**FEDERAL STATE BUDGET EDUCATIONAL
HIGHER EDUCATION INSTITUTION
"ROSTOV STATE MEDICAL UNIVERSITY"
MINISTRY OF HEALTH OF THE RUSSIAN FEDERATION**

FACULTY OF TREATMENT AND PREVENTION

Appraisal Fund
in the discipline "Immunology"

Specialty 05/31/01 General Medicine

2023

1. List of competencies formed by the discipline (in full or partially)

general professional (OPK):

Code and name general professional competence	Indicator(s) of achieving general professional competence
OPK 9 Ability to evaluate morphofunctional, physiological conditions and pathological processes in the human body to solve professional tasks.	ID 1 OPK-9 Proficient in clinical and laboratory algorithm And functional diagnostics when solving professional problems. ID 2 OPK-9 Able to evaluate the results of clinical, laboratory and functional diagnostics when solving professional problems. ID 3 OPK-9 Can evaluate morphofunctional, physiological parameters and determine Availability pathological processes in the human body based on clinical and laboratory data, physical And instrumental research methods. ID 4 OPK-9 Able to determine the main indicators of the patient's physical development and functional state, taking into account anatomical and physiological characteristics and age of the patient

2. Types of assessment materials in accordance with the competencies being developed

Name competencies	Types of assessment materials	number of tasks **for 1 competency**
OPK-9	Closed tasks	25 with sample answers
	Open type tasks: Situational tasks Interview questions Add-on tasks	75 with sample answers

OPK-9:

Closed type tasks:

Task 1. Instructions: Choose one correct answer. Indicators of adaptive humoral immunity include: 1. Serum content of immunoglobulins of classes A, M, G
2. Absolute circulating CD4 count+-lymphocytes
3. TLR expression on peripheral blood monocytes
4. Synthesis of reactive oxygen species
*Sample answer:*1. Content of immunoglobulins of classes A, M, G in blood serum

Task 2. Instructions: Choose one correct answer. What PIDs are observed in B-cell deficiency 1. Hyper-IgE syndrome
2. Bruton's disease
3. Chronic candidiasis of the mucous membrane and skin
4. DiGeorge syndrome
Response standard: 2. Bruton's disease

Task 3. Instructions: Choose one correct answer.
Primary immunodeficiencies are
1. A heterogeneous group of genetic disorders based on mutations in specific genes of one or more components of the immune system 2. Acquired clinical and immunological syndrome, characterized by a decrease in the effector components of the immune system
3. Specific immunological unresponsiveness of the body
4. Induced dysfunctions of the immune system due to specific exposures

*Sample answer:*1. A heterogeneous group of genetic disorders that are based on mutations in specific genes in one or more components of the immune system

Task 4. Instructions: Choose one correct answer.
The active stage of the autoimmune process is characterized by the following changes in the immune system:
1. Hypergammaglobulinemia IgM, IgG
2. Increased content of properdin
3. Increased microbicidal activity
4. Hypogammaglobulinemia
Response standard: 1. Hypergammaglobulinemia IgM, IgG

Task 5. Instructions: Choose one correct answer. Rheumatoid factor is 1. Autoantibodies of the Ig G and/or Ig M class to the Fc fragment of Ig G
2. Autoantibodies of the Ig G and Ig M classes to the Fc fragment of Ig M
3. Autoantibodies of the Ig G and/or Ig M class to the Fab fragment of Ig A
4. Immunoglobulins class D
Response standard: 1. Autoantibodies of the Ig G and/or Ig M class to the Fc fragment of Ig G

Task 6. Instructions: Choose several correct answers. For active immunization do not use:

1. Live vaccines
2. Killed vaccines
3. Antitoxins
4. Immunoglobulins
5. Recombinant vaccines
6. Vector vaccines
7. Specific antibodies

Sample answer: 1,2,5,6

Task 7. Instructions: Select several correct answers Selective IgA deficiency is characterized by

1. Decrease in serum IgA concentration <0.07 g/l
2. Normal IgG level
3. Normal IgM level
4. Decrease in the number of B-lymphocytes
5. IgM hypogammaglobulinemia
6. Changes in T-lymphocyte differentiation
7. Increase in the number of T-lymphocytes

Response standard: 1,2,3

Task 8. Instructions: Choose several correct answers.
In the acute phase, with an immediate type of allergic reaction, the fixation of IgE antibodies on:

1. Macrophages
2. T-lymphocytes
3. Mast cells
4. Basophils
5. Neutrophils
6. B lymphocytes
7. NK lymphocytes

Response standard: 3, 4

Task 9. Instructions: Choose several correct answers. List
cytokines with proinflammatory effects:

1. IL-12
2. TNF
3. IL-10
4. TFR
5. IL-6
6. IL-8

Standard answer: 1,2, 5, 6

Task 10. Instructions: Choose several correct answers. Targets
for natural killers:

1. Gram-positive microbes
2. Allergens
3. Virus-infected cells
4. B lymphocytes
5. Hepatocytes
6. Transformed tumor cells
7. B lymphocytes
8. CD 95+ cells

*Sample answer:*3,6,8

Task 11. Instructions: Here is a statement that needs to be continued with the alternatives given in the table on the right. From the given alternatives, you need to choose those that correctly complement the given statement. If you agree with the given alternative, circle the answer “yes” in the table. If you do not agree with the given alternative, circle the answer “no” in the table.

The criteria for CVID are:

Yes	No	inadequate response to vaccination
Yes	No	difficulty swallowing food
Yes	No	absence of isohemagglutinins

Yes	No	decreased number of switched memory B cells
Yes	No	decrease in the total level of serum immunoglobulins < 9 g/l
Yes	No	decrease in the total level of serum immunoglobulins < 4.5 g/l
Yes	No	sweating
Yes	No	frequent sinopulmonary infections
Yes	No	headache
Yes	No	ineffectiveness of standard courses of antibacterial therapy

Correct answer:

Yes	No	inadequate response to vaccination
Yes	**No**	difficulty swallowing food
Yes	No	absence of isohemagglutinins
Yes	No	decreased number of switched memory B cells
Yes	**No**	decrease in the total level of serum immunoglobulins < 9 g/l
Yes	No	decrease in the total level of serum immunoglobulins < 4.5 g/l
Yes	**No**	sweating
Yes	No	frequent sinopulmonary infections
Yes	**No**	headache
Yes	No	ineffectiveness of standard courses of antibacterial therapy to relieve infections

Task 12. Instructions: Here is a statement that needs to be continued with the alternatives given in the table on the right. From the given alternatives, you need to choose those that correctly complement the given statement. If you agree with the given alternative, circle the answer “yes” in the table. If you do not agree with the given alternative, circle the answer “no” in the table.

Warning signs of primary immunodeficiencies include:

Yes	No	the need for long-term, sometimes intravenous, antibiotic therapy to relieve infection (up to 2 months or longer)
Yes	No	bronchial asthma, persistent
Yes	No	frequent sinusitis, occurring in severe form.
Yes	No	severe course of bronchopulmonary pathology with frequent relapses.
Yes	No	complications during vaccination with attenuated live vaccines (BCG, polio).
Yes	No	heaviness after meals
Yes	No	repeated episodes of anaphylaxis
Yes	No	pain in the stomach area
Yes	No	severe infections suffered at least 2 times (for example, meningitis, osteomyelitis, sepsis)
Yes	No	BKM intolerance
Yes	No	presence of a family history (facts of early deaths from severe

		infections)

Correct answer:

Yes	No	the need for long-term, sometimes intravenous, antibiotic therapy to relieve infection (up to 2 months or longer)
Yes	**No**	bronchial asthma, persistent
Yes	No	frequent sinusitis, occurring in severe form.
Yes	No	severe course of bronchopulmonary pathology with frequent relapses.
Yes	No	complications during vaccination with attenuated live vaccines (BCG, polio).
Yes	**No**	heaviness after meals
Yes	**No**	repeated episodes of anaphylaxis
Yes	**No**	pain in the stomach area
Yes	No	severe infections suffered at least 2 times (for example, meningitis, osteomyelitis, sepsis)
Yes	**No**	BKM intolerance
Yes	No	presence of a family history (facts of early deaths from severe infections)

Task 13. Instructions: Here is a statement that needs to be continued with the alternatives given in the table on the right. From the given alternatives, you need to choose those that correctly complement the given statement. If you agree with the given alternative, circle the answer “yes” in the table. If you do not agree with the given alternative, circle the answer “no” in the table.

Primary immunodeficiencies with a predominant impairment of antibody synthesis include the following nosologies:

Yes	No	Hyper-IgE syndrome
Yes	No	DiGeorge syndrome
Yes	No	Bruton's disease
Yes	No	Marshall syndrome
Yes	No	Common variable immune deficiency
Yes	No	Louis-Bar syndrome
Yes	No	Transient hypogammaglobulinemia of children
Yes	No	Wiskott-Oldpeach syndrome
Yes	No	Selective IgA immunodeficiency
Yes	No	SCID
Yes	No	NAO

Correct answer:

Yes	**No**	Hyper-IgE syndrome
Yes	**No**	DiGeorge syndrome
Yes	No	Bruton's disease
Yes	**No**	Marshall syndrome

Yes	No	Common variable immune deficiency
Yes	**No**	Louis-Bar syndrome
Yes	No	Transient hypogammaglobulinemia of children
Yes	**No**	Wiskott-Oldpeach syndrome
Yes	No	Selective IgA immunodeficiency
Yes	**No**	SCID
Yes	**No**	NAO

Task 14. Instructions: Here is a statement that needs to be continued with the alternatives given in the table on the right. From the given alternatives, you need to choose those that correctly complement the given statement. If you agree with the given alternative, circle the answer "yes" in the table. If you do not agree with the given alternative, circle the answer "no" in the table.

Diagnostic signs of hereditary angioedema

Yes	No	the development of edema is induced by mediators mast cells
Yes	No	itching and redness in the area of edema is a characteristic clinical sign
Yes	No	forms quickly
Yes	No	swelling duration is 5-8 hours
Yes	No	recurrent dense swelling of the hands and feet lasting from 2 to 5 days
Yes	No	attacks of acute abdominal pain, may be accompanied by diarrhea and vomiting, lasting about 10 hours,
Yes	No	provoking factors for the development of edema can be stress, mechanical impact
Yes	No	effect from the use of systemic corticosteroids, antihistamines
Yes	No	for diagnosis it is necessary to determine the level of C1-INH, its functional activity and the content of the C4 component
Yes	No	For diagnosis it is important to determine the level of specific IgE
Yes	No	For diagnosis it is important to determine the total number of neutrophils

Correct answer:

Yes	**No**	the development of edema is induced by mast cell mediators
Yes	**No**	itching and redness in the area of edema is a characteristic clinical sign
Yes	**No**	forms quickly
Yes	**No**	swelling duration is 5-8 hours
Yes	No	recurrent dense swelling of the hands and feet lasting from 2 to 5 days
Yes	No	attacks of acute abdominal pain, may be accompanied by diarrhea and vomiting, lasting about 10 hours,
Yes	No	provoking factors for the development of edema can be stress, mechanical impact
Yes	**No**	effect from the use of systemic corticosteroids, antihistamines
Yes	No	For diagnosis it is necessary to determine the level of C1-INH, its

		functional activity and content of the C4 component
Yes	**No**	For diagnosis it is important to determine the level of specific IgE
Yes	**No**	For diagnosis it is important to determine the total number of neutrophils

Task 15. Instructions: Here is a statement that needs to be continued with the alternatives given in the table on the right. From the given alternatives, you need to choose those that correctly complement the given statement. If you agree with the given alternative, circle the answer "yes" in the table. If you do not agree with the given alternative, circle the answer "no" in the table.

Changes in immune status during the stage of clinical manifestations of HIV infection

Yes	No	Lack of specific antibodies to HIV antigens
Yes	No	Positive ELISA result for determining antibodies to HIV
Yes	No	Decrease in the number of peripheral blood monocytes
Yes	No	Decreased C1-INH function
Yes	No	Hypergammaglobulinemia
Yes	No	Inhibition of the production of pro-inflammatory cytokines
Yes	No	Increase in the relative number of CD4+ T lymphocytes
Yes	No	Decrease in the relative content of CD8+ T-lymphocytes
Yes	No	Inversion of the CD4+/CD8+ ratio
Yes	No	Absence of mature B lymphocytes in circulation
Yes	No	Absence of NK in circulation

Correct answer:

Yes	**No**	Lack of specific antibodies to HIV antigens
Yes	No	Positive ELISA result for determining antibodies to HIV
Yes	**No**	Decrease in the number of peripheral blood monocytes
Yes	**No**	Decreased C1-INH function
Yes	No	Hypergammaglobulinemia
Yes	**No**	Inhibition of the production of pro-inflammatory cytokines
Yes	**No**	Increase in the relative number of CD4+ T lymphocytes
Yes	**No**	Decrease in the relative content of CD8+ T-lymphocytes
Yes	No	Inversion of the CD4+/CD8+ ratio
Yes	**No**	Absence of mature B lymphocytes in circulation
Yes	**No**	Absence of NK in circulation

Task 16. Establish a correspondence between the phenotypic characteristics of T-lymphocytes and their function:

1. CD3+CD4+	A. T-lymphocyte in the stage of late activation
2. CD3+CD8+	B. T-regulatory lymphocyte (suppressor)
3. CD3+CD4+ CD25+FoxP3+	B. T-lymphocyte helper (inducer)
4. CD3+ HLA DR+	D. Cytotoxic T-lymphocyte

And

Correct answer: 1-B, 2-G, 3-B, 4-A.

Task 17. Establish a correspondence between the cellular elements of the immune system and their function

1. monocytes-macrophages	A. Have an antigen-specific suppressor function
2. natural killers	B. Transforms into plasma antibody-producing cells
3. B lymphocytes	B. They are antigen-presenting cells that provide phagocytosis processes
4. T-regulatory lymphocytes	G. destroy their own transformed cells (infected, cancerous) regardless of the nature of the damage

Correct answer: 1-B, 2-G, 3-B, 4-A.

Task 18. Establish a correspondence between the humoral factors of the immune system and their function

1.IgA	A. Surface receptor, marker of mature B cells
2. Ig M	B. main plasma immunoglobulin, transplacental Ig
3.IgG	B. Immunoglobulin of mucous membranes, secretory immunoglobulin, provides mucosal immunity
4.Ig D	G. Pentamer, first synthesized in response to infection

Correct answer: 1-B, 2-G, 3-B, 4-A.

Task 19. Establish a correspondence between a cytokine and its main function

1. Interleukin-4 (IL-4)	A. Anti-inflammatory mediator
2. Interleukin-6 (IL-6)	B. The main mediator of the Th-1 variant of the immune response, activates T-effectors, NK
3. Interleukin-10 (IL-10)	B. The main mediator of the Th-2 variant of the immune response, mediates the synthesis of Ig E
4. Interferon-gamma	D. Pro-inflammatory cytokine, mediates the synthesis of CRP, endogenous pyrogen

Correct answer: 1-B, 2-G, 3-A, 4-B.

Task 20. Establish a correspondence between immunogram parameters and their values in practically healthy adults

1.IgA	A. 1-100 IU/ml
2. Ig M	B. 9-12 g/l
3.IgG	B. 1.1-1.9 g/l
4. Ig E	G. 0.9-1.1 g/l

Correct answer: 1-B, 2-G, 3-B, 4-A.

Task 21. Specify the correct sequence of actions when identifying X-linked agammaglobulinemia
A. Conducting a genetic study to identify a β-tyrosine kinase defect B. Assessing the immune status.
B. Collection of anamnestic data, identification of possible early deaths from infections D. Collection of complaints and examination of the patient
D. Determination of the level of protein fractions in the blood *Correct answer*: G; IN; D; B; A

Task 22. What is the sequence of actions when diagnosing HAE A. Conducting a study to identify a defect in the SERPING1 gene B. Determining the functional activity of the C1 complement component
B. Collection of anamnestic data, identification of manifestations of the HAE clinic in relatives D. Collection of complaints and examination of the patient
E. Determination of the content of C4 complement component, inhibitor of C1 complement component
Correct answer: G; IN; D; B;A

Task 23. What is the sequence of actions when preparing to prescribe ASIT in a patient with allergic rhinitis
A. Choosing the ASIT method
B. Conducting skin tests and/or laboratory diagnosis of a causal allergen

B. Collection of anamnestic data, identifying the connection between the manifestation of rhinitis and the influence of various factors
D. Collection of complaints and examination of the patient
D. Assessment of contraindications for ASIT and allergy diagnostics in vivo *Correct answer*: G; IN; D; B; A

Task 24. What is the sequence of actions when manifested by diagnostics of VIDS, chronic herpetic infection
A. General clinical and biochemical laboratory examination B. Assessment of immune status
B. Collection of anamnestic data, identification of manifestations of immune-mediated pathology in relatives
D. Collection of complaints and examination of the patient
D. Characteristics of specific antibodies to HSV-1,2; CMV, EBV, HHV-6
Correct answer: G; B, B, D, A
Task 25. Specify the correct sequence of actions to identify autoimmune pathology

A. General blood test
B. Biochemical blood parameters, including acute phase proteins and markers of tissue destruction
B. Collection of anamnestic data, identification of possible manifestations of AIZ in relatives
D. Collection of complaints and examination of the patient
D. Analysis for the detection of autoantibodies and assessment of immune status *Correct answer:*G; IN; D, B, A

Open type tasks:

Task 1.
Boy A., 12 years old. A child from the third pregnancy, birth weight 2500 g, height 50 cm. Physical and neuropsychic development corresponded to age. Preventive vaccinations according to the calendar, without complications. Family history: One of the older brothers died at the age of 5 years after severe pneumonia. The clinical debut of the disease was at the age of 6 years, when recurrent obstructive bronchitis was noted; he was treated as an inpatient for bilateral polysegmental pneumonia, complicated by pleurisy. Due to the severity of the condition, massive antibacterial therapy and the introduction of fresh frozen plasma were carried out. He was discharged with an improvement in his condition, but continued to be bothered by a cough with purulent sputum, and periodic rises in temperature. A year later, a diagnostic bronchoscopy was performed and deforming bronchitis with bronchiectasis was discovered. Subsequently, during the next year of observation, the patient was hospitalized three times for bilateral pneumonia. During the interhospital period, symptoms of chronic intoxication were noted, symptoms of cardiopulmonary failure increased, and symptoms of chronic sinusitis were added. When assessing the immune status: CD3 – 86%, CD4 – 44%, CD8 – 42%, CD16 – 14%, CD19 – 0%, IgA 0.02 g/l, IgM – 0.05 g/l, IgG – 0 .4 g/l. Make a preliminary diagnosis.
*Sample answer:*Primary immunodeficiency. X-linked agammaglobulinemia. Bruton's disease.

Task 2.
A 27-year-old woman was admitted to the clinic with acute lobar pneumonia and herpes zoster. Over the past 5 years, she has been hospitalized twice with pneumonia. After appropriate treatment, the patient was discharged from the clinic in satisfactory condition without any residual symptoms of the disease. In childhood, no severe and frequently recurring infectious diseases of the respiratory system were noted. When collecting anamnesis, it was possible to reveal that there were episodes of diarrhea that were observed in the patient in adolescence. The examination revealed: Hb level -115 g/l, the content of neutrophils and lymphocytes was within normal limits. No organic changes in the gastrointestinal tract were detected. When assessing the immune status: CD3 – 72%, CD4 – 44%, CD8 – 28%, CD16 – 18%, CD19 – 10%, IgA 0.02 g/l, IgM – 0.5 g/l, IgG – 2 .4 g/l. NST spont. 94 USD, NST stim. 152 USD, K steam. 1.5; Central Election Commission – 37 USD It was not possible to detect antigen-specific IgG despite the fact that the patient received a booster dose of tetanus vaccine 1 year ago. A preliminary diagnosis was established: “Primary immunodeficiency state. Common variable immune deficiency. Hypogammaglobulinemia." What are the diagnostic criteria for making a diagnosis of “Common variable immune deficiency”.

Response standard: marked decrease in IgG level (in 2 repeated studies for adults - less than 4.5 g/l); inadequate response to vaccination (lack of specific antibodies); exclusion of secondary genesis of hypogammaglobulinemia;

Task 3. Patient K., 15 years old, complained of periodic swelling in the face, soft tissues of the lower and lower extremities, frequent acute respiratory viral infections, ending in laryngospasms with hospitalization in the ENT department up to 6-8 times a year. From the medical history: since childhood, he has been prone to ARVI up to 6-10 times a year with a protracted course. Swelling in the face, torso and soft tissues of the extremities occurs spontaneously. From chronic diseases: hr. tonsillitis, recurrent laryngitis with minimal effect from treatment with antibiotics, antihistamines and glucocorticoids. Allergy history is not burdened. The older brother and father suffer from recurrent angioedema. Make a preliminary diagnosis.
Response standard: Primary immunodeficiency state. angioedema. Hereditary

Task 4. Patient K. 7 years old. He was taken by ambulance to the emergency department with suspected pneumonia. From the anamnesis: according to his mother, the boy often suffers from purulent infections. At 7 months he suffered from bronchiolitis; at 2 years, 3 episodes of otitis media; bilateral conjunctivitis (antibiotic therapy); At the age of 6, purulent sinusitis was diagnosed. Upon examination: the doctor on duty assessed the child's condition as serious. Temperature 39^0. The boy is lethargic, adynamic, and his emotional tone is sharply reduced. The skin is pale. The cough is frequent and painful. Mixed shortness of breath is evident. Percussion over the lungs on the right reveals dullness of the pulmonary sound from the scapular spine downward and anteriorly, turning into dullness and spreading to the anterior axillary line. Breathing over the area of shortening of the sound is weakened, in the interscapular area there are single crepitating rales. With additional examination (assessment of immune status): CD3 – 80%, CD4 – 44%, CD8 – 35%, CD16 – 18%, CD19 – 9%, IgA 0.2 g/l, IgM – 0.5 g/l , IgG – 3.4 g/l. A preliminary immunological diagnosis was established: Primary immunodeficiency state. Common variable immune deficiency. Hypogammaglobulinemia. Which variant of primary immunodeficiency does this nasology relate to?

*Sample answer:*Immunodeficiencies with predominant synthesis deficiency antibodies.

Task 5. The patient, 19 years old, has been smoking since he was 11 years old, was referred from the tuberculosis clinic to clarify the diagnosis. From the anamnesis: in childhood I was often sick, including all childhood infections. At the age of 15 he was convicted and served his sentence in a children's prison for minors. After 3 months in prison, he fell ill with obstructive purulent bronchitis, sinusitis, and otitis media. The R-gram revealed focal pneumonia in the lobe of the left lung. The patient received drug therapy, but over the course of 2 years he suffered pneumonia in the lobes of the left lung 3 times. After another exacerbation, the patient was transferred to the Institute of Tuberculosis, where he received massive specific therapy, but subfibrosis, weakness, sweating, enlarged cervical and axillary lymph nodes remained, and the fraction of γ-globulins in the blood serum was significantly reduced. A preliminary immunological diagnosis was established: Primary immunodeficiency state. Hypogammaglobulinemia. Which variant of primary immunodeficiency does this nosology belong to? Give examples of diseases.

*Sample answer:*Immunodeficiencies with predominant synthesis deficiency antibodies.

1. Selective immunoglobulin A deficiency

2. Common variable immune deficiency
3. X-linked agammaglobulinemia. Bruton's disease.

Task 6. Boy 2 years old. The mother complains of frequent acute respiratory infections in the child, with frequent bronchitis, the presence of pyoderma, plantar warts, herpetic rashes on the lips once every 2-3 months. The child's appearance is a "fish-shaped" mouth, low-set ears, Mongoloid eyes. There is a history of convulsive syndrome. On physical examination: congenital malformation of the cardiovascular system - the aortic arch is turned to the right side (Tetralogy of Fallot), underdevelopment of the thymus. Laboratory data: leukocytes - 5.3 x 10_9/l, lymphocytes - absolute number 0.6 x 10_9/l. Make a preliminary diagnosis?
Response standard: Preliminary diagnosis: Primary immunodeficiency state with insufficiency of the cellular part of the immune system - DiGeorge Syndrome.

Task 7. Patient V., 21 years old, was hospitalized urgently with swelling of the face (lips, chin), spreading to the neck and increasing symptoms of difficulty breathing, hoarseness, and barking cough. No rashes were detected, no itching. The swelling appeared and gradually progressed after dental intervention (tooth extraction), after which about 36 hours passed. The emergency medical team administered prednisolone 90 mg, suprastin 1%-2 ml - all without effect. I have not noted any allergic reactions in the past, incl. for local anesthetics. There are no allergy sufferers among my relatives, but my grandmother had similar acute edema and died of laryngeal edema at the age of 45. Objectively: the condition is serious, temperature 37.2. Skin and mucous membranes are of normal color and moisture. Swelling of the lower part of the face - lips, chin, neck, indistinguishable in color from healthy areas of the skin. There are no rashes or scratches. The mucous membrane of the oral cavity, palate, and uvula are swollen, of normal color, without plaques or rashes. NPV-26 per minute, AP-110/60. Heart sounds are clear and pure. In the lungs, breathing is shallow, with difficulty inhaling, vesicular, without local changes. The abdomen is soft and painless. The liver and spleen are not enlarged. A preliminary diagnosis has been established: Primary immunodeficiency state. Hereditary angioedema. What additional laboratory testing should be performed in a specific clinical situation?

Response standard: Laboratory examination: 1) level of the C4 component of the complement system.
2) level and functional activity of the C1 inhibitor,
3) antibodies to C1 inhibitor
4) genetic research

Problem 8. The parents of a two-year-old boy went to the clinic to have their child examined. At the age of 10 months, a malformation of the aorta was detected. The child often suffers from infectious diseases. Six months ago I was treated for pneumonia. Two months ago, otitis media was diagnosed, which developed against the background of bronchitis. From the first days of life, convulsions occur periodically. Currently he is being treated for candidiasis, the development of which his parents associate with long-term antibiotic therapy. Observed by an endocrinologist due to insufficiency of the parathyroid glands. The child has low nutrition, the ears are low, the eyes are slanted, the bridge of the nose is wide. The examination revealed thymic hypoplasia and lymphocytopenia. A preliminary diagnosis has been established. Primary immunodeficiency. Di Giorgia syndrome. What are the diagnostic criteria for DiJoggia syndrome?
Response standard: decrease/absence of CD3+ T-lymphocytes during the first three years of life; congenital malformations (heart); a\hypoplasia of the thymus; hypocalcemia; deletion of chromosome 22q11.2.

Task 9. A 20-year-old female patient was admitted to the emergency department with complaints of swelling of the face, tongue, and skin of the ears. From the anamnesis it is known that the complaints appeared after severe emotional stress. Also, over the last year, swelling of the forearms and lower legs has been periodically observed, which was caused by injuries (the patient plays in a student handball team), reached large sizes by the third day, and gradually went away on their own. There is no allergic history. Family history: The patient's grandfather suffered from similar edema from a young age. On examination: the skin and mucous membranes are of normal color. The area of the face and ears is significantly increased in volume due to pronounced swelling, which does not decrease with finger pressure. A preliminary diagnosis has been established: Primary immunodeficiency state. Hereditary angioedema. What conditions should a differential diagnostic search be carried out in this clinical situation? *Sample answer:*Allergic angioedema (histamine); acquired angioedema (on background of autoimmune, lymphoproliferative, oncopathology); hypothyroidism; Rossolimo-Melkersson syndrome; drug intolerance; uricary vasculitis; hypoproteinemia; cirrhosis of the liver.

Problem 10. Boy M., 13 months. The child from the first pregnancy was born at term. Was breastfed for up to 6 months. Physical and neuropsychic development lags behind age. No preventive vaccinations were carried out. From the anamnesis it is known that the child suffered from pneumonia at the age of 7 months. Due to the severity of the condition, massive antibacterial therapy was carried out with positive dynamics. He suffered pneumonia again at 12 months, complicated by purulent otitis media. A laboratory study revealed a significant decrease in the gamma globulin fraction in the proteinogram (1 g/l). A preliminary diagnosis has been established. Primary humoral immunodeficiency. What additional laboratory tests need to be performed.

Response standard: Assessment of immune status (CD3+, CD4+, CD8+, CD16+, CD19+, IgA, IgM, IgG, CEC, phagocytic activity of neutrophils in the NCT test).

Problem 11. Boy, 1 year 2 months. He was admitted to the purulent surgery department of a children's hospital with an extensive abscess in the right gluteal region, body temperature increased to 39.5°C. There is a pustular rash on the skin, recurrent and difficult to respond to antibiotic therapy. He suffered from bacterial pneumonia, local BCG vaccine infection, and purulent lymphadenitis. On examination: delayed physical development, liver +4 cm, spleen enlarged. During laboratory examination: in the general blood test - leukocytes - $12x10_9$/l, segmented neutrophils 75%, ESR 20 mm/hour; in the immunogram - IgG 14 g/l, IgA 1.5 g/l, IgM 1.3 g/l. A preliminary diagnosis was established: Primary immunodeficiency, unspecified. Disorders in which part of the immune system do you expect to be diagnosed? *Response standard*: the above-described clinical manifestations (soft tissue abscess, pustular rash, difficult to respond to antibacterial therapy, local vaccine BCG infection, purulent lymphadenitis) are characteristic of a disorder in the phagocytic part of the immune system.

Problem 12. Boy K., 15 years old. He was born full term and the pregnancy proceeded normally. Preventive vaccination - on time and without any special features. Complains of a periodic dry cough and a rise in temperature to subfebrile levels. From the anamnesis it is known that up to three years of age, uncomplicated acute respiratory infections often occurred up to 8 times a year. At the age of 4 years he was admitted to the hospital with a diagnosis of:

bilateral polysegmental pneumonia. Massive antibacterial therapy and intravenous immunoglobulin transfusion were carried out (without determining the level of serum immunoglobulins). Over the past year, she has noted acute respiratory infections up to 1-2 times a month, complicated by sinusitis. For this reason, I received courses of broad-spectrum antibacterial drugs up to 6 times a year.
Immunogram data:

Lymphocytes%			Immunoglobulins g/l	
Leukocytes 10x9/l			IgA	0.04
Population and subpopulation of lymphocytes			IgM	1.5
	%	Abs.	IgG	12.1
CD3	76			
CD4	45		NST test (cu)	
CD8	28		NST sp.	80
CD16	12		NST art.	156
CD19	14			

Make a preliminary diagnosis.
Response standard: Selective immunoglobulin A deficiency.

Task 13. A 60-year-old patient was hospitalized by ambulance in the otolaryngology department due to new swelling of the neck. The swelling grew gradually, at the time of examination there was itching, no redness, the skin over the area of edema was cold and pale. It is known that 2 years ago he underwent a liver transplant for cirrhosis and is receiving therapy with immunosuppressants (cytostatics). He is being observed by a cardiologist for hypertension and coronary heart disease (takes ACE inhibitors, beta-blockers, statins, antiplatelet agents). An ambulance paramedic administered 12 mg of dexamethasone intravenously without effect. At the time of hospitalization, the patient is conscious and adequate. The condition is severe (due to the localization of angioedema). The skin is pale. On the anterior surface of the neck there is soft tissue swelling, pale, painless, no rashes, no itching. There is vesicular breathing in the lungs, no wheezing. Heart sounds are rhythmic and muffled. Heart rate - 72 per minute, blood pressure 160/90 mm Hg. Art. The abdomen is soft and painless. The liver and spleen are not enlarged. A preliminary diagnosis was made: Acquired angioedema. Conduct additional laboratory testing.
Sample answer:Laboratory examination:
1) level of the C4 component of the complement system.
2) level and functional activity of the C1 inhibitor,
3) C1q concentration

Problem 14. A 72-year-old woman received corticosteroid treatment for giant cell arteritis for 6 months. During the period of the above therapy, the patient experienced painful blistering rashes in the supraorbital region, along the trigeminal nerve on the right, three times. Despite the fact that each of the attacks of recurrent herpes zoster was successfully stopped by oral administration of acyclovir, the patient, after each relapse of the viral infection, showed signs of postherpetic neuralgia. Currently, there are single blistering rashes above the right eye socket on the skin of the forehead, painful. Pain in the head on the right with radiation to the right eye and teeth on the right. When assessing the immune status: CD3 - 61%, CD4 - 29%, CD8 - 31%, CD16 - 18%, CD19 - 20% Ig A - 2.4 g/l, IgM - 1.6 g/l, IgG - 14.1

g/l, CEC 160 USD A preliminary diagnosis was made: Giant cell arteritis. Herpes zoster, vesicular form, exacerbation. Trigeminal neuralgia. Secondary immunodeficiency state. What are the possible reasons for the reactivation of herpesvirus infection in this patient?
Response standard: in a specific clinical situation, there is long-term use of glucocorticosteroids, which have a depressing effect on the patient's immune system, which may have led to the activation of herpetic infection.

Task 15. Patient S., 22 years old. Complaints of fatigue, weakness, headache, low-grade fever. A month ago there was casual sexual contact, 2 weeks after which symptoms of genital herpes appeared. In connection with this he sought medical help. A preliminary diagnosis has been established: Primary herpetic infection of the genital organs, localized form, mild severity. Name the methods for diagnosing herpes virus infection.

Response standard: Methods for diagnosing herpes virus infection.

1) Virological
2) Serological
3) Molecular genetic (PCR)
4) Immunofluorescent
5) Immunocytochemical

Problem 16. Patient K., 35 years old, works as an IT specialist, went to the clinic. Over the past year, she has complained of constant fatigue and decreased performance. Notes impaired concentration of memory, rapid physical fatigue, muscle pain. Over the last 3 days, the patient has developed a vesicular-papular rash on the border of the lips after a short low-grade fever, and enlarged cervical lymph nodes. Doesn't take medications. A preliminary diagnosis has been established: Acute herpetic infection (labial), localized form, mild severity. Formulate an examination plan.

Response standard: Examination plan: OBC, OAM, Biochemical blood test; Assessment of immune status (CD3+, CD4+, CD8+, CD16+, CD19+, IgA, IgM, IgG, CEC, phagocytic activity of neutrophils in the NCT test).

Problem 17. Patient B., 17 years old. Complaints about frequent ARVI. Suffers from chronic rhinosinusitis, chronic tonsillitis with frequent exacerbations. In the last six months, almost every month, boils have appeared on the upper and lower extremities, back, and chest, which were treated surgically. Sent by surgeon for examination. Immune status assessment data: CD3 - 61%, CD4 - 35%, CD8 - 26%, CD16 - 11%, CD19 - 18%, Ig A - 0.5 g/l, IgM - 1.2 g/l, IgG – 14.3 g/l, CEC 150 USD, NST spontaneous. 80 USD, NST stim. 160 USD A preliminary diagnosis has been established: Recurrent furunculosis. Chronic rhinosinusitis. Secondary immunodeficiency state by cellular type. Make a plan for additional examination of the patient.
Response standard: Additional examination: CBC, OAM, biochemical blood test, necessarily blood glucose, glycosylated hemoglobin; bacteriological culture from the nose, pharynx, discharged boil with determination of sensitivity to antibiotics.

Problem 18. A 25-year-old patient, 2 months ago suffered from severe tonsillitis and tracheobronchitis, for which a course of antibacterial therapy was administered. From the anamnesis: after graduating from university 2 years ago, he began working as a teacher in an elementary school and often suffered from ARVI. He rarely sought medical help and treated himself. After a course of antibiotic therapy, general weakness persists, periodically

sore throat, in the evening the body temperature rises to 37.2-37.40. During additional examination: ELISA: IgM to CMV - serum OD – 0.3, OD critical. – 0.28, IgG to CMV avidity index 36%, IgG to HSV 1 and 2 avidity index 92%, no antibodies to EBV. Make a preliminary diagnosis.
Response standard: Preliminary diagnosis: Cytomegalovirus infection, acquired, acute form, mild.

Problem 19. Patient, 29 years old. Suffering from chronic prostatitis after suffering mycoplasma and trichomes 2 years ago**O**over infection. He was treated by a urologist, but the effect of the therapy was short-lived. Over the past year, he has had 3 casual unprotected sexual contacts. Complaints of weakness, fatigue, headaches, periodic rises in temperature to subfebrile levels, enlarged inguinal lymph nodes, constant sore throat. Over the past year, he has noted an increase in frequency (once a month) and worsening of the course of labial herpes (long-lasting, more than 7 days, non-healing ulcers on the lips, despite taking acyclovir in therapeutic dosages and local provoviral ointments). When assessing the immune status: CD3 – 41%, CD4 – 17%, CD8 – 23%, CD16 – 22%, CD19 – 20% Ig A 2.8 g/l, IgM – 1.8 g/l, IgG – 14 .8 g/l, CEC 190 USD, NST spontaneous. 98 USD, NST stim. 140 USD
What infectious pathology must first be excluded (confirmed) in this patient?

*Sample answer:*HIV infection.
Problem 20. A 37-year-old woman sought medical help due to a sharp weight loss and periodic rises in body temperature in the evening to 37.5^{0}C. From the anamnesis it is known that the patient received a blood transfusion about six months ago due to acute gastric bleeding. Upon examination: palpation reveals an increase in the submandibular, axillary and inguinal lymph nodes. White spots appear on the oral mucosa. An immunogram was performed: CD3 – 48%, CD4 – 10%, CD8 – 36%, CD16 – 29%, CD19 – 19% Ig A 3.2 g/l, IgM – 2.8 g/l, IgG – 13.9 g/l, CEC 150 USD, NST spontaneous. 80 USD, NST stim. 120 USD A preliminary diagnosis has been made: AIDS. Based on what changes in the immune status can one assume the presence of HIV infection?
*Sample answer:*CD4+ T-lymphocytes are the main targets of HIV; accordingly, a decrease in this population during laboratory examination is the reason for further diagnostic search (immunoblot).

Problem 21. Patient K., 17 years old. Complaints of increased fatigue, lethargy, irritability, often suffering from ARVI with sore throat, increased body temperature up to 38^{0}For this reason he repeatedly received antibacterial therapy (semi-synthetic penicillins, cephalosporins). Objectively: the skin is clean, pale, there are single vesicular rashes on the upper lip, painful. The tonsils are enlarged, hyperemic, and there are no plaques. The occipital and submandibular lymph nodes are enlarged to the size of beans. In the UAC there is lymphocytosis, moderate leukocytosis. Immune status assessment data: CD3 – 63%, CD4 – 32%, CD8 – 30%, CD16 – 18%, CD19 – 20% Ig A – 2.1 g/l, IgM – 1.4 g/l, IgG – 13.5 g/l (according to Mancini), CEC 50 USD, NST spontaneous. 70 USD, NST stim. 130 USD A preliminary diagnosis has been established: Acute herpetic gingivitis and pharyngotonsillitis, mild course, localized form. Secondary immunodeficiency state. Assess your immune status.
*Sample answer:*Assessment of immune status according to immunogram: depression processes of maturation of T-lymphocytes (CD3 - 63%), disruption of their differentiation processes, decrease in the immunoregulatory index (IRI = 1.1). There is an increase in the content of natural killer cells (CD16 - 18%), B-lymphocytes

(CD19 - 22%), the main classes of immunoglobulins. The spontaneous phagocytic activity of neutrophils in the NCT test is suppressed.

Problem 22. A 5-year-old patient suffered a severe sore throat and tracheobronchitis 2 months ago, for which he was hospitalized in the infectious diseases department, where he received a course of antibacterial therapy. From the anamnesis: from the age of 2 he began to attend kindergarten and began to often suffer from ARVI. They rarely sought medical help and treated themselves. After treatment in the infectious diseases department, general weakness and occasional sore throat persist, and in the evening the body temperature rises to 37.2-37.4C0. During additional examination: ELISA: IgM to CMV - serum OD – 0.3, OD critical. – 0.28, IgG to CMV avidity index 36%, antibodies to HSV, EBV are absent. Make a preliminary diagnosis.
*Sample answer:*Preliminary diagnosis: Cytomegalovirus infection, acquired, acute form, mild.

Problem 23. A patient, 7 years old, 5 months ago suffered from infectious mononucleosis and was treated as an outpatient. During this time, I suffered from acute respiratory viral infection twice, and suffered from lacunar tonsillitis twice, with 8% of atypical mononuclear cells detected in a blood test. On examination, the patient was in moderate condition, temperature 37.4°C. There is moderate nasal congestion without discharge, tonsillar lymph nodes up to 2 cm, posterior cervical lymph nodes up to 1.5 cm. Liver +1 cm, spleen +1 cm. Clinical blood test: hemoglobin 115 g/l, leukemia – 6.5 x 109/l, p/i-2%, s/i-28%, l-60%, m-10%, atypical mononuclear cells - not detected, ESR 12 mm/hour. Serological examination showed IgM VCA (+), IgG EA (+), IgG NA (+). Positive result for EBV DNA in blood lymphocytes and saliva in PCR. A preliminary diagnosis has been established: Epstein-Barr infectious mononucleosis of viral etiology, prolonged course with relapses. Describe the pathogenetic features of the infectious process caused by the Epstein-Barr virus.
Response standard: transformation and uncontrolled proliferation are determined infected B lymphocytes due to disruption of their apoptosis. In conditions of suppression of the T-cell immunity, this ensures lifelong persistence of the virus, the development of malignant tumors, and autoimmune reactions.

Problem 24. A 10-year-old child often develops blistering rashes on the lips and around the nose, more often after hypothermia or prolonged insolation. The rash is accompanied by malaise, an increase in body temperature to 37.1C0. The bubbles, after lasting 2-3 days, burst, forming erosions. On physical examination, there were single vesicles on the facial skin in the area of the nasolabial triangle, painful on palpation. On the mucous membrane of the lower lip, against the background of hyperemic mucosa, there is an ulceration 3-4 mm in diameter, painful when food enters. The submandibular lymph nodes are enlarged, painless, and not fused to each other or surrounding tissues. Body temperature 36.50C. No pathologies from other organs and systems were identified. Make a preliminary diagnosis?
*Sample answer:*Preliminary diagnosis: Chronic persistent herpesvirus infection, reactivation. Acute herpetic gingivostomatitis, localized form, mild severity.

Task 25. Patient V., 25 years old, complains of weakness, headache, sore throat, the presence of aphthous rashes on the mucous membrane of the upper lip, low-grade fever that appeared after an acute respiratory viral infection and persisted for 3

weeks Suffers from labial herpes, recurrent aphthous stomatitis. Over the past six months, he has noted 4 episodes of rashes lasting 5-7 days. In connection with this, she sought medical help. A preliminary diagnosis has been established: Chronic persistent herpesvirus infection. Acute gingivostomatitis. Describe the differential diagnostic search.
Response standard: differential diagnostic search: fungal infections (candidiasis), bacterial infections (staphylococci, streptococci); parasitic infections; HIV infection; syphilis; tuberculosis; herpetic infection; allergens (food allergies); chronic diseases (diabetes mellitus; anemia; diseases of the gastrointestinal tract).

Problem 26. A 25-year-old patient came to us due to 3 interrupted pregnancies at 6, 8 and 24 weeks. According to the presented medical documentation, after the second interrupted pregnancy, she was treated for recurrent EBV infection, receiving courses (10 days) of interferon therapy and valacyclovir. Despite this, the next pregnancy ended at 24 weeks with the death of a morphologically healthy fetus. From the anamnesis: the patient's brother died at the age of 20 from a stroke. The patient has suffered from migraines since childhood, for which she is seen by a neurologist on an outpatient basis. A preliminary diagnosis has been established: Primary antiphospholipid syndrome. Habitual miscarriage. Name the serological markers used to diagnose antiphospholipid syndrome.
Response standard: Serological markers of antiphospholipid syndrome: 1).
Antibodies to cardiolipin of IgG or IgM isotypes.
2). Antibodies to β2-glycoprotein I IgG and/or IgM isotypes.
3). Lupus anticoagulant
Markers must be identified on two or more study occasions at least 12 weeks apart.

Problem 27. Patient P., 4 years old. Complaints of frequent ARVI, 6-10 times a year (the child does not attend kindergarten), of a protracted nature, poor weight gain in the child, decreased appetite, bowel disorders such as persistent constipation. Repeatedly treated by gastroenterologists and pediatricians without effect. Objectively: The skin is pale. Reduced nutrition. Psycho-emotional development in accordance with age. Lymph nodes accessible to palpation are not enlarged. Hyperemia of the palatine arches. The tongue is moist and covered with a white coating. The stomach is swollen. Palpation of the abdomen is slightly painful along the large intestine. Diuresis is adequate. Stool once every 5-7 days after the enema. During examination: CBC: red blood cells 3.6 x 1012/l, hemoglobin 96 g/l; serum iron 4.0 μmol/l; Ig G to HSV - avidity index 86%, Ig G to CMV - avidity index 86%, no antibodies to EBV, ANCA, ASCA - negative, Ig A to gliadin 2.5 U/ml (normal up to 12 U/ml), Ig G to gliadin 96 g/l (normal up to 25 g/l). A preliminary diagnosis has been established: Celiac disease (gluten enteropathy), period of manifestation. Iron-deficiency anemia. What is the mandatory scope of immunological examination for suspected celiac disease (celiac enteropathy).

*Sample answer:*antibodies to tissue transglutaminase, to endomysium, to deaminated gliadin peptides.

Problem 28. A 33-year-old female patient complains of pain in the metacarpophalangeal joints, difficulty when trying to clench her hands into fists in the morning, weakness, and periodic loss of sensation in her fingertips in the cold. The above symptoms appeared about 4 weeks ago after hypothermia. Objectively: body temperature

36.7°C. Symmetrical swelling of all metacarpophalangeal joints of both hands, pain during passive movements in the metacarpophalangeal and proximal interphalangeal joints, a positive symptom of compression of the foot, whitening of the distal phalanges of the fingers in the cold, followed by their turning blue in the heat. Blood tests: leukocytes – 7.5x109/l, ESR – 38 mm/h. ANF – negative. Rheumatoid factor – negative. Make a preliminary diagnosis?*Response standard*: Preliminary diagnosis: Rheumatoid arthritis, seronegative, II degree of activity, functional failure I degree. Raynaud's syndrome.

Problem 29. Patient A., 45 years old, complains of severe pain when walking in the right knee and hip joints, intensifying towards the end of the day, and a decrease in the range of motion in the right hip joint. From the medical history: he has been suffering from chronic prostatitis with frequent exacerbations for 10 years, joint pain has been bothering him for the last 3 years, and 6 months ago he suffered from purulent conjunctivitis. Not examined, periodically takes NSAIDs with positive effects. Denies joint injuries. Objectively: Local pain on palpation of the right hip joint. The range of active movements is limited due to pain. The remaining joints are unremarkable. A preliminary diagnosis was made: Reactive arthritis of the right hip joint. Urethro-oculosynovial syndrome (Reiter's disease) Chronic prostatitis. What infection should be diagnosed by what immunological examination in this case?

Response standard: Chlamydia trachomatis infection: IgA, IgM, IgG to chlamydia trachomatis, antibodies (IgG) to the outer membrane protein momp, plasmidial protein pgp3, heat shock protein hsp60 chlamydia trachomatis. Additionally, PCR of urethral discharge is indicated.

Task 30. A 58-year-old woman sought medical help, suffering for the last 4 years from a paroxysmal cough with scanty sputum, frequent febrile fever, the absence of a lasting effect from multiple courses of antibiotic therapy, the use of antileukotriene drugs and inhaled glucocorticosteroids (and therefore was repeatedly treated courses of inpatient treatment, was constantly observed on an outpatient basis). From the anamnesis: heredity is aggravated (mother has bronchial asthma); Myalgia and arthralgia have been a concern since childhood; suffers from year-round allergic rhinitis. During examination: blood eosinophilia 11-12%, sputum 50-99%, IgE – 163 IU/ml. There is no data for helminthic infestation, infection with chlamydia and mycoplasma pneumonia, or activation of herpes group viruses. External respiration function: FEV1-31%, Tiffno index – 51.3, bronchodilator test is positive. Radiographically, there is a parietal darkening in the maxillary sinuses, and a subtotal darkening in the frontal sinus on the left. Spiral computed tomography reveals ground-glass changes in individual segments of both lungs. Fibrotracheobronchoscopy revealed signs of mucous endobronchitis. In addition, bacteriological culture of sputum and identification of specific IgE to Aspergillus fumigates were performed, and allergic bronchopulmonary aspergillosis was excluded. Determination of specific IgE (ImmunoCap) to a mixture of allergens weeds, meadow grasses, tree allergens, epidermal allergens, house dust mites, Alternaria - negative. She was examined by a neurologist and diagnosed with severe muscular-tonic syndrome and essential tremor. Make a preliminary diagnosis?
Sample answers: Preliminary diagnosis: Systemic eosinophilic vasculitis (Churg-Strauss syndrome), chronic progressive course.

Problem 31. Patient K., 44 years old, has moderate pain in the proximal interphalangeal joints of both hands, wrist and ankle joints in

rest, limited mobility, stiffness in these joints in the morning for up to 2 hours, convulsions, paresthesia of the upper extremities, general weakness and malaise. According to the medical history, pain and swelling in the proximal interphalangeal joints of the hands appeared about 5 years ago, with morning stiffness for 1 hour and limited mobility. Then the wrist and ankle joints were involved in the disease process (within 2 years), with an increase in the duration of morning stiffness. Periodically increased body temperature to 37.8°C and pain in the nail phalanges of the fingers. Over the past year I have reduced my weight by 12 kg. A preliminary diagnosis has been established: Rheumatoid arthritis. Name the classification criteria for rheumatoid arthritis.
Response standard: ACR/EULAR 2010 classification criteria for rheumatoid arthritis:

A. Clinical signs of joint damage (swelling and/or pain on objective examination) (0-5 points)
B. RF and ACCP tests (0-3 points, at least 1 test required)
C. Acute phase indicators (0-1 point, at least 1 test required)
D. Duration of synovitis (0-1 point)

Problem 32. The patient, 21 years old, a flight attendant, was admitted to the intensive care unit of the OKB with complaints of swelling of the legs and face, and an increase in temperature to 38.5°C. From May to August, the patient developed three boils, the last one in the groin area, after opening which a copious purulent discharge was obtained. During treatment with ampicillin, skin rash and itching appeared. Subsequently, anemia, acute renal failure, increased ESR, and leukopenia developed, for which the patient was treated in a district hospital. Upon admission: TAM: protein - 0.66%, sugar - none, leukemia - up to 10 in the field of view. UAC: Er-2.8x1012/l; Hb – 60g\l; ESR-75 mm/hour; lake-2x10^9/l; p/o - 12%; C - 37%; M - 7%; Lf - 8%. Immunogram: CD3+ - 52%; CD4+ - 35%; CD8+ - 17%; CD16+ - 16%; CD20+ - 24%; IgM – 0.9 g/l; IgG – 7.0 g/l; IgA – 1.2 g/l. Make a preliminary diagnosis.

Response standard: Septicemia, unspecified, secondary immunodeficiency of mixed type

Problem 33. Patient D., 4 years old, went to the clinic on the 6th day of illness with complaints of increased body temperature to 38.9, weakness, rash, nasal congestion, snoring during sleep and sore throat. We were treated at home with antibiotics (Amoxicillin). Objectively: temperature 38.6, condition of moderate severity. On examination: the skin is pale with elements of a maculopapular rash in the area of the cheeks, forearms, and thighs; when examining the pharynx - enlarged tonsils with white overlays in the lacunae; enlarged anterior cervical and posterior cervical lymph nodes are palpated. The abdomen is soft and painless on palpation, the liver protrudes from under the edge of the costal arch by 1.5 cm, the spleen by 1 cm. Stool and urination are normal. A preliminary diagnosis has been established: Infectious mononucleosis, typical form, moderate severity. Make a plan for additional examination.
*Sample answer:*Additional examination: Enzyme immunoassay: HSV1 and 2, CMV - IgM, IgG, avidity index; EBV – IgM, IgG VCA, IgG EA, IgG NA, assessment of immune status

Problem 34. A 41-year-old man complained of the gradual development of swelling of the lips, eyelids and slight swelling of the tongue, difficulty breathing after a minor injury to the oral cavity. After intramuscular injection of 8 mg of dexamethasone, the swelling disappeared only in the evening of the next day. Upon examination, no deviations from the norm were identified. From the anamnesis: for several years he has suffered from episodes of increased

blood pressure, for the relief of which he takes Captopril. For this reason, I did not seek help from a specialist; I chose the drug on my own. None of the close relatives made such complaints. A preliminary diagnosis was made: Angioedema, unspecified. Conduct additional laboratory testing.

*Sample answer:*Laboratory examination:
1) level of the C4 component of the complement system.
2) level and functional activity of the C1 inhibitor,
3) C1q concentration

Problem 35. During a tooth extraction in a 32-year-old patient in a dental office, after the administration of Ultracaine, symptoms such as severe pallor of the skin, anxiety, cold sweat, difficulty breathing, dizziness, and palpitations appeared. Blood pressure - 60/20 mm Hg. art, pulse - 100 per minute. A preliminary diagnosis was established: Anaphylactic shock. What type of allergic reaction is anaphylactic shock?

Response standard: Anaphylactic shock refers to IgE-mediated allergic reactions (immediate hypersensitivity). When the antigen is re-introduced into a previously sensitized body, mast cells degranulate and biologically active substances are released - histamine, serotonin, acetylcholine, kinins, heparin, prostaglandins, etc., which leads to a generalized dilation of small vessels and a lack of response to vasopressive substances.

Problem 36. An ambulance team was called to a 6-year-old boy. 1 hour after the injection of oxampa-sodium (ampicillin + oxacillin) (prescribed for the treatment of pneumonia by the local pediatrician), an itchy rash appeared all over the body, a sharp headache, and difficulty breathing. From the anamnesis it is known that at the age of 2 years the child suffered from acute purulent otitis, was treated with Augmentin, to which there was a reaction in the form of a short-term allergic rash, which disappeared after taking cetirizine. At the time of examination, the child was conscious and lethargic. There is a urticarial rash on the skin of the trunk and limbs. Exhalation is difficult, respiratory rate is 46 in 1 minute. On auscultation, breathing is carried out evenly on both sides, scattered fine bubbling and crepitating rales. The boundaries of the heart are not expanded, the tones are muffled. The pulse is thread-like, with a frequency of 140 per minute. Blood pressure – 70/30 mm Hg. Art. The abdomen is soft and painless on palpation. Urination is free. A preliminary diagnosis has been established. Define the concept of “anaphylactic shock”.

*Sample answer:*Anaphylactic shock of moderate severity. Medicinal allergies (penicillins). Anaphylactic shock (AS) is acute circulatory failure as a result of anaphylaxis, manifested by a decrease in systolic blood pressure (BP) below 90 mmHg. Art. or 30% of the working level and leading to hypoxia of vital organs.

Task 37. Calling an ambulance paramedic to your home. A 35-year-old patient complains of high fever, runny nose, body aches, headaches, weakness, painful spots and ulcers on the body. She fell ill 3 days ago and took aspirin as prescribed by her local doctor. On the 2nd day after taking aspirin, first painful red spots appeared on the skin, then blisters and ulcers. Objectively: the patient’s condition is serious, temperature 38.5°. On the skin of the back in the armpits, in the groin areas, multiple painful erythemas, blisters, erosions. The affected skin looks like it has been scalded by boiling water. The mucous membrane of the oral cavity is sharply hyperemic, and in some places there are erosions. Respiratory rate - 26 per minute, blood pressure -110/60, pulse -110 beats per minute, rhythmic. Stomach

soft, painless. Presumable diagnosis: Lyell's syndrome (acute epidermal necrolysis). Describe the immunopathogenesis of this condition.
Sample answer: The main pathogenetic mechanism of acute toxicity
An allergic reaction is the development of nonspecific generalized vasculitis (from serous to necrotic) as a result of types III and IV allergic reactions, in which the role of a hapten is played by a drug that is fixed to the proteins of the mucous membranes and skin.

Problem 38. A 25-year-old patient came to see an allergist-immunologist. Complaints: watery nasal discharge, nasal congestion, redness, lacrimation and itching of the eyes, worsening when going outside in July - August. Periodically uses suprastin tablets and vasoconstrictor nasal drops without lasting effect. Daily activity during this period is reduced, sleep is slightly disturbed if you sleep with the windows open. Heredity: my father had allergic rhinitis in childhood. Allergy history: food allergy in childhood. The diagnosis was made: Allergic rhinoconjunctivitis, seasonal, intermittent, moderate severity, exacerbation. What type of hypersensitivity reactions underlies the development of allergic rhinitis?

*Sample answer:*Type 1 hypersensitivity reaction: IgE-mediated (immediate hypersensitivity).

Problem 39. The parents of a 2-year-old child sought medical help due to acute itching spots on the body and swelling of the right ear. The night before the child ate a lot of strawberries. History of urticaria due to consumption of tomatoes and citrus fruits in large quantities. If you eat the above foods in small portions and rarely, no reactions occur. Objectively: the condition is satisfactory, active, itchy urticarial rashes on the skin of the extremities and back, swelling of the soft tissues of the right ear. Vesicular breathing in the lungs. Heart sounds are rhythmic and sonorous. The abdomen is soft and painless. Chair 1 time in 2 days, decorated, independently. Make a preliminary diagnosis.
Response standard: Acute urticaria. Angioedema edema. Food intolerance.

Problem 40. A 58-year-old patient, 12 days after the administration of antitetanus serum for a glass cut on his leg, had a fever of 38^0C, an itchy rash appears, abdominal pain, discomfort behind the sternum, aching joints, weakness. Allergy history is not burdened. The diagnosis was made: Serum sickness, moderate, mixed (visceral, articular) form. Explain the mechanism of the observed symptoms.

Response standard: Serum sickness is based on type III hypersensitivity reactions. In response to the first injection of a vaccine or serum, specific antibodies are synthesized in the body, which, upon repeated contact with the allergen, form circulating immune complexes that are fixed on the inner wall of blood vessels, which is accompanied by activation of complement (C3a, C4a and C5a), which leads to increased permeability vessels.

Problem 41. Patient M., 54 years old, with end-stage chronic renal failure, received a kidney transplant for health reasons. 10 days after the operation, the patient began to complain of weakness and malaise. Objectively: decreased diuresis, increased serum creatinine levels, proteinuria. The method of selective renal arteriography does not indicate disturbances in renal blood flow in the graft.

revealed. Ultrasound of the kidney also did not reveal any pathology from the urinary tract. What pathology can we think about in this case?
Response standard: Transplant (kidney) rejection reaction. The transplant rejection reaction develops according to types IV and II of hypersensitivity reactions according to Jell and Coombs.

Problem 42. Patient M., 48 years old, was admitted to the allergy department on a referral from a drug treatment clinic. Complaints: damage to the mucous membrane of the oral cavity, eyes, the appearance of blisters and dark red spots on the skin, an increase in body temperature up to 38°C. From the anamnesis: for 3 days the patient was treated at a narcological clinic for chronic alcoholism (more than 10 medications were prescribed: diazepam, vitamins B1, B6, clodine, etc.). There is no allergic history. Objectively: The general condition is severe, consciousness is clear. The mucous membranes of the eyelids are hyperemic with erosive and hemorrhagic lesions. There are blisters and erosions on the oral mucosa, and the red border of the lips is covered with hemorrhagic crusts. Skin: single spots, blisters all over the body, blisters with transparent contents on the palms and soles of the feet

limbs. Make a preliminary diagnosis.
Standard answers: Stevens-Johnson syndrome, moderate course.

Problem 43. Patient L., 48 years old, was admitted to the allergy department with complaints of a single erythematous rash in the area of the left hand and skin itching. From the anamnesis: the rash appeared 4 days after taking non-steroidal anti-inflammatory drugs (diclofenac) and a B complex of vitamins (milgamma). For the first time, such a rash (in the same place - the dorsum of the left hand) appeared 3 years ago after taking NSAIDs, and was treated on an outpatient basis. Objectively: skin – on the dorsum of the left hand there is a limited hyperemic spot of d = 6 cm, isolated erythematous rashes are noted in the abdominal skin area. Mucous membranes are clean. Make a preliminary diagnosis.

Standard answers: Fixed dermatitis of the hand area of exogenous etiology (drug-induced, due to diclofenac).

Problem 44. A 40-year-old patient developed dizziness and blurred vision after 15 minutes of intravenous excretory urography; after 2 minutes he stopped answering questions and lost consciousness. Objectively: the skin is pale, pulse 32/min, blood pressure 60/20 mm Hg. Art. From the anamnesis: he does not suffer from allergic reactions, no intravenous contrast agents were previously administered, there is no concomitant pathology. A preliminary diagnosis was made: Anaphylactoid shock. Explain the mechanism of the observed symptoms.
*Sample answer:*Radiocontrast agents cause direct activation complement system, as well as a direct (without the participation of the immune system) histamine-liberatory effect.

Problem 45. Patient S., 49 years old. sought medical help with complaints of the development of a massive purple infiltrate on the right buttock at the injection site of monomycin (on the 7th day), which was prescribed for the treatment of pneumonia. A preliminary diagnosis was made: Arthus phenomenon. Explain the mechanism of the observed symptoms.
*Sample answer:*Type 3 hypersensitivity reaction (immune complex) - local hypersensitivity reaction, a feature of which is the formation

immune complexes in the blood and damage to the microvasculature of tissues and organs.

Task 46. Patient N., 57 years old, PCR - SARS Cov-2 RNA (nasopharynx, oropharynx swab) - detected. On the 3rd day of the disease he was hospitalized in a Covid hospital. Complaints: increased body temperature to 38.6 C, dry cough, nasal congestion, anosmia, headache. Concomitant pathology: primary hypothyroidism, drug compensation (euthyrox 50 mcg/day), prediabetes (metformin 1000 mg/day). Excess weight (BMI 27.4 kg/m2). Objectively: SpO2 96%, respiratory rate 18-20 minutes, pulse 90 per minute, rhythmic, blood pressure 135/90 mm. Hg Art. During the examination: CT scan of the chest: no pathology of the lungs was detected, CT scan 0. CBC. Erythr – 5.16 * 1012/l, hemoglobin – 157 g/l, LC – 9.1 * 109/l, LF – 14.9%, mon – 13.4%, eosis – 1.4%, granules – 69.7%. Biochemical blood parameters. ALT – 30.3 U/l, AST 31 U/l, CRP – 70.4 mg/l, LDH – 309 U/l. Coagulogram – fibrinogen - 8.1 g/l, D-dimer 0.62 mg/l. The diagnosis was made: Coronavirus infection COVID - 19, confirmed, mild course. What causes the severity of the condition?
Response standard: The severity of the condition is due to the presence of concomitant pathology, an increase in CRP to 70.4 mg/l, fibrinogen to 8.1 g/l

Task 46. Patient A., 83 years old, PCR - SARS Cov-2 RNA (nasopharynx, oropharynx swab) – discovered. On the 5th day of the disease, she was hospitalized in a Covid hospital. Complaints: increased body temperature to 37.4 C, weakness, shortness of breath during exercise, headache. Concomitant pathology: ischemic heart disease. Heart rhythm disturbances of the type of persistent tachy-bradysystolic form of atrial fibrillation. Ventricular extrasystole grade 1 according to Ryan. CHF 2A, FC3. Objectively: SpO2 94%, respiratory rate 20-21 minutes, pulse 61-120 per minute, arrhythmic, blood pressure 105/60 mm. Hg Art. During examination: CT scan of the OGK. CT signs of bilateral polysegmental interstitial pneumonia of moderate to severe severity, CT2 (28%). UAC. Erythr – 4.72
* 1012/l, hemoglobin – 142 g/l, LC – 5.2*109/l, LF – 28.5%, mon – 18.4%, eosis – 0.9%, granules – 59.64%. Biochemical blood parameters. ALT – 30.2 U/l, AST 31.5 U/l, CRP – 15.1 mg/l, LDH – 387 U/l, creatinine 107 μmol/l, urea 4.16 mmol/l. Coagulogram – fibrinogen - 3.8 g/l, D-dimer level 1.58 mg/l. IL-6 level is 10.48 pg/ml (normal 0-7 pg/ml). The diagnosis was made: Coronavirus infection COVID - 19, confirmed, moderate severity. Bilateral polysegmental viral pneumonia, DN0. What causes the severity of the condition?
*Sample answer:*The severity of the condition is determined by the patient's age, the presence concomitant pathology, hemodynamic instability, lung damage, increased IL-6 to 10.48 pg/ml.

Task 46. Patient L., 15 years old, was admitted to the department with complaints of cough, difficulty breathing through the nose, attacks of difficulty breathing 2-3 times a day 3-4 times a week. After inhalation of salbutamol, my health does not improve. From the anamnesis of the disease it is known that recurrent attacks of difficulty breathing from the age of 2 years against the background of ARVI and during flowering of plants. He was not systematically treated or examined. In the first year of life there was atopic dermatitis. Objectively: the general condition is serious, the skin is pale, moderately moist, there is no rash. The chest is cylindrical in shape and symmetrically participates in the act of breathing. Nasal breathing is difficult. Percussion: a boxy tint of pulmonary sound over the entire surface of the lungs. Auscultation weakened breathing, dry wheezing over the entire surface of the lungs. Respiratory rate 28 per minute. Heart sounds are muffled, the rhythm is correct, heart rate is 80 beats per minute, blood pressure is 110/70 mm Hg. O2 96 Body T 36.6 C. Peak flowmetry indicators - 250 l/min. Diagnosis established: Bronchial asthma, allergic form, severe

course, severe exacerbation, threatened by asthmatic status. DN 1-2. Propose a plan of diagnostic measures in a specific situation.
Sample answer:
1) UBC, OAM, biochemical blood test
2) chest radiography, spirography, ECG
3) allergy chip (Alex or ISAC)

Task 47. A 25-year-old man consulted a doctor with complaints of periodic urticarial rashes on the chest and back over the last year, accompanied by severe itching. Such rashes were of various sizes, appeared for no apparent reason and disappeared after 6-12 hours, while simultaneously appearing on other areas of the skin of the back and chest. The “attacks” of skin rashes described above were repeated 2-3 times a week. The patient's history revealed 4 cases of angioedema, which resolved spontaneously within 48 hours. Objectively - there are urticarial itchy elements on the chest and back. The patient's general condition is satisfactory. The diagnosis was made: Chronic idiopathic urticaria, moderate course, exacerbation. Suggest an examination plan

Sample answer:
1) UBC, OAM, biochemical blood test
2) determination of antibodies to helminths: Giardia, roundworms, the causative agent of toxocariasis, opisthorchiasis, trichinella, echinococcus (ELISA).

Task 48. Patient M., 35 years old, upon admission complains of swelling and pain in the right ankle joint and small joints of the right foot, hands, morning stiffness for up to 30 minutes, redness of the skin over them, limitation of movements in them. From the anamnesis it was established that he suffered from sudden attacks of pain in the joints of the right foot for about 6 months. Self-administration of analgesics led to a slight decrease in pain. Objectively: swelling, redness of the skin and increased local temperature over the indicated joints. The range of active and passive movements is limited due to pain. Internal organs without significant visible changes. A preliminary diagnosis has been established: Rheumatoid arthritis. Make an examination plan.

Sample answer:
1) CBC, BAM, biochemical blood test, CRP
2) RF, ATsCP (Anti-CCP)
3) Assessment of immune status: with determination of subpopulations of T lymphocytes, natural killer cells and B lymphocytes, immunoglobulins A, M, G, CEC, NST test

Task 48.
A 28-year-old patient complains of itching of the skin, rashes with the phenomenon of lichenification, excoriation on the flexor surface of the elbow and knee joints, the back of the neck, and shins. These symptoms are observed from the age of 6, mainly in the autumn-spring period. The history contains indications of exudative-catarrhal diathesis in the first year of life. The diagnosis was made: Atopic dermatitis, adult form, moderate course, exacerbation. Schedule an additional examination.

Sample answer:
A) determination of eosinophilic cationic protein (ECP) and allergochip (Alex-2 or ISAC) B) bacteriological and mycological culture for microorganisms from the skin and mucous membranes

Task 49.

Patient K., 28 years old, complains of pain in the knee, wrist, metacarpophalangeal, ankle joints, sacroiliac joints, morning stiffness for up to 3 hours, increased body temperature up to 37C, weight loss. I took NSAIDs without effect. UBC: hemoglobin 104 g/l, er. – $3.5x10_{12}$/l, ESR 38 mm/h, CRP 32 mg/l, rheumatoid factor 45 mU/ml. Immunogram: CD3–81%, CD4–54%, CD8 – 19%, CD16 – 8%, CD19–12%, IgA – 3.1 g/l, IgM – 2.1 g/l, IgG – 14.3 g/l; CEC 130 USD; NST spont. 80 USD, NST stim. 142 USD, K steam. 1.7. What diseases require a differential diagnostic search?

*Sample answer:*rheumatoid arthritis, reactive arthritis, ankylosing spondylitis, paraneoplastic syndrome.

*Task 50.*Sick,18 years old, fell ill yesterday when the temperature rose to 38.5 C, headache, runny nose, and moderate pain when swallowing appeared. The condition upon admission is moderate, body temperature is 38.5 C. The tonsils are enlarged, hypertrophied, covered with a white coating, which is easily removed. There is a moderate increase and tenderness of regional lymph nodes up to 2 cm (submandibular, cervical, retropharyngeal). The liver is not enlarged. In the position on the right side, the edge of the enlarged spleen is palpated. Feces and urine are of normal color. Presumable diagnosis: infectious mononucleosis caused by the Epstein-Barr virus. Acute tonsillitis. Make a plan for additional examination to clarify the diagnosis and assess the severity.
Sample answer:

1) CBC, BAM, biochemical blood test, CRP
2) Determination of antibodies to herpes group viruses (ELISA): HSV 1 and 2 - IgM, IgG + avidity index, CMV - IgM, IgG + avidity index; EBV - IgM VCA, IgG VCA, IgG EA, IgG NA
3) PCR (smear from the nasopharyngeal mucosa) for HSV 1 and 2, EBV, CMV
4) Bacteriological culture from the nose and throat (before prescribing antibiotic therapy).

Task 51. A 45-year-old patient consulted a doctor at a dermatovenerological dispensary with complaints of the appearance of blisters in the red border of the lips and general malaise. The bubbles first appeared 4 years ago. For the first 4 years, rashes occurred only in winter, and then they began to appear at other times of the year. In the last year there have been exacerbations up to 8 times, relapses of rashes were accompanied by general malaise, fever up to 38 degrees. The diagnosis was made: Chronic persistent herpes virus infection with frequent exacerbations (herpes labialis). Make a plan for additional examination.
Sample answer:

1) CBC, biochemical blood test
2) Assessment of immune status: with determination of subpopulations of T lymphocytes, natural killer cells and B-lymphocytes, immunoglobulins A, M, G, CEC, NCT test.

Task 52. A 30-year-old patient consulted an allergist with complaints of an attack of suffocation, cough, impaired nasal breathing, and itchy eyes. The above symptoms appeared after I got a job as a stagehand at a circus. Since childhood, he had a history of suffering from allergic rhinitis, which only bothered him when in contact with cats. He notes that during the vacation period his condition improves significantly. The diagnosis was made: Bronchial asthma, allergic, newly diagnosed, mild persistent course. Allergic rhinitis, year-round, moderate severity. Question: What additional examination needs to be performed on the patient?

*Sample answer:*Phadiatop ImmunoCAP sIgE antibodies to a mixture of the most common inhalant allergens (tree pollen, grass, pet hair allergens, house dust mites, mold) or allergy chip (Alex-2 or ISAC).

Task 53. A 30-year-old patient is hospitalized for pneumonia. An injection of cefotaxime 0.1 IM was given. Immediately after the injection, the patient's vision became dark, her speech slowed down, she became dizzy, and lost consciousness. On examination, the skin is pale, moist, cold, blood pressure: 40/10 mm Hg. art., heart rate - 100 per minute. Establish a preliminary diagnosis.
*Sample answer:*Preliminary diagnosis: Anaphylactic shock, severe course. Drug allergy (cephalosporins).

Task 54. A 22-year-old female patient complains of periodically appearing (4-5 times a year) blisters on the red border of her lips and a painful whitish ulcer on the roof of her mouth. Real exacerbation within the last 3 days after hypothermia. Notes an increase in body temperature to 37.2₀By evening. Similar rashes have appeared in the same areas over the past 3 years. At the time of examination: on the border of the lips on the right there are groups of small bubbles, painful on palpation. The submandibular lymph nodes are enlarged and painful. On the mucous membrane at the border of the hard and soft palate to the left of the center there is erosion of irregular shape with polycyclic edges, surrounded by a rim of hyperemia, sharply painful on palpation. A preliminary diagnosis has been established: Chronic persistent herpes virus infection, exacerbation (herpes labialis). Aphthous stomatitis. What diseases should a differential diagnostic search be carried out in this clinical situation? *Sample answer:*The differential diagnostic search is carried out taking into account the unclear etiology of oral ulcers: viral (including HIV infection), bacterial (including syphilis), fungal, parasitic infection; allergic stomatitis; injuries and dental problems; autoimmune diseases (Crohn's disease, gluten intolerance); leukemia.

Task 55. Child, 12th day. The first urgent birth in a 27-year-old mother, exacerbation of genital herpes before childbirth. In the first days of life, the child had tremors in his hands; by the 5th day of life, jaundice of the skin appeared and increased. Neurological symptoms increased, convulsions and high-pitched crying appeared. On the 8th day, three single vesicular elements with transparent contents appeared on the body, and body temperature increased to 39 °C. The diagnosis was made: Congenital infection of the herpes simplex virus, generalized, severe. What additional examinations need to be ordered to verify the diagnosis:
*Sample answer:*1) study of the blood serum of the newborn and mother simultaneously quantitatively for Ig M and Ig G to HSV using ELISA;
2) examination of fingerprint smears from rashes on mucous membranes, skin, blood (leukoconcentrate), urine, liquor for the presence of HSV genetic material using the PCR method

Task 56. Patient I., 35 years old. He is observed by a gastroenterologist with a diagnosis of Crohn's disease, receives topical corticosteroids, azathioprine 100 mg orally. Over the course of 6 months, during treatment, she noted frequent (once a month) blistering rashes on the lips and wings of the nose; she took acyclovir orally with a short-term effect.
What is the reason for the development of VID in this case?
*Sample answer:*The cause of this condition is most likely caused by drugs drugs used to treat Crohn's disease. It is known that azathioprine

has an immunosuppressive effect - due to hypoplasia of lymphoid tissue, a decrease in the number of T-lymphocytes, impaired Ig synthesis, the appearance of atypical phagocytes in the blood and suppression of cell-mediated allergic reactions.

Task 57. Patient X, 40 years old. Observed by an oncohematologist with a diagnosis follicular lymphoma. Received 8 courses of chemotherapy according to the regimen bendamustine + rituximab (BR), with further maintenance therapy with rituximab once every 2 months - 2 years to date. Over the past year, she has noted frequent (once a month) exacerbations of rhinosinusitis, for which she was repeatedly treated with long courses of antibiotics without a positive effect. She was referred to a consultation with an allergist-immunologist to clarify the cause of this condition.

An examination was carried out: leukocytes - 3.9 × 10 * 9/l; L -20%; ESR - 18 mm/hour. Immunogram data:

Lymphocytes 20%			Immunoglobulins g/l	
Leukocytes 3.9x10x9/l			IgA	0.7
Population and subpopulation of lymphocytes			IgM	0.6
	%	Abs.	IgG	6.3
CD3	85			
CD4	50		NST test (cu)	
CD8	33		NST sp.	87
CD16	9		NST art.	145
CD19	1			
			Central Election Commission (cu)	40

Assess your immune status.
Sample answer: The processes of maturation and differentiation of T-lymphocytes are preserved (IRI=1.5). There is a decrease in the content of B-lymphocytes, hypogammoglobulinemia of classes A, M, G. The induced phagocytic activity of neutrophils in the NBT test is suppressed.

Task 58. Patient M., 41 years old, consulted an allergist-immunologist with complaints of low-grade fever for 6 months, general weakness, sweating, especially at night; lack of appetite; loss of body weight by more than 5 kg; periodically the temperature rises to 38.0-39.0 C and the appearance of a sore throat, dry mouth, and occasional abdominal pain. On examination: the condition is moderate, temperature - 37.0 0C, the skin is pale and clean. When palpating the lymph nodes, there is a symmetrical increase in the submandibular, anterior and posterior cervical, subclavian, cubital, and axillary groups of the lymph nodes. They are painful, the skin over them is not changed. The oropharynx is not hyperemic, the tonsils are loose, there are no plaques. The tongue is thickly coated with a grayish crumb-like coating. In the lungs - vesicular breathing. Pulse - 90 beats. per minute, rhythmic. Blood pressure - 110/70 mmHg. Heart sounds are rhythmic, the abdomen is soft, painful on palpation along the large intestine. The liver and spleen are not palpable. Stool and diuresis without any peculiarities. Preliminary diagnosis: AIDS. What examination is necessary to confirm the diagnosis?

Sample answer: First, an ELISA is performed - HIV p24 antigen and antibodies to HIV types 1 and 2 (HIV Ag/Ab Combo); The second stage (diagnosis confirmation) is carried out

immunoblotting, to determine the specific binding of HIV proteins to the corresponding individual HIV antibodies from the added serum.

Task 59. Girl M., 20 years old, was admitted to the infectious diseases hospital with complaints of a sore throat, fever up to 38.0 C0, nausea, heaviness in the right hypochondrium. From the medical history: he considers himself sick for about a week, when he first began to complain of a sore throat, worsening when swallowing, and elevated body temperature to 38-39°C. She started taking amoxicillin on her own, without effect. Objectively upon admission (7th day of illness): the condition is of moderate severity. Body temperature 38.7°C. The skin has a physiological color. In the oropharynx: the mucous membranes of the posterior wall of the pharynx and palatines are hyperemic, the tonsils are enlarged, there is a white coating in the lacunae, which can be removed with a spatula. The submandibular, mental and posterior cervical lymph nodes are enlarged to 3 cm, dense, moderately painful on palpation. The liver is palpated 2 cm below the edge of the costal arch. Examination data: ELISA: EBV VCA-IgM (+), VCA-IgG (+), EA-IgG (+), NA-IgG (-). ELISA: CMV IgM (-), IgG (+), IA - 65.71%. The diagnosis was made: Infectious mononucleosis caused by the Epstein-Barr virus. What diseases should be used for differential diagnosis?
*Sample answer:*Differential diagnosis is carried out with the following diseases: diphtheria of the oropharynx; adenoviral infection; lymphogranulomatosis; acute leukemia; primary HIV infection; cytomegalovirus infection; toxoplasmosis.

Task 60. Girl N., 5 days. The condition is serious - due to the phenomena infectious toxicosis, respiratory failure of II–III degree (on mechanical ventilation), intrauterine viral-bacterial infection: bilateral pneumonia, enterocolitis. A child from the 4th pregnancy, which proceeded with the threat of miscarriage. During pregnancy, the mother had CMV DNA detected in her blood, urine, and saliva. The birth was spontaneous, premature (at 37 weeks). On objective examination: the color of the skin is icteric with a gray tint, pronounced marbling, edematous syndrome. The abdomen is distended, the anterior abdominal wall is moderately edematous, hepatosplenomegaly (liver +5 cm from below the costal margin, spleen +6.5 cm from below the costal margin), scanty, acholic stool. The diagnosis was made: Congenital generalized cytomegalovirus infection. What additional laboratory tests need to be performed to confirm the diagnosis?
*Sample answer:*1) study of the blood serum of the newborn (and the mother, the substrate is blood serum) simultaneously quantitatively for Ig M and Ig G to CMV using ELISA; 2) examination of fingerprint smears from rashes on mucous membranes, skin, blood (leukoconcentrate), urine for the presence of CMV genetic material using the PCR method

Task 61. Boy M., 13 months. The child from the first pregnancy was born at term. Was breastfed for up to 6 months. Physical and neuropsychic development lags behind age. No preventive vaccinations were carried out. From the anamnesis it is known that the child suffered from pneumonia at the age of 7 months. Due to the severity of the condition, massive antibacterial therapy was carried out with positive dynamics. He suffered pneumonia again at 12 months, complicated by purulent otitis media. A laboratory study revealed a significant decrease in the y-globulin fraction in the proteinogram (1 g/l). What forms of primary immunodeficiencies should this disease be differentiated from?
Sample answer: This disease should be differentiated from primary immunodeficiencies with defects in antibody synthesis: CVID, selective immunoglobulin A deficiency, X-linked agammaglobulinemia (Bruton's disease); and diseases occurring with secondary hypogammaglobulinemia.

Task 62. Boy K., 15 years old. He was born full term and the pregnancy proceeded normally.

Preventive vaccination - on time and without any special features. Complains of a periodic dry cough and a rise in temperature to subfebrile levels. From the anamnesis it is known that up to three years of age, uncomplicated acute respiratory infections often occurred up to 8 times a year. At the age of 4 years, he was admitted to the hospital with a diagnosis of bilateral polysegmental pneumonia. Massive antibacterial therapy and intravenous immunoglobulin transfusion were carried out (without determining the level of serum immunoglobulins). Over the past year, she has noted acute respiratory infections up to 1-2 times a month, complicated by sinusitis. For this reason, I received courses of broad-spectrum antibacterial drugs up to 6 times a year.
Immunological examination data:

Lymphocytes%			Immunoglobulins g/l	
Leukocytes 10x9/l			IgA	0.05
Population and subpopulation of lymphocytes			IgM	1.5
	%	Abs.	IgG	12.1
CD3	76			
CD4	45		NST test (cu)	
CD8	28		NST sp.	80
CD16	12		NST art.	156
CD19	10			

Installed diagnosis: Selective deficit immunoglobulin A. Name diagnostic criteria for this pathology.
*Sample answer:*Diagnosis criteria – SelectiveIgA deficiency: Age over 4 years; IgA less than 0.07 g/l, IgG and IgM within reference values; exclusion of the secondary genesis of hypogammaglobulinemia.

Task 63. Patient V., 30 years old. She contacted an allergist-immunologist with complaints about the periodic appearance of spontaneous swelling of the facial skin (cheeks, eyelids), which disappeared on its own after 36-48 hours. According to the words, the swelling is pale, dense to the touch, accompanied by a feeling of fullness. I first noticed the appearance of edema 6 months ago. At the same time, I consulted a gynecologist due to menstrual irregularities, and COCs were prescribed. She was hospitalized once for angioedema of the skin in the facial area. Treatment was carried out with antihistamines and corticosteroids, without a positive effect, the swelling stopped on its own on the 2nd day. Preliminary diagnosis: PID with a defect in the complement system: Hereditary angioedema (HAE). What types of HAE do you know?
*Sample answer:*Classification of the disease:
- HAE type I is caused by a decrease in the amount and functional activity of C1-INH in plasma (85% of all cases of HAE);
- HAE type II is caused by a decrease in the functional activity of C1-ING, while the level of C1-ING remains within normal limits or is increased (15% of all cases of HAE);
- HAE type III with a normal level of C1-ING with a mutation in the gene: blood coagulation factor XII; plasminogen; angiopoietin 1; kininogen 1 (NAO - KNG1), etc.

Task 64. Patient A., 40 years old, contacted an allergist-immunologist with complaints of attacks (up to 2 times a day, 1-2 times a night) of suffocation, difficulty wheezing, cough with difficult to separate mucous sputum, shortness of breath with slight physical exertion , constant nasal congestion, mucopurulent nasal discharge. When collecting anamnesis, it was found that the patient noted exacerbations of the disease 3 times a day.

year, is associated with ARVI and taking NSAIDs (acetylsalicylic acid - ASA). An examination by an ENT doctor revealed polyposis sinusitis. Polypotomy was performed. There was a short-term improvement in the condition. A year later, the polyps recurred. Objectively: nasal breathing is difficult, expiratory shortness of breath, respiratory rate - 20 per minute. Auscultation - hard breathing, a lot of dry wheezing across all lung fields. Blood pressure - 130/70 mm Hg. Art. PS - 84 per min. Heart sounds are muffled and rhythmic. The abdomen is soft and painful. Spirography: VC-68% FEV1 – 52% of the required values, reversibility of obstruction (bronchodilator test with salbutamol 400 mcg) – 27%. Formulate the diagnosis: Bronchial asthma, moderate, persistent course, exacerbation of moderate severity. Polypous rhinosinusitis, recurrent. Intolerance to NSAIDs. Describe the mechanism of development of “aspirin-induced bronchial asthma”.

*Sample answer:*The disease is based on a genetically determined disorder metabolism of arachidonic acid. Important mediators involved in pathogenesis are cysteinyl leukotrienes (LT) - LTC4, LTD4, LTE4, which have pro-inflammatory and bronchoconstrictor properties. When exposed to various pathogenic stimuli (for example, respiratory viruses), patients with hypersensitivity to ASA/NSAIDs significantly increase the concentration of LT as a result of excessive activation of the formation of arachidonic acid from membrane phospholipids in inflammatory cells.

Task 65. Boy S., 1 year 2 months, was admitted with complaints of cough, shortness of breath, and increased body temperature to 38°C. From the anamnesis it is known that for the first time at the age of 1.5 months he fell ill with an acute respiratory infection, received intramuscular ampicillin, there was no effect, the child was hospitalized in the hospital with a diagnosis of acute bronchiolitis, moderate severity, DN 2 degrees. Upon admission, the child had abundant hemorrhagic pinpoint rashes throughout the body. In the UBC: red blood cells - 3.5 × 1012/l; Hb- 100g/l; leukocytes - 4.2×109/l; s / I neutrophils -68%; p/i neutrophils - 2%; eosinophils - 2%; monocytes - 5%; lymphocytes - 15%; ESR - 10 mm/hour; platelets - 75x109/l. The child was examined by a hematologist, who made the following conclusion: symptomatic coagulopathy, grade I anemia, normochromic, of mixed etiology. During the year of observation, he suffered from acute bronchitis, bilateral community-acquired pneumonia with a protracted course, and acute left-sided otitis media. Platelets in dynamics from 22x10/9/l to 66.7x10/9/l. Objectively: The skin is pale in color, the skin is dry to the touch, abundant hemorrhagic pinpoint petechial rashes all over the body, in places hematomas, elements of peeling and microcracks in places of folds, ecchymoses, blood in the stool. Make a preliminary diagnosis.

*Sample answer:*Primary immunodeficiency. Wiskott-Aldrich syndrome.

Task 66. A child aged 1 year and 9 months, often ill; at one year old the child suffered from pneumonia, was hospitalized for examination due to progressive imbalance and unsteadiness. Objectively: there are café-au-lait spots up to 1 cm in diameter on the skin of the body; there is a discolored area of skin on the back, dry skin. Spider veins and injection of scleral vessels are identified on the bulbar conjunctiva. Lymph nodes without features. The muscular system is developed, muscle strength and tone are reduced. Osteoarticular system: movements in the joints are full, painless. In the lungs, breathing is vesicular, carried out in all parts, there is no wheezing. Cardiovascular system: without pathology. The abdomen is round in shape, not enlarged, accessible to deep palpation in all parts, painless. The liver is at the edge of the costal arch, the spleen is not palpable. The stool is not regular, formed, without pathological impurities. There are no dysuric phenomena. Nervous system: ataxia, no meningeal symptoms. An ultrasound scan revealed thymic hypoplasia. By

MRI revealed cerebellar degeneration. A preliminary diagnosis has been established: Primary immunodeficiency. Ataxia-telangiectasia (Louis-Bar syndrome). Order additional laboratory testing to confirm the diagnosis.
*Sample answer:*alpha-fetoprotein, assessment of immune status, genome sequencing.

Task 67. A 3-year-old boy with a history of episodes of purulent lymphadenitis. Lymph node abscesses were opened independently, painlessly. A year ago I suffered from double pneumonia. Boils periodically appear on the skin. I was treated by a dermatologist for streptoderma. On examination, he was stigmatized: a wide protruding forehead, a wide nose and bridge of the nose, dry skin, redness on the elbows. Multiple scars on the neck and in the axillary region on the left after opening nodular abscesses. Primary immunodeficiency is suspected - Job's syndrome (hyper-IgE syndrome). Schedule additional laboratory testing.
Standard answer: CBC (eosinophils), IgE, assessment of immune status (including phagocytic activity of neutrophils), genome sequencing.

Task 68. A 6-month-old girl from the 3rd pregnancy, which occurred against the background of oligohydramnios, from 2 term births, with a weight of 3250 g, an Apgar score of 7-8 points, in satisfactory condition on the second day, was transferred to the intensive care unit in a state of moderate severity for due to the underlying disease – congenital heart disease, discharged on the 6th day.
Plastic surgery of the ventricular septal defect was performed, the postoperative period was difficult, sternal dehiscence, sepsis, and mediastinitis were noted, which resolved 28 days after the surgical procedure. The absence of the thymus was detected intraoperatively in the child. Condition on admission: general condition of moderate severity, active, mobile, reacts calmly to examination. The skin is pale, without pathological elements of the rash; there is a postoperative scar along the midline in the sternum area. Tissue turgor is reduced, the subcutaneous fat layer is thinned. The mucous membrane of the oropharynx is pink, there are no plaques. Nasal breathing is free. A group of small cervical lymph nodes that are not fused to each other and the surrounding tissues is palpated. What disease can be suspected in a child?
*Sample answer:*Primary immunodeficiency - DiGeorge syndrome.

Task 69. A 52-year-old woman complained of a rash located under the left mammary gland, surrounded by hyperemia, representing blisters, eroded in places, some healing in the form of crusts. The patient complains of pain accompanying the rash, increased skin sensitivity, and itching. Formulate a diagnosis.

*Sample answer:*Acute herpetic infectionvirus Varicella Zoster.

Task 70. A 35-year-old man turned to an allergist-immunologist with complaints of frequent colds, accompanied by a rise in temperature to 38 degrees and herpetic rashes on the lips. During the interview, it turned out that six months ago the man suffered from a mild form of coronavirus infection, however, according to the patient, he had no time to be sick and was treated with antibiotics (he doesn’t remember the name) and intramuscular injections of dexamethasone. He recovered after 5 days, but since then he has been sick every 2-3 weeks, each time he takes antibiotics and injects dexamethasone. The diagnosis was made: Chronic persistent herpes virus infection with frequent exacerbations (herpes labialis). Secondary immunodeficiency state, drug-induced (GCS). Describe the mechanism of development of an immunodeficiency state in a specific clinical situation.

*Sample answer:*Long-term use of corticosteroids inhibits the pathwaysNF-κB with subsequent suppression of the formation of pro-inflammatory cytokines IL-1, IL-2, IL-6, TNF-α and IFNγ and prostaglandins; cause anergy and apoptosis of lymphocytes, the release of immature neutrophils from the bone marrow, which is expressed in lymphopenia and neutrophilia. As a result, the cellular response decreases, the production of pro-inflammatory cytokines, the activity of phagocytosis and chemotaxis decreases, which contributes to the development of opportunistic infections.

Task 71. A 50-year-old woman complained of frequent respiratory diseases (9 times a year), long-term acute respiratory infections. Exacerbation of labial herpes monthly. From the anamnesis it is known that 1.5 years ago the patient was diagnosed with rheumatoid arthritis, seronegative. Receives therapy with methotrexate 20 mg/week IM for 1 year. CBC: leukocytes – 8.2 ×10^9/l; lymphocytes – 20%; monocytes – 10%; ESR - 10 mm/hour. Total protein – 60 g/l, CRP – 5.5 mg/l (N=1-6 mg/l). Assessment of immune status: CD3+-55%, CD4+-39%, CD8+ -16%, CD16+-18%, CD19+-17%, IgA- 1.0 g/l, IgM- 1.4 g/l, IgG-10 ,1 g/l, CEC - 50 c.u. Assess your immune status.
*Sample answer:*Maturation processes T lymphocytes oppressed. Processes T-lymphocyte differentiation is not impaired, IRI is more than 2. The content of natural killer cells is increased. The number of B-lymphocytes is within the reference values, their functional activity is preserved.

Task 72. Woman, 50 years old. She complained of periodic increases in temperature up to 37.3, weakness, fatigue for 6 months, and the appearance of labial herpes on the lips once every 2 months. From the anamnesis it is known that 6 months ago she suffered from severe influenza, after which the above complaints appeared. Before the flu, labial herpes bothered me once a year, more often after hypothermia. On examination, the patient's condition was relatively satisfactory, temperature 37.0°C. The skin is pale, mucous membranes are clean, nasal breathing is free. The pharynx is calm, tonsillar lymph nodes up to 2 cm, posterior cervical lymph nodes up to 1.5 cm in chains. The liver is not enlarged, the spleen is not palpable. Stool and urine output are normal. The diagnosis was made: Chronic persistent herpes virus infection. Secondary immunodeficiency state. Schedule an additional examination.
*Sample answer:*CBC, BAM, BAC, assessment of immune status

Task 73. A 60-year-old patient came to the clinic with complaints of a dry cough, general malaise, fatigue during physical activity, and frequent lingering respiratory diseases. I often noticed streaks of blood in my sputum and I lost weight. Weight loss is associated with frequent exacerbations of bronchitis. A month ago I was treated for candidiasis of the oral mucosa. Over the past 6 months, frequent dyspeptic disorders have been bothering me. Fluoroscopy revealed an irregularly shaped shadow in the hilar zone of the left lung. During bronchoscopy, the left lower lobe bronchus is narrowed and a tumor is visible in its lumen, bleeding when touched. Tomography of the lung confirmed the presence of a tumor in the root of the lung. No metastases were found in the mediastinal lymph nodes. An additional laboratory examination revealed signs of anemia, a decrease in the content of leukocytes, platelets, IgG, IgM, IgA. Within what syndrome did the symptoms of immune dysfunction develop?
*Sample answer:*Clinical signs of immune dysfunction (infectious, asthenic, hematological, dyspeptic syndrome) arose within the framework of paraneoplastic syndrome (often accompanied by a malignant tumor).

Task 74. Patient T., 7 years old, suffered infectious mononucleosis 5 months ago. During this time, I suffered from ARVI twice, and suffered from lacunar tonsillitis twice.

detection of atypical mononuclear cells in a blood test - 8%. On examination, the patient was in moderate condition, temperature 37.4°C. There is moderate nasal congestion without discharge, tonsillar lymph nodes up to 2 cm, posterior cervical lymph nodes up to 1.5 cm in chains. Liver +1 cm, spleen +1 cm. Serological examination showed IgM VCA (+), IgG EA (+), IgG NA (+). Positive result for EBV DNA in blood lymphocytes and saliva in PCR. Formulate a preliminary diagnosis:
*Sample answer:*Infectious mononucleosis Epstein-Barr viral etiology, protracted course with relapses.

75. A 40-year-old woman consulted an allergist-immunologist with complaints of recurrent angioedema of the face and upper extremities. The first swelling occurred six months ago; the patient cannot remember any provoking factors; then the swelling recurred once a month. Recently, episodes have become more frequent - 1-2 times a week. As described, the swelling is dense and cold. A week ago, she was hospitalized with increasing angioedema of the face; she was treated with glucocorticosteroids, without effect; while taking prednisolone, the swelling of the face continued to increase, and self-limited after 2 days. Objectively: the patient is emotionally excited, actively gesturing, and has low nutrition. Concomitant chronic diseases: autoimmune thyroiditis, is on replacement therapy with thyroid drugs (euthyrox). She is seen as an outpatient by a dermatologist for vitiligo, and notes an increase in the area of discolored skin over the past 3 years. A quantitative and functional examination of C1, an inhibitor, was carried out within the reference values. A preliminary diagnosis was made: Acquired angioedema. Suggest the reason for the development of this condition.

*Sample answer:*since the patient suffers from comorbid autoimmune pathology: vitiligo and autoimmune thyroiditis. On examination, clinical signs of hyperthyroidism and progression of vitiligo are noted. One can assume decompensation of the autoimmune process, the formation of antibodies to the C1 inhibitor and the development of acquired angioedema.

CRITERIA for assessing competencies and rating scales

Grade "unsatisfactory" (not accepted) or absence formation competencies	**Grade "satisfactorily" (passed) or satisfactory (threshold) level of development competencies**	**Rated "good" (passed) or sufficient level development competencies**	**Excellent rating (passed) or high level development competencies**
failure to student on one's own demonstrate knowledge when solving assignments, lack independence in application of skills. Absence availability confirmation formation competencies indicates negative development results academic discipline	student demonstrates independence in application of knowledge skills and abilities to solve educational tasks in full According to sample given teacher, by tasks, solution of which there were shown teacher, it should be considered that competence formed on satisfactory level.	student demonstrates independent application of knowledge, skills and abilities when deciding tasks, tasks similar samples that confirms Availability formed competencies for higher level. Availability such competence on sufficient level indicates sustainable fixed practical skill	student demonstrates ability to full independence in choosing a method solutions non-standard assignments within disciplines with using knowledge, skills and skills, received as in development progress of this discipline, and adjacent disciplines should count competence formed on high level.

Criteria for assessing test control:

percentage of correct answers	Marks
91-100	Great
81-90	Fine
70-80	satisfactorily
Less than 70	unsatisfactory

When grading tasks with multiple correct answers, one error is allowed.

Interview assessment criteria:

Mark	**Descriptors**		
	strength of knowledge	**ability to explain (introduce) the essence of phenomena, processes, do conclusions**	**logic and subsequence answer**
Great	strength of knowledge, knowledge of basic processes subject matter being studied areas, the answer differs in depth and completeness disclosure of the topic;	high skill explain the essence phenomena, processes, events, draw conclusions and generalizations, give reasoned	high logic and subsequence answer

	possession terminological apparatus; logic and consistency answer	answers, give examples	
Fine	solid knowledge of the basic processes of the studied subject area, differs in depth and completeness of the topic; possession terminological apparatus; free mastery of monologue speech, but one or two inaccuracies in the answer are allowed	ability to explain essence, phenomena, processes, events, draw conclusions and generalizations, give reasoned answers, give examples; however one or two inaccuracies in the answer are allowed	logic and subsequence answer
satisfactory really	satisfactory process knowledge subject matter being studied areas, answer, different insufficient depth and completeness of the topic; knowledge of basic theoretical issues. Several are allowed errors in content answer	satisfactory ability to give reasoned answers and provide examples; satisfactorily formed analysis skills phenomena, processes. Several are allowed errors in content answer	satisfactory logic and subsequence answer
will not satisfy really	poor knowledge of the subject area being studied, shallow opening Topics; poor knowledge basic theoretical issues, poor analysis skills phenomena, processes. Serious errors in content answer	inability to give reasoned answers	absence logic and sequences answer

Criteria for assessing situational tasks:

Mark	**Descriptors**			
	understanding Problems	**analysis situations**	**skills solutions situations**	**professional thinking**
Great	complete implication problems. All requirements, submitted to adania, completed	high benefit analyze situation, draw conclusions	high benefit select method solutions problems, faithful solution skills situation	high level professional thoughts
Fine	complete implication	benefit analyze	benefit select method	residual level professional

	problems. All requirements, submitted to adania, completed	situation, draw conclusions	solutions problems faithful solution skills situation	thoughts. drops one or two precision in the answer
satisfactory really	astastic implication problems. majority requirements declared to adania, completed	satisfactory 1st ability analyze situation, draw conclusions	satisfactory e skills solutions situations, falsity with choosing a method solutions to the problem	residual level professional thoughts. falls more a bunch of inaccuracies in answer or there is an error in the sequence solutions
will not satisfy really	misunderstanding problems. legs requirements, submitted to I hope not completed. No Tveta. Did not have experiments to solve hello	izkaya benefit analyze situation	insufficient solution skills situation	missing