mucosal membrane was prescribed to the patient. The medicine is thermostable protein, which is contained in tears, saliva, breast milk, and as can be found in new-laid chicken eggs. It is a factor of natural organism resistance. What is it?
   Complement
   Interferon
   + Lysozyme
   Interleukin
   Imanin

4. What is the chemical nature of endotoxin?
   Protein
   Lipid
   Peptidoglycane
   Cytoplasmic membrane
   + Lipopolysaccharide

5. What cells perform the main role in clinical manifestation of immediate hypersensitivity?
   + B-lymphocytes
   T-suppressors
   T-helpers
   T\_HT
   T-killers

6. What class of immunoglobulins is concerned with atopic allergic reactions?
   Ig G
   Ig M
   Ig A
   + Ig E
   Ig D

7. What is exotoxin by chemical nature?
   Lipopolysaccharide
   Lipid
   + Protein
   Peptidoglycane
   Cytoplasmic membrane

8. What answer characterizes artificial passive immunity?
   Immunization with BCG
   Immunization with tetanus anatoxin
   Placental transplantation of antibodies to the fetus
   Formation of antibodies in result of cholera convalescence
   + Injection of antitetanus serum

9. Piece of donor skin was transplanted to the patient who had large burn. In 4-5 days the piece of skin had engrafted, but on the 8\textsuperscript{th} day the transplant swelled, its color changed and on the 11\textsuperscript{th} day it started to reject. What cells played role in rejection of transplant?
Erythrocytes
Basophiles
Eosinophils
+ T-lymphocytes
B-lymphocytes

10. For the treatment of pneumonia 5 years old child was injected with penicillin. In 40 minutes child had urticaria on its body, it started to itch. What is the mechanism of allergy?
Cytotoxic reaction
Arthus reaction
Cell immune response
+ Anaphylactic reaction

11. Seller sold sausage, named “Pork sausage”. Buyer suspected that the sausage was made of horse. What reaction can be used to identify the product?
+ Precipitation reaction
CFT
Agglutination reaction
Immunofluorescence
PIHAT (reaction of indirect hemagglutination)

12. At the estimation of the immune status of the patient with chronic pyoderma the decrease of absorptive and digestive function of phagocytes, neutrophiles and monocytes was established. What medicine should be prescribed for recovering of functions of these cells?
Lysozyme
Antibiotic
Glucocorticoids
+ Interferon
Thymus hormones

13. Artificial active immunity is obtained after injection of:
Serum
+ Vaccine
Anatoxin
Antibiotics
Immunoglobulin

14. T-lymphocyte produces:
Interleukin-1
Immunoglobulin
Alpha-interferon
Beta-interferon
+ Interleukin-2

15. Resistance to infection during 2 weeks is obtained after:
Having illness
Injection of inactivated vaccine
Injection of homologous immune serum
+ Injection of heterologous immune serum
Injection of attenuated vaccine

16. Recidive is:
Re-infection with the same causative agent after the recover
Addition of infection, caused by conditionally pathogenic microflora
+ Illness, which is caused by the agent, which is left in the organism
Infection by the few agents at the same time
Illness, which is typical for the location

17. What class of immunoglobulins play role in natural passive immunity?
Ig A
+ Ig G
Ig M
Ig D
Ig E
18. Specific immune cell response is provided mainly by:
Phagocytes
+ T-lymphocytes
Complement
Immunoglobulin
Natural killers
19. What enzymes, which are produced by microorganisms, provide invasion and spread of bacteria in tissues?
DNA-ase, penicillinase
Cystinase, urease
Collagenase, coagulase
Hemolysin, leukocydin
+ Hyaluronidase, neuraminidase
20. When antigen invades into the organism, it reacts by the synthesis of antibodies. What class of immunoglobulins passes through the placenta and provides the development of natural passive immunity of the newborn?
Ig A
+ Ig G
Ig M
Ig D
Ig E
21. Some classes of immunoglobulins are able to activate components of complement. What are the classes?
Ig A, Ig G
Ig D, Ig A
Ig M, Ig E
+ Ig M, Ig G
Ig E, Ig D
22. Synthesis of antibodies takes a great place in the immune response of the organism. What kind of cell interaction is necessary for its synthesis?
Macrophages, T-helpers, B-lymphocytes
Dendrite cells, T-helpers, B-lymphocytes
Macrophages, T-effectors, B-lymphocytes
+ Antigen presentating cells, T-helpers, B-lymphocytes
Langerhans cells, T-effectors, B-lymphocytes
23. What are the quantitative methods of definition of T-lymphocytes?
Lysozyme
Antibodies
BTLR on PHA
+ E-PFC
BTLR on LPS
24. What are the methods of qualitative estimation of T-lymphocytes activity?
BTLR on LPS
+BTLR on PHA
Antibodies
Lysozyme
M-RFC
25. What are the quantitative methods of definition of B-lymphocytes?
+M-RFC
E-RFC
BTLR on LPS
BTLR on PHA
Immunoglobulins of main classes
26. What are the qualitative methods of definition of B-lymphocytes?
E-RFC
BTLR on LPS
BTLR on PHA
+Immunoglobulins of main classes
M-RFC

27. What are the methods of estimation of adsorptive activity of phagocytes?
+Phagocytory index
E-RFC
M-RFC
Lysozyme
EAC-RFC

28. What are the methods of estimation of metabolic activity of the cell?
+ NBT-test (test with nitro blue tetrasolium)
Skin tests
BTLR on PHA
BTLR on LPS
Lysozyme

29. What are killer-cells?
Mastocytes
Basophils
Thrombocytes
+ NK-cells
Erythrocytes

30. What cells belong to mononuclear phagocytes?
Neutrophils
Erythrocytes
Thrombocytes
Lymphocytes
+Macrophages

31. What cells do not belong to immunocompetent?
Lymphocytes
Monocytes
+ Plasmatic cells
Organ fixed macrophages
B- lymphocytes

32. Plasmatic cells synthesize specific antibodies for the specific antigen. The quantity of plasmatic cells increases after the injection of the antigen. What blood cells provide the increase of plasmatic cells quantity?
Monocytes
Eosinophils
Basophils
T-lymphocytes
+ B-lymphocytes

33. There are 5 classes of immunoglobulins in blood: A, E, D, M, G. Which class of immunoglobulins have the highest concentration?
Ig A
+ Ig G
Ig M
Ig D
Ig E

34. The vaccination of a child results in reaction of humoral immune response. What are the main cells of spleen, which participate immune response?
T-lymphocytes-killers, T-helper
T-lymphocytes-suppressors, T-helper, macrophages
B-lymphocytes
+ Macrophages, T-helper, B-lymphocytes

35. Bacteriologist picked out stock, which he partially identified by morphological, tinctorial, cultural and biochemical properties. For the final identification he used adsorbed agglutinating type-specific serum. What agglutinative reaction did the bacteriologist put for the final agent identification?
36. In 24 hours after painting eye-lashes with water-proof mascara with ursol young lady had hyperemia, edema, itch of the skin of eyelids. Anamnesis showed that she was using only this mascara for 2 years. Doctor put diagnosis “allergic contact dermatitis”. What type of reaction does this pathology belong to?
- Immediate type hypersensitivity
- Delayed type hypersensitivity
- Immunocompetent allergic reaction
- Atopic allergic reaction
- Cytopathic allergic reaction

37. What is the central organ of the immune system?
- Spleen
- Thymus
- Lymphatic nodes
- Palatine tonsil
- Appendix

38. Patient passed a course of medical treatment with cyclosporine after the kidney transplantation. The treatment resulted in generalized candidosis. Laboratory examination showed: Leukocyte amount in peripheral blood – 10^9 g/l, relative T-lymphocyte content – 38%, B-lymphocytes- 11%. After recovery the patient started having diarrhea, caused by E. coli. Further patient had frequent relapses of herpes, frequent acute respiratory illnesses. Skin allergic tuberculin test is negative, the amount of gamma-globulin in blood is twice decreased. What can we suspect?
- Congenital T-cell immunodeficiency
- Hypogammaglobulinemia
- Agammaglobulinemia
- Congenital combined (total) immunodeficiency
- Acquired immunodeficiency

39. In most of cases newborns are immune against “infant” infections (measles, pertussis, scarlet fever). What class of immunoglobulins can pass through placenta and provide natural passive immunity?
- Ig M
- Ig G
- Ig E
- Ig A
- Ig D

40. Serological laboratory informed about presence of standard diagnostic antigens. What for should doctor send serums for the examination to the laboratory?
- For putting RBC for determination of antibodies
- For refinement of diagnosis of infectious disease in first das of illness
- For refinement of diagnosis after the results of tests of definition of specific antibodies
- For the estimation of immune status by the antibodies level
- For the differentials diagnostics of infectious and allergic states.

41. Patient has clinical manifestation of allergic reaction. The level of Ig E in his blood is increased in 4 times. What preparation can we use for a treating purpose?
- Immunomodulators, which have effect on cell immunity
- Medicine, which increases phagocytosis of bacterial antigenes
- Immunodepressors, which decreases the level of T-lymphocytes
- Medicine, which stabilizes the membrane of tissue basophils
- Adsorbents of immune complexes

42. Patient has undefined diagnosis. Immunoogical examination showed the increased level of Ig A. What can this feature of humoral immune response say?
- Destructive processes in the organism
- Chronic bacterial infection
- Autoimmune sickness
Acute bacterial infection
+ Pathological process, which runs on the mucosal membrane

43. The main role in pathogenesis of some infections have protein toxins. What is the specificity of its action?
The mitochondria blockage
The increased permeability of internal organs cell membranes
+ Selective fixation of the toxin on the receptors of cells
Disfunction of DNA synthesis
The abilityy to destroy cell membranes

44. Septicemia – is the stage of the infectious disease, when microorganism is:
Secreted with bile
Can be found in lymph
Is transported by the blood
+ Multiplies in blood
Excreted with defecation

45. What component of the bacteria can induce endotoxic shock?
Capsule polysaccharide
H-antigen
rRNA
Lecytinase
+ Lipid A

46. Essentially in allergy of anaphylactic type is the formation of immune complexes on:
Endotheliocytes
Eosinophils
Thrombocytes
+ Tissue basophils
Macrophages

47. The result of immunological examination showed hypogammaglobulinemia. What cells of immune system produce immunoglobulins?
CD8*-cells
Plasmoblasts
CD4*-cells
+ Plasmocytes
NK-cells

48. There are different disfunctions of B-lymphocytes system in immunodeficiency. What is the main link in pathogenesis of it?
+ Disorder in antibody synthesis
The decrease of delayed type hypersensitivity
Disfunction of immunological reactions of cell type
The decrease of antitumoral immunity
Transplant rejection ability loss

49. Worker, who is working at the chemical factory for 15 years has contact dermatitis (hyperemia, skin rash, puffiness) of upper limbs, neck and face. What group does this illness belong to?
Immediate type allergic reaction
B-system immunodeficiency
+ Delayed type allergic reaction
Late gammaglobulinemia
T-system immunodeficiency

50. There are 5 classes of immunoglobulins in blood. One of it has the largest amount – 8 to 16 g/l. Insufficient synthesis of it shows clinical signs of immunodeficiency. What class of mmunoglobulins is this?
Ig D
Ig E
Ig A
+ Ig G
Ig M
51. Rejection of organ occurred after kidney transplantation. It was established that rejection was caused by the reaction of specific immunity. What was the direct factor of the rejection?

- T-lymphocytes-helpers
- + T-lymphocytes-cytotoxic
- Monocytes
- B-lymphocytes
- T-lymphocytes-suppressors

52. A child, who was recovered from measles, has pleuropneumonia, which is caused by conditionally pathogenic S. epidermidis. What is the form of infection?

- + Secondary infection
- Superinfection
- Re-infection
- Persisting infection
- Hospital infection

53. Vaccines are used for making active immunity. What medicine is live attenuated bacteria?

- TAB vaccine
- APDT vaccine
- Solk’s vaccine
- +BCG vaccine
- Anti hepatitis A vaccine

54. 5 years old child has Butons disease, which manifests in severe clinical course of bacterial infections, absence of B-lymphocytes and plasmatic cells. What changes in immunoglobulin content in blood will be typical for this illness?

- Increase of Ig D, Ig E
- Decrease of Ig D, Ig E
- Increase of Ig A, Ig M
- + Decrease of Ig A, Ig M
- No changes

1. Immunoglobulins play the main role in humoral immune response. Choose the correct statement for Ig A.

- + Only Ig G has higher concentration
- Has the highest concentration over all immunoglobulins classes
- Has the largest molecule in comparing to other immunoglobulin classes
- It can be produces in low concentrations in digestive tract, respiratory and urogenital ways
- Its concentration in serum is low

2. What classes of immunoglobulins will start to synthesize at the same time after the agent invasion, so that concentration of one of it will rise first, then it will rapidly decrease?

- + Ig M and Ig G
- Ig M and Ig D
- Ig G and Ig D
- Ig A and Ig D
- Ig A and Ig G

3. Ig E plays the main role in anaphylactic and atopic reactions. What are the features of it?

- + Low concentration in blood serum
- It is localized in skin
- Activates complement system
- High concentration in blood serum
- Passes through placenta

4. Anaphylatoxins are important in the development of inflammatory process. Name the anaphylatoxins:

- + Complement substances (C3a, C5a)
- Substances, which induce anaphylatoxy
- Toxins of vegetable nature
- Substances, which are secreted by mastocytes
- Interleukins 1, 4, 10

5. What plays the main role in delayed type hypersensitivity mechanism?

- + T helpers 1 and lymphokins
B-lymphocytes and NK-cells
Basophils and mastocytes
Macrophages and B-lymphocytes
Histamine and serotonin

6. Rejection of transplant develops after the transplantation of isotransplant. Name the main pathogenic factors of rejection reaction:
+ T-helper 1, lymphokins, antibodies
B-lymphocytes, antibodies, NK-cells
T-helpers 2, T-effectors, macrophages
T-effectors, complement, antibodies
Macrophages, microphages, NK-cells

7. Pathogenesis of serum sickness, systemic lupus erythematosus, autoimmune processes is connected with the formation of immune complexes — allergic reactions of III type. Long-term persistence of immune complexes in the organism may cause;
+ Complement system activation by classic way
Complement system activation by alternate way
Phagocytosis system activation
Coagulative system activation
Interferon system activation

8. Patient has alimentary pseudoallergic reaction. Name the main features of pseudoallergy.
+ Absence of changes in immunoregulatory cells system
Increase of immunoregulatory index
Decrease of immunoregulatory index
Parallel decrease of T-helpers and T-suppressors
Parallel increase of T-helpers and T-suppressors

9. Patient should do skin tests with standard allergens. The usage of what medicine should be stopped to obtain accurate results?
+ Glucocorticoids, antihistamine preparations
Antibiotics
Sympathomimetics
Hypotensive drugs
Non-steroid antiinflammatory drugs

10. 10 years old patient has helminthic invasion. What class of immunoglobulins dominates?
+ Ig E, Ig M
Ig M, Ig G
Ig A, Ig D
Ig A, Ig M
Ig G, Ig A

11. Patient has autoimmune thyreoiditis. What immunological test should be performed to confirm the diagnosis?
+ Definition of antibodies for thyreoid and microsomal antigen of thyreoid gland
Definition of antibodies for DNA
Definition of antibodies for RNA
Definition of antibodies for antigens of salivary and thyreoid gland
Definition of antibodies for erythrocytes and thrombocytes

12. What mechanism of immunological damage is typical for the reaction, which is induced by Ig E?
+ Release of mediators of the immediate reaction
Fixation of the antigen on the cellular membrane
Activative effect of immune complexes on complement components
Lymphokin effect on target-cells
Antigen-antibody reaction with further agglutination

13. 60 years old patient has Hudpascher’s syndrome. What antigen caused immune response?
+ Collagen of basis membrane of kidneys glomerules
Fc fragment of Ig G
Duplex DNA
Parietal cells of stomach
14. *Inherited angioneurotical edema as the most severe clinical manifestation of dysfunction of complement system is connected with insufficiency of:*  
+ Inhibitor C1  
Complement component C2  
Complement component C4  
Complement component C3  
Complement component C5  

15. *Patient has local allergic reaction in few minutes after bee sting. What type of allergic reaction was described?*  
+ Anaphylactic  
Cytotoxic  
Immune complexes  
Delayed-type  
Idiotype-antidiotype  

16. *Patients serum contains increased quantity of complement fractions. What illnesses is it typical for?*  
+ Thyreoiditis, rheumatoid arthritis  
Systematic lupus erythematosus with kidney damage  
Combined immunodeficiency  
Primary immunodeficiency  
Secondary immunodeficiency  

17. *Patient has disfunction of cell immunity, decrease of T-cells function, ability to develop delayed type hypersensitivity reaction is absent. What type of immune insufficiency takes place?*  
+ Combined immunodeficiency  
Cell link of immunity is insufficient  
Humoral link of immunity is insufficient  
Complement system insufficiency  
Phagocytosis insufficiency  

18. *A man, who lived in endemic region was ill with 3-day malaria. After moving to other place in 1,5 year, he was ill with malaria again. What form of the infection is it?*  
+ Recurrence  
Re-infection  
Persistant infection  
Secondary infection  

19. *2 years old child is ill with chronic often reversive pneumonia and colitis with severe diarrhea. He has decreased level of immunoglobulins of all classes. The amount of lymphocytes in peripheral blood is less than 1000 in 1 ml. Tuberculin test is negative. What is the diagnosis?*  
+ Primary immunodeficiency with defect of T and B lymphocytes  
Primary immunodeficiency with defect of B-lymphocytes  
Primary immunodeficiency with defect of T-lymphocytes  
HIV-infection  
Epstein-Barr infection  

20. *1 year old child has agammaglobulinemia “swiss type”, accompanied by the absense of cell immune reactions. What treatment is used to prolongate his life?*  
+ Thymus and sternum transplantation from the born dead child  
Constant injections of immunoglobulins from donor.  
Treatment with recombinant interleukin 2  
Transplantation of parent’s dendrite cells with previous injections of antibodies for antigens of histocompatibility of the patient  
Thymus transplantation  

21. *What type of immunodepressive therapy contradicts to the restoration of immune reactivity of the patient after cessation of therapy?*  
+ Injection of corticosteroids and antilymphocytic serum  
Injection of metabolites of purine, pyrimidine and protein synthesis of imuran or methotrexate type  
Alkylating agents, cyclophosphamide type
22. Patient, who got a course of penicillin therapy, has a decrease amount of erythrocytes – anemia. Doctor put diagnosis “drug allergy for penicillin”. What type of allergic reaction was shown?
+ Complement cytolysis
Immune complexes reaction
Atopy
Antibody cytolysis
Delayed type hypersensitivity

23. Nurse took blood from the patient to put immunologic reaction of Coomb’s. What is this reaction used for?
+ Hemolytic disease
Ulcer
Hypertension
Gout
Spinal osteochondrosis

24. The assessment of functional state of lymphocytes is a necessary condition for estimation of patient’s immune status. What method can display immune status?
+ All methods
Leukocytes migration inhibition reaction
Lymphocytes blasttransformation reaction
Lymphocytes cytotoxic activity reaction
Phagocytory activity index

25. Patient has clinical signs of immunodeficient state by cellular type. After examination doctor put diagnosis - lymphogranulomatosis, Hodgkin’s disease. Name main symptoms of the disease:
+ Structure disorder of lymphatic nodes with predomination of T-lymphocytes
Specific early symptoms
Infectious complications are not typical
Generalized beginning
Large amount of B-lymphocytes in blood serum

26. Monoclonal antibodies are widely used in immunological diagnostics. What is the purpose?
+ Diagnostics of specific antigenes
For the treatment of infectious diseases
For the prophylaxis of infectious diseases
For obtaining non-specific serums
For hybrid stabilization

27. What method is used for the quantitative definition and correlation of different types of lymphocytes?
+ Reactions with the usage of monogeneous antibodies
Reactions of T-lymphocytes blasttransformation
Reactions of B-lymphocytes blasttransformation
Cytotoxic activity of lymphocytes
Immunoblotting

28. Young woman has contact dermatitis after the usage of washing powder. What methods did doctor use for the definition of allergy cause?
+BTLR (lymphocytes blasttransformation reaction) with the specific allergen
Definition of Ig G, M, A in blood serum
Definition of Ig E in blood serum
E-RFC reaction
Definition of phagocytory activity and phagocytory index

29. Patient has malignant stomach tumor. Blood test showed decrease of relative quantity of T-lymphocytes in peripheral blood. What does it testify?
+ Disorder of T-cell link of immunity
Virus reproduction in neurons, microglial cells of the brain
Virus persistance
Hypogammaglobuliemia
Immediate type hypersensitivity reaction disorder
30. Complex antigen+antibody+complement was formed in result of binding complement reaction. What component should we use to detect the formation of this complex?
+ Hemolytic system
Hemolytic serum
Diagnosticum
Antitoxic serum
Physiological solution

31. You have: 1) brucellar skin vaccine. 2) leptospirosis vaccine. 3) BCG vaccine. 4) APDT vaccine. 5) adsorbed tetanus anatoxin. What immunity do these preparations provide?
+ Artificial active immunity
Infection immunity
Antibacterial immunity
Artificial passive immunity
Antitoxic immunity

32. Patient often has respiratory opportunistic diseases. Examination of saliva showed a disorder of specific link of local immunity. Lack of what component was established?
+ Secretory immunoglobulins class A (sIg A)
Lysozyme
Immunoglobulins class E (Ig E)
Interferon γ (γ-IFN)
Complement

33. Results of immunological examination of the newborn: the percentage of rosettes in the reaction of specific rosette-formation – 25%, blasttransformation reaction with phytohemagglutinin – 0%, blasttransformation reaction with pokeweed mitogen – 40%, concentration of immunoglobulins in serum insignificantly decreased. What organ of immune system does not functioning?
+ Thymus
Spleen
Liver
Marrow
Tonsils

34. There is a decrease of absolute and relative quantity of circulative CD4⁺-lymphocytes in patient’s blood. What examination gave these statements?
+ Reaction with marked homogeneous antibodies
Reaction of rosette formation with sheep erythrocytes
Opsonization reaction
Reaction of blasttransformation with phytohemagglutinin
Reaction of blasttransformation with lipopolysaccharide

35. Sensibilization of the organism by the allergen of poplar wool was established to the patient with bronchial asthma. What factor of immune system plays the main role in the development of these immunopathological state?
+ Ig E
Ig D
Ig M
Sensitized T-lymphocytes
Ig G

36. Young nurse complains on reddening and swelling of skin on hands, which appair in 1-2 days after contacting with analgin solution after performing injections to the patients. Pathological changes appair only in places of contact with injectible solution. What factor of immune system plays the main role in the development of this immunopathological state?
+ Sensitized T-lymphocytes
Ig E
Ig D
Ig G
Ig M

37. Patient with chronic renal insuficiency was recommended to perform kidney transplantation. He is expecting for the transplant organ now. What antigens should be donor organ checked for?
HLA system antigens
Rh system antigens
HBs, HBc, Hbe antigens
ABO system antigens
O-, H-, K- antigens

38. Doctor suspected that the child have congenital disfunction of immune system. Immunological examination showed considerable decrease level of cells, which form rosettes with sheep’s erythrocytes. **Disfunction of the immune system is conditioned by:**
+ Decrease level of T-lymphocytes
Decrease level of B-lymphocytes
Decrease level of natural killers
Decrease level of phagocytes
Decrease level of cells which produce antibodies

39. Doctor suspected that the child have congenital agammaglobulinemia. It is necessary to examine the level of immunoglobulins in blood serum. It should be considered that the synthesis of these immunoglobulins begins:
+ On 3rd month
On 5-6 month
On 2nd week
Immediately after birth
In antenatal period

40. Patient is suspected to be ill with infectious disease. Blood test showed that blood contains antibodies to the probable antigen, but their titer is not enough to confirm the diagnosis. What will be the correct decision of the doctor?
+ Repeat the titer definition in 10 days
Preliminary diagnosis is not confirmed
Use more sensitive reaction
Put serological test with other antigens
Check for possible technical mistakes, which can occur during the test

41. Patient was passing through desintoxicative therapy. He was injected with drug-blood substitute for repeated times. On 8th day after the last drug injection the patient started to have skin rash, high temperature, proteinuria. What is the main mechanism of development of these symptoms?
+ Formation of immune complexes
Allergic reaction type I
Cytotoxic reactions
Hypersensitivity, which is caused by T-lymphocytes
Atopic reactions

42. What refers to cell factors of immune (specific) protection?
+ Cytotoxic T-lymphocytes
Macrophages
Interferon
Natural killers
B-lymphocytes

43. What is hapten?
+ Defective antigen
Molecules, which induce synthesis of immunoglobulins
Substances, which cause allergic reactions by the type of HDT
Substances, which activate phagocytosis
Cells, which synthesize interferon

44. What features of immunoglobulins define the opportunity of creation of antiidiotypical vaccines?
+ Immunogenicity – the ability to induce antibody synthesis
Allergic properties
Specific connection with specific antigens
The ability to neutralize specific antigens
Opsonizing properties

45. Antigens of histocompatibility complex of I class are represented on the surface of:
+ All nucleus-containing cells
Macrophages and B-lymphocytes
Erythroblasts
T-helpers
Cells of the embryonal liver

1. **Patient has clinical manifestation of the primary immunodeficiency.** Doctor established a disfunction of antigen presentation to immunocompetent cells. The quantity of T- and B- lymphocytes and their functional activity are not changed. Disfunction of which cells was the reason of the primary immunodeficiency?
   + Macrophages and monocytes
   T-lymphocytes, B-lymphocytes
   NK-cells
   Fibroblasts, T-lymphocytes, B-lymphocytes
   T-lymphocytes

2. **Patient complains on frequent infections, including fungous.** Doctor suspected immunodeficiency and sent him for immunological examination. On electrophoresis was established that level and correlation of antibodies are almost normal. What examination should the patient do to define the quantity of T-lymphocytes?
   + E-RFC
   M-RFC
   EAC-RFC
   BTLR on PHA
   BTLR on LPS

3. **29 years old patient has secondary immunodeficiency by T-cell type.** Immunologic examination showed that the quantity of T-lymphocytes is normal. What test was used for the estimation of functional activity of T-lymphocytes?
   + BTLR on PHA
   BTLR on LPS
   E-RFC
   M-RFC
   EAC-RFC

4. **Annually patient complains on conjunctivitis, frequent asthma attacks on the blooming period.** Basically the disbalance of T-helpers fractions play the great role in genesis of reagin-type allergy. What is the variety of T-helper lymphocytes?
   + T-lymphocytes 0, 1, 2, 3
   T-lymphocytes 1, 2, 3, 4
   T-lymphocytes 1, 2, 3, 4, 5
   T-lymphocytes 1, 2
   T-lymphocytes 1, 2, 3

5. **22 years old patient complains on periodic infectious illnesses of bacterial genesis.** Their active period is long and remissions are short. Examination showed hypogammaglobulinemia. Disfunction of what cells was the cause of this illness?
   + Plasmatic cells
   Phagocytes
   Neutrophils
   Macrophages
   Microphages

6. **Patient has atopic dermatitis.** What can be the causative allergen?
   + Antigen, hapten
   Hapten, half-hapten
   Different inorganic substances
   Hapten
   Antigen

7. **Patient has acquired defect of immune system – disorder of complement system activation by the classic way in condition of enough components of complement system content.** Doctor suspected disorder in antibodies formation. Which class of immunoglobulins will decrease its level first of all?
8. Patient complains on periodical asthma attacks after inhaling different aromatic substances, contact with home dust and animal wool. Doctor put diagnosis “atopic bronchial asthma”. Examination showed increased level of Ig E. What type of reaction is described?
+ Allergic reaction
Secondary immune response
Primary immune response
Reaction of binding complement
Reaction of bacteria neutralization

9. 24 years old patient after second contact with antigen – flower pollen started to complain on clinical manifestation of bronchial asthma. One of the methods of treatment of this pathology is the usage of antagonists for mediators of mastocytes. What mediators of mastocytes are the target for the treatment?
+ Vasoactive amines, proteoglycans, cytokines, lipid mediators
Chemokines, enzymes
Toxic proteins
Chemokines, toxic proteins, cytokines
Lipid mediators, chemokines, enzymes

10. Patient was taking antimicrobial drugs for a long time. Examination of vaginal bacterial content and pH examination showed the absense of lactobacteria and alkaline media. What should be prescribed to the patient to recover the normal vaginal microflora?
+ Lactacid bacteria
Suppository with antibiotics
Sodium permanganate solution
Sulfanilamides
Suppository with antiseptics

11. Patient with oncological pathology lost almost all of the large intestine in operation. What medicine can compensate functions of large intestine microflora?
+ Vitamins
Antistaphylococcal plasma
Polyvalent bacteriophage
Antibiotics
Sulfanilamides

12. 7 years old child is frequently ill with respiratory and intestinal illnesses. What cells provide non-specific organism protection against infections?
+ Macrophages, neutrophils, natural killers
Macrophages, T-lymphocytes
Macrophages, B-lymphocytes
T-helpers, T-killers
T-lymphocytes, B-lymphocytes

13. Patient after antibiotic therapy started to complain on intestinal dysbacteriosis. What medicine should be prescribed to recover the normal microflora of the intestine?
+ Eubiotics
Sulfanilamides
Interferon
Antifungal preparations
Cephalosporins

3 years old child has petechial rash after taking paracetamol. After examination and laboratory tests doctor put diagnosis "thrombocytopenic purpura". What immunopathologic mechanism is described?
+ Cytotoxic reactions, conditioned by antibodies and complement
Anaphylactic reaction
Hypersensetivity of delayed type
Immunocomplex reactions
14. **Bacteria is adsorbed by macrophage. What is the role of macrophages in cooperation with immunocompetent cells in formation of immune response?**

+ Provide processing and presentation of the antigen to T-helpers

Activate T-killers

Activate B-lymphocytes

Produce immunoglobulins

Provide processing and presentation of the antigen to T-killers

15. **Liquidator of the consequences of Chernobyl AES, who got a large dose of radiation did the transplantation of marrow. In some time after operation transplant against host reaction started to develop. What antigens were the triggers to this reaction?**

+ Antigens of HLA cells system of the liquidator organism

Antigens of Rh system of the liquidator erythrocytes

HBs, HBe antigens

Antigens of ABO system of the liquidators erythrocytes

Antigens of HLA cells system of the donors marrow

16. **In the estimation of immune status the decrease of the cells, which form rosettes with sheep erythrocytes. How should we estimate examination results?**

+ Decrease of T-lymphocytes level

Decrease of B-lymphocytes level

Total defect of immunity system

Depression of marrow function

Congenital thymus defect

17. **Doctor examined patient’s blood serum with reaction of binding complement for the serological diagnostics of ornithosis. Due to apparatus malfunction, the examined serum was not enough warmed up and complement of patients blood serum did not inactivate. The reaction result is negative (hemolysis of erythrocytes). Why the serum examination should be repeated?**

+ Complement excess in blood serum caused hemolysis

Decreased antibodies titre due to complement activity

Complement of blood serum blocked an antigen

Complement of blood serum blocked reaction

Complement binding did not occur

18. **What is the main function of γ-interferon?**

+ Immunomodulating

Antivirus

Antiprotosoal

Antiproliferative

Antibacterial

19. **Immune diagnostic serums are used for:**

+ Serologic identification

Treatment of viral infections

Serologic diagnostics

Antitoxic therapy

Septicemia prophylaxis

20. **Local immunity is defined by the presence of:**

+ Ig A

Ig M

Ig E

Ig D

Ig G

21. **What can be used for treatment of some bacterial infections?**

+ Autovaccines

Chemical vaccines

Anatoxines

Attenuated vaccines

Inactivated vaccines
22. Complement system plays an important role in the protection system of the organism from heterogenous agents. What is the final link in complement system activation?
+ C9
Properdin
Cascade reaction
C3
Membrane-attacking complex

23. The frequency of some illnesses of human is associated with the determined histocompatibility antigens. What is the antigen, which is the most frequently associated with the inclination of the individual to the determined illness?
+ HLA-DR
ABO
HLA-B
Rh+
HLA-A

24. Newborn has symptoms of hemolytic disease. In which case this pathology will manifest?
+ Mother (Rh-), fetus (Rh+)
Mother (Rh+), fetus (Rh-)
Mother (0), fetus (AB)
Mother (AB), fetus (0)
Mother (Rh+), fetus (Rh-)

25. Immunocompetent cells play the most important role in immune protection of the organism. What is typical for B-lymphocytes?
+ B-lymphocytes differentiate into antibody-producing cells
B-lymphocytes differentiae and study in thymus
The source of B-lymphocytes is the lymphoid tissue of the intestine
B-lymphocytes provide cell immunity
B-lymphocytes differentiates into neutrophils

26. The worker of galvanic shop, who worked with nickel for a long term has contact dermatitis. What is the cause of allergic contact dermatitis?
+ Sensitized T-lymphocytes
Ig G
Basophils and mastocytes
Ig E
Sensitized macrophages

27. Antibodies have an important role in immunity, which interacts with antigen. What site of immunoglobulin molecule interacts with antigen determinant?
+ Variable sites of H- and L- chains
Articulated site
H-chain
Contact sites of H- and L- chains
L-chain

28. Immunocompetent cells play the most important role in immune protection of the organism. What is typical for T-lymphocytes?
+ T-lymphocytes provide cell immunity
T-lymphocytes differentiae into plasmocytes
The source of T-lymphocytes is the lymphoid tissue of the intestine
T-lymphocytes differentiates into macrophages
T-lymphocytes differentiae into neutrophils

29. In case of long term persistance of the antigen in the organism, histotoxic imunocomplex reactions develop. Their symptoms caused by:
+ Inflammation
Histamine
Autoantigen
Autoantibodies
30. Patient was suffering from allergic rhinitis for a long period. Using specific allergic tests the foundation of the causative allergen succeed. Gradual injection of ascending doses of some substance was used for desensitizing and prevention of the illness. What was the substance?
+ Allergen
Ig E
Antihistamine preparations
Antibodies
Ig G

31. In which reaction complement is used?
+ Hemolysis
Precipitation
Agglutination
Neutralization
Hemagglutination

1. What is the vaccine, that contains microorganisms and inactivated exotoxin and it is used for specific prophylaxy?
+ Associated
Genetically-engineered
Anatoxin
Chemical
Live (attenuated)

In determination of phagocytory activity of leukocytes, in two hours after the experiment, each leukocyte captured 9 microorganisms. In 7 hours there was not more than 5 microorganisms in each leukocyte. What is the phagocytory number of leukocytes?
+ 9
7
6
2
1,3

Secretions of many of human’s glands contain antibacterial substance – lysozyme. Which structure of the bacterial cell does it lysate?
+ Peptidoglycane
Lipopolysaccharide
Cytoplasmic membrane
Teuchoic acids
Ribosomes

2. Sensibilization of the organism by the allergen of poplar wool was established to the patient with bronchial asthma. What factor of immune system plays the main role in the development of these immunopathological state?
+ Ig E
Ig D
Ig M
Sensitized T-lymphocytes
Ig G

3. Serological diagnostics showed that blood serum has antibodies to the determined pathogene. In what case the estimated result will be enough to put the diagnosis?
+ If antibodies were found in diagnostic titre
The definition of antibodies has diagnostical value independently of titre
If antibodies were found in titre, which is higher than diagnostical
The definition of antibodies does not have diagnostical value anyway
It is not possible to put a reliable diagnosis only after serological examination

4. As usual the repeated serological examination is performed for showing up the increase of antibodies titre in dynamics. The examination only of the serum test is enough if the antibodies to the pathogene are:
+ Ig M
Ig G
It is not possible to put a reliable diagnosis only after serological examination. **Doctor suspected congenital toxoplasmosis. The determination of specific antibodies in the umbilical blood was performed by enzyme immunoassay. Which class of immunoglobulins will confirm the antenatal infection?**

+ Ig M  
+ Ig A  
+ Ig G  
+ Ig D  
+ Ig E

5. **Medical examination found painless ulcer with dense margins on the mucosal membrane of the cheek. What express method can confirm the diagnosis?**

+ DRIF  
+ The microscopy of the smear, which is taken from the fauces and dyed by Romanovsky  
+ Reaction of agglutination on glass of the material from the ulcer with antiserum  
+ The cultivation of the ulcer exudation on the chicken embryo  
+ Reaction of binding complement

**Pediatrician put diagnosis “atopic dermatitis”. As mother was saying, the child has alimentary allergy “to everything”. Laboratory tests, which will be used for finding out the causative agent, should include:**

+ The definition of the total amount of Ig E and the amount of specific Ig E  
+ The definition of the HLA phenotype of the child  
+ The definition of the interleukin level  
+ The definition of T-lymphocytes amount  
+ The definition of B-lymphocytes amount

**After the repeated injection of medical serum the patient started to complain on anxiety, breathlessness, loss of consciousness, the decrease of blood pressure and temperature. What type of allergic reaction is described?**

+ Immunocomplex  
+ Anaphylaxis  
+ Cytotoxic  
+ Cellular  
+ Combined

**Specific homogeneous antibodies are used for treatment and diagnostics of infectious diseases. What cells produce homogeneous antibodies?**

+ Hybridomas  
+ Plasmocytes  
+ B-lymphocytes  
+ T-lymphocytes  
+ B-cells of immunological memory

**Tensed and prolonged is the artificial active imunity, which is acquired by the injection of vaccine:**

+ Of living microorganisms with low virulence  
+ Of killed microorganisms  
+ Of separate antigens of microbe cells (O- or K- antigenes)  
+ Chemical  
+ Genetic-engineered

**Gastroenterological illnesses are often accompanied by dysbacteriosis. What bacteria will not be present in bacteriological analysis of faeces on dysbacteriosis?**

+ Corynebacterium sp.  
+ Escherichia coli  
+ Bifidobacterium sp.  
+ Lactobacterium sp.  
+ Enterococcus sp.

A 25 years old woman suffered from an allergy for plant’s pollen. **The treatment was done by the method of organism desensibilization (periodic injection of an allergen in small doses) and it helped patient to recover from the allergy. What was the mechanism of allergy reaction inhibition?**
+ The accumulation of T-suppressors and Ig G
Inactivation of basophils
Blockade of cell receptors to histamine and heparin
The formation of immune complexes
The decrease of complement concentration in blood serum

8 month old child has a dysfunction of intestine. High quality and quantitative analysis of the intestinal microflora allowed doctor to diagnose dysbacteriosis. Coli-proteus bacteriophage was prescribed for the treatment. What is the mechanism of drug action?
+ Causes the lysis of conditioned-pathogenic enterobacteria
It supports bifidobacteria reproduction
It increases antagonistic activity of lactobaccili
It stimulates synthesis of secretory Ig A
It promotes barrier properties of mucous membrane of intestine

During the first 6 month of life a child have resistance to infectious diseases, which is conditioned by transmission of antibodies from mother to child through placenta and breast milk. What form of acquired immunity does the child have in this age?
+Natural passive immunity
Natural active immunity
Artificial passive immunity
Artificial active immunity
Constitutional immunity

Chicken flu virus can cause massive illness of people in many countries. This case is called:
+Pandemia
Epidemia
Epizootia
Superinfection
Reinfection

What pathogenic factor is specific for the considerable part of gram-negative bacteria and play an important role in illness pathogenesis caused by these microorganisms?
+ Endotoxin
Exotoxin
Invasive factor
Capsule
Hemorrhagic factor

The process of preparation of inactivated (killed) vaccine consists of a few stages. Thus the main role has a selection of vaccine culture. What criterion of the vaccine culture selection is the most important?
+The culture of bacteria should be characterized by the maximal virulence
Bacteria should have finely expressed biochemical characteristics
The cultures of bacteria should have weak pathogenicity
The cultures of bacteria should have weak antigenicity and immugenicity
The cultures of bacteria should be resistant to antibiotics

There were different infections in the anamnesis of the 6 month old patient: there was meningitis, caused by Haemophilus influenzae and pneumocystic pneumonia. What is the cause of immunodeficiency?
+ Stem cells do not differentiate into the precursors of B- and T-lymphocytes
B-cells do not differentiate into plasmocytes
There is no differentiation of CD-8 cells in thymus
The absence of membrane-stabilizing complex of the complement
Neutrophils do not synthesize the enzymes of the oxygen explosion.

At the estimation of immune status the determination of immunoglobulins of different classes is compulsory. What reaction is used for the determination of immunoglobulins of different classes in blood serum?
+ Reaction of radial immunodiffusion by Manchini
Reaction of blasttransformation
Reaction of reverse indirect hemagglutination
Reaction of double immunodiffusion
Polymerase chain reaction
The immunofluorescence reaction is widely used as express method nowadays. What bacteria features does the immunologist define in this reaction?
+ Morphological and antigenic
Morphological and tinctorial
Antigenic and immunogenic
Cultural and antigenic
Cultural and enzymatic

Humoral immunity has an important role in a number of infectious diseases. What activity is typical for antibodies?
+ Phagocytory
Opsonizitory
Complement activation
Neutralization
The actiation of cellular cytotoxicity

11 years old boy has eczematous rash on feet and trunk. He has frequent otitus, pneumonias, furunculosis. The results of laboratory examination: thrombocytopenia, the decrease of T-helpers and T-suppressors activity, the decrease of Ig M titer, but the maintenance of Ig A and Ig G is normal. What immunodeficient disease is diagnosed for the patient?
+ Viskott-Oldridge syndrome
Louis Bar syndrome
Swiss type of immunodeficiency
Di-George syndrome
Chediak-Higashi syndrome

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As the examination of a 2 years old child with heavy small-pox flow, pediatrician marked the defects the defects of face, mongoloid shape of eyes. The child has cramp, proof mycosis of the mucous membrane of mouth, lymphocytopenia at normal maintainance of B-lymphocytes and blood immunoglobulins. What type immunodeficiency syndrome does the child have?
+Di-George syndrome
Klinefelter’s syndrome
Louis Bar syndrome
Turner’s syndrome
Viskott-Oldridge syndrome

Young lady with blood group II (A), who got into the traffic accident was accidently transfused with blood group III (B). A posttransfused reaction started to develop. What type of allergic reaction does posttransfusional reaction belong to?
+Cytotoxic
Anaphylaxy
Immunocomplex
Cellular
Stimulative

The dysbacteriosis which is accompanied by the changes of quantity and quality composition of humans microflora showed be corrected by the usage of preparations, which contain microorganisms of normal microflora. What are the preparations, which contains microorganisms of normal microflora?
+Eubiotics.
Xenobiotics.
Antibiotics.
Vaccines.
Immunomodulators.

Vaccination is performed for the specific prophylaxy of illnesses and the formation of immunity. The cooperation of what immunocompetent cells is necessary for the effective formation of primary immune response of the humoral type?
+ Macrophages, T-lymphocytes, B-lymphocytes
T-lymphocytes, plasmocytes, B-lymphocytes
Macrophages, plasmocytes, B-lymphocytes
B-lymphocytes, macrophages, plasmocytes
Vaccination is performed for the specific prophylaxy of illness and formation of immunity. The formation of what immunocompetent cells is necessary for the effective formation of primary immune response of the cellular type?

+ Macrophages and T-lymphocytes
T-lymphocytes and plasmocytes
Macrophages and plasmocytes
B-lymphocytes and T-lymphocytes

There are three competent in the development of infections and epidemic processes. The first component of the infectious process is the pathogenic organism. What is the first component of the epidemic process?

+ The source of the infection
The dosis of the microorganism
The entry of infection
The environmental conditions

What interleukin does macrophages secrete at the end of phagocytosis for the start of immune response for the bacterial antigen?

+ IL-1
IL – 5
IL – 6
IL – 2
IL – 3

The patient felt badly in 1.5 month after the transplantation of donor’s organ and the rejection reaction started. What factor of the immune system played the main role in the rejection of the transplant?

+ T-killers
Interleukin 1
Natural killers
B-lymphocytes
T-helpers

The immunization of children was planned for the prophylaxy of illness. What properties should the vaccine have?

+ Immunogenicity, avirulence, areactivity
Immunogenicity, areactivity
Avirulence, simple production of vaccine technology
Areactivity, the simple way of injection
Immunogenicity

If bacteriological examination gave negative result, the diagnosis can be put by the serologic examination. The formation of agglutinate of the microorganisms with patient’s antibodies is the reaction of:

+ Agglutination
Precipitation
Binding complement
Lysis
Immobilization

The vaccines for immunization are created in the institute of bacterial preparations. What is the vaccine that consists of bacterial cells and the anatoxin of other agent?

+ Associated
Chemical
Genetic-engineered
Autovaccine
Combined

In initial surgical debridement for the creation of artificial passive immunity the patient was injected with:

+ Immune serum
Vaccine
Anatoxin
Antibiotics
Vitamins
For the determination of patient sensitivity to antibiotics he was injected with 0.2 ml solution of penicillin. Patient started to complain on hyperemia and edema on the site of injection in 10 minutes after the performed procedure. What type does this reaction belong to by Coomb’s classification?

+ Anaphylactic reaction (Overi phenomenon)
+ Cytotoxic reaction
+ Delayed-type hypersensitivity
+ Reaction of Arthus phenomenon type
+ Tuberculin reaction

**25 years old woman who was doing the repairment of the flat started to complain on asthmatic fit, which is characterized by the feeling of air insufficiency, difficulty of outbreathing, dry cough, nervousness. The doctor put the diagnosis of bronchial asthma. What allergy mediator stimulated the asthmatic fit?**

+ Histamine
+ Serotonin
+ Prostaglandin E
+ Interleukin 1
+ Interleukin 6

**40 years old woman started to complain on itch, reddeness and burning of skin feeling, the swell on cheeks. The patient was using the cosmetic cream in 1 hour before the symptoms. What type of allergic reaction of I type did the patient have by the classification of Coomb’s?**

+ Quincke’s edema
+ Bronchial asthma
+ Anaphylactic shock
+ Urticaria
+ Pollinosis

**The worker, who was working at plant for 20 years, has contact dermatitis of hands. What type of immunological dysfunctions does this illness belong to?**

+ Delayed type hypersensitivity
+ Primary immunodeficiency
+ Immediate type hypersensitivity
+ B-cell immunodeficiency
+ T-cell immunodeficiency