Ministry of Science and Higher Education of the Russian Federation
Ministry of Education and Science of the Kyrgyz Republic
Interstate Educational Organization of Higher Education
Kyrgyz-Russian Slavic University
named after the first President of the Russian Federation B.N. Yeltsin

ASSESSMENT TOOLS FUND (WCF)

in the discipline "OCCUPATIONAL DISEASES"

Level of higher education	SPECIALIST
Field of study (code)	310501_20_6 ld in.plx Specialty 31.05.01. - Russian Federation, 560001 - KR General Medicine (for foreign students)
Total labor intensity	2 credits (72 hours)
Course, semester	4 year, 8 semester
Intermediate Attestation Form	Credit (8th semester)

The fund of assessment tools is intended to control the knowledge of students in the direction of training (specialty) MEDICAL DOCTOR in the discipline "OCCUPATIONAL DISEASES"

The fund of assessment tools was considered and approved at the meeting of the Department of **Therapy-1 of the specialties of PD and SD**

Minutes No1 dated 08/27/2024

Head of the Department
Therapy-1 specialties PD and SD Suranova G.Zh
Name of the Department Signature decryption

Performers: Suranova G.Zh.
Candidate of Medical Sciences, Assoc
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1. LIST OF COMPETENCIES WITH AN INDICATION OF THE STAGES OF THEIR FORMATION IN THE PROCESS OF MASTERING THE DISCIPLINE

PC-6: Ability to identify the main pathological conditions, symptoms, disease syndromes, nosological forms in patients in accordance with the International Statistical Classification of Diseases and Related Health Problems – X revision (ICD-10)

Stage	To know	Be able to	Own
Level 1	Clinical picture, diagnostic criteria and complications of the most common occupational diseases (pneumoconiosis, dust bronchitis, vibration disease, occupational intoxication)	Identify major pathological symptoms and syndromes of occupational diseases based on complaints, occupational history and physical examination	Skills in identifying pathological symptoms and syndromes characteristic of occupational diseases
Level 2	Etiology, pathogenesis and classification of nosological forms of occupational diseases; differential diagnostic criteria for occupational and non-occupational diseases with a similar clinical picture	Draw up a plan of laboratory and instrumental examination to clarify the nosological form of an occupational disease; interpret the results of functional diagnostics of the respiratory and nervous system	Skills in formulating a preliminary and clinical diagnosis of an occupational disease in accordance with ICD-10, indicating the relationship with production
Level 3	–	Determine the algorithm for making a clinical diagnosis of an occupational disease, taking into account ICD-10; formulate a detailed clinical diagnosis with the justification of the professional nature of the pathology	Skills in building a differential diagnosis between occupational and non-occupational diseases with a similar clinical picture; the skills of syndromic deciphering of the diagnosis

PC-10: Readiness to provide medical care for sudden acute diseases, conditions, exacerbation of chronic diseases that are not accompanied by a threat to the patient's life and do not require emergency medical care

Stage	To know	Be able to	Own
Level 1	Clinical manifestations of acute occupational intoxications (carbon monoxide, lead, mercury, organochlorine compounds, pesticides) and exacerbations of chronic occupational diseases	Link symptoms, occupational history and laboratory findings into a coherent clinical whole; to establish a connection between the acute state and the impact of the production factor	Skills in timely detection of an acute occupational disease or exacerbation of a chronic occupational disease
Level 2	Methods of providing medical care for acute occupational intoxications; Principles of antidote therapy for acute poisoning with industrial poisons	Prescribe the necessary medications and measures in the provision of primary care for acute occupational intoxications (including antidotes); assess the severity of the condition and determine indications for hospitalization	Skills of etiological and pathogenetic therapy in the treatment of occupational diseases, taking into account the type of industrial poison and the mechanism of its action
Level 3	General principles of treatment of occupational	To assess the stage and degree of functional disorders of the	• Skills in providing emergency medical care for

Stage	To know	Be able to	Own
	diseases, taking into account their etiology and pathogenesis; The main pharmacological groups used in occupational pathology and their interaction	affected organs; prescribe treatment and rehabilitation measures appropriate to the stage of the disease	acute occupational diseases (intoxications) on an outpatient basis and at work; skills in solving issues of working ability

PC-8: Ready for the management and treatment of patients with various nosological forms on an outpatient and day hospital basis

Stage	To know	Be able to	Own
Level 1	Etiology, pathogenesis, clinical presentation of the main occupational diseases with various nosological forms	Correctly identify this occupational disease	Skills in analyzing various types of treatment of patients with occupational diseases
Level 2	Main types and methods of treatment of patients with occupational diseases of various nosological forms	To compare different types and methods of treatment of patients, to develop a treatment plan	Methods of search and comparison of different methods of treatment of patients with different nosological forms of occupational diseases
Level 3	Methods of Management and Treatment of Patients with Occupational Diseases in Outpatient and Day Hospital Settings	Manage and treat patients with occupational diseases on an outpatient and day hospital basis	Skills in the management and treatment of patients with occupational diseases in outpatient and day hospital conditions

2. STRUCTURE OF BLOCKS OF ASSESSMENT TOOLS

Block	Table of Contents	Competencies	Week	Time
Block A	Tests for knowledge of etiology and pathogenesis: pneumoconiosis (silicosis, anthracosilicosis, asbestosis, pneumoconiosis of electric welders); dust bronchitis; occupational bronchial asthma; vibration sickness; occupational intoxication with pesticides, mercury, lead, benzene; criteria for etiological diagnosis; Differential diagnosis	PK-6 (U1–U2) PK-8 (U1–U2) PK-10 (U1–U2)	1–2, 5, 7–8	30 min
Block B	Situational tasks: supervision of patients with pneumoconiosis; organization of preliminary and periodic medical examinations; examination of working capacity; diagnosis and treatment of vibration disease; emergency care for acute occupational intoxications; Development of a treatment plan	PK-6 (U2–U3) PK-8 (U2–U3) PK-10 (U2–U3)	3–4, 5, 7–8	60 min
Block C	Practice-oriented tasks – simulation scenarios: writing a medical history with a professional history; filling in the VTEK Certificate of Examination; sanitary and hygienic characteristics of the workplace; clinical examination for vibration disease; emergency care for intoxication	PK-6 (U2–U3) PK-8 (U3) PK-10 (U2–U3)	5–8	40 min
Block D	Attestation questions (test tickets): comprehensive management of patients with pneumoconiosis; prevention of occupational diseases (technical, organizational, medical measures); medical and occupational rehabilitation; selection of rational types of labor; Deontology of an occupational pathologist	PK-6 (U1–U3) PK-8 (U1–U3) PK-10 (U1–U3)	8	120 min

3. TECHNOLOGICAL MAP OF THE DISCIPLINE

Module	Name	Type of control	Form of control	Min	Max	Week
Module 1	The subject of occupational pathology. Dust diseases	Current	Frontal questioning, testing (Block A), practical skills (professional anamnesis), attendance, CPS	2	4	1–2
		Boundary Control No1	Oral/written questioning, situational task (diagnosis of pneumoconiosis), practical skills (sanitary and hygienic characteristics)	6	10	5
Module 2	Occupational diseases due to physical and chemical factors	Current	Frontal questioning, testing (Block A), practical skills (examination in vibration sickness), attendance, SRS	2	4	3–4
		Boundary Control No2	Oral/written questioning, situational task (emergency care for intoxication), practical skills (filling out the VTEK)	6	10	8
TOTAL for the semester				**16**	**28**	
Intermediate control (Credit)				**12**	**20**	**8**
Semester Ranking				**60**	**100**	

4. CALENDAR SCHEDULE WITH ASSESSMENT TOOLS

Week	Topics	Type of activity	Assessment tool
1	Introduction to the Clinic of Occupational Diseases. Pulmonary dust diseases	Lecture, practical	Block A (tests); PK-6 U1, PK-8 U1
2	Pneumoconiosis (silicosis, anthracosis, asbestosis). Occupational bronchitis, asthma	Lecture, practical	Block A (tests); PK-6 U1–U2, PK-8 U1–U2
3	Vibration sickness. Occupational diseases of the ODA	Practical	Block B (situational tasks); PC-6 U2, PC-10 U1–U2
4	Intoxication with pesticides, mercury, lead, benzene. Emergency care	Practical	Block B (situational tasks); PC-10 U2–U3, PC-8 U2
5	Boundary control No1 + Pathogenesis of pneumoconiosis. Etiological diagnosis	Practical, SRS	Block A + Block B (boundary); Block C; PC-6 U1–U3
6	Medical history. Differential diagnosis of lead intoxication. Vibration disease	Practical, SRS	Block C (simulations, medical history); PC-6 U2–U3, PC-10 U2
7	Occupational diseases of the upper extremities. Radiation sickness. Preparation for certification	Practical, SRS	Block A + Block B (repetition); PC-8 U2–U3
8	Midterm control No2 + Standings	Practical, credit	Block A (final) + block B + block C + block D; All competencies

5. TYPICAL CONTROL TASKS

BLOCK A. Reproductive Level (Knowledge) – Completion Time: 30 minutes

Oral questions

Section 1. The subject of occupational pathology. Dust diseases

1. 1. List the main clinical forms of silicosis and their radiological characteristics. (PC-6, U1; PC-8, U1)
2. 2. Characterize the etiological factors of occupational bronchial asthma. (PC-6, U1)
3. 3. What are the criteria for the etiological diagnosis of pneumoconiosis? (PC-6, U2)
4. 4. Describe the principles of conducting preliminary and periodic medical examinations of workers. (PC-8, U1)
5. 5. What are the main concepts of VTE in occupational diseases? (PC-8, U2)

Section 2. Occupational diseases due to physical and chemical factors

6. 6. What are the criteria for diagnosing vibration disease according to ICD-10? (PC-6, U2)
7. 7. List the main routes of lead entry into the body and the mechanisms of its toxic action. (PC-6, U1; PC-10, U1)
8. 8. What are the cardinal symptoms of micromercurialism and classical mercury intoxication? (PC-10, U1)
9. 9. Describe the algorithm for providing first aid for acute occupational intoxications. (PC-10, U2)
10. 10. List the basic principles of rehabilitation and employment in occupational diseases. (PC-8, U3)

Test tasks (closed type)

Section 1: Dust Diseases (Tests 1-15)

Test 1. The most characteristic X-ray sign of stage I silicosis is: (PC-6, U1)

a) strengthening of the pulmonary pattern

b) small-focal (1–5 mm) intense shadows with clear contours

c) large-focal shadows

d) diffuse pneumosclerosis

Correct answer: b

Explanation: Stage I silicosis: small-focal shadows (1-5 mm) in the upper and middle lobes, increased pulmonary pattern. Stage II is the fusion of shadows, stage III is massive fibrosis.

Test 2. The main pathogenetic mechanism of silicosis development is: (PC-6, U1)

a) allergic inflammation

b) toxic damage to hepatocytes

c) reaction to crystalline silicon dioxide → fibrosis

d) bronchospasm

The correct answer is: in

Explanation: Crystalline SiO_2 is phagocytosed by macrophages → their death → the release of fibrogenic factors → silicotic nodule.

Test 3. Asbestosis is characterized by the following difference from silicosis: (PC-6, U2)

a) damage to the upper lobes

b) pleural changes (plaques), basal fibrosis

c) a tendency to thrombosis

d) kidney damage

Correct answer: b

Explanation: Asbestosis: basal fibrosis, pleural plaques, pleural mesothelioma. Silicosis: upper-middle lobes, silicotic nodules.

Test 4. Occupational bronchial asthma is caused by: (PC-6, U1)

a) industrial dust only

b) allergens of industrial origin (isocyanates, latex, flour, biocides)

c) noise

d) vibrations

Correct answer: b

Explanation: Occupational AD is a consequence of sensitization to occupational allergens. Diagnosis: PST, skin tests, specific IgE.

Test 5. A mandatory document for establishing the relationship between the disease and the profession is: (PC-6, U2; PC-8, U1)

a) Outpatient card only

b) sanitary and hygienic characteristics of the workplace

c) only medical history

d) ECG only

Correct answer: b

Explanation: The sanitary and hygienic characteristics of the workplace are a key document for establishing the occupational nature of the disease.

Test 6. Anthracosilicosis develops in workers: (PC-6, U1)

a) oil enterprises

b) coal mines

c) pharmaceutical plants

d) food industry

Correct answer: b

Explanation: Anthracosilicosis is a mixed pneumoconiosis from coal-flint dust in coal mine miners; combines signs of anthracosis and silicosis.

Test 7. Preliminary medical examinations upon admission to work are carried out in order to: (PC-8, U1)

a) determination of blood group

b) identification of contraindications to work in harmful conditions

c) registration of a sick leave certificate

d) definition of disability

Correct answer: b

Explanation: A preliminary examination reveals the presence of diseases that are contraindications to work with a specific harmful factor.

Test 8. Periodic medical examinations are carried out in order to: (PC-8, U1; PC-6, U2)

a) detection of acute infectious diseases

b) early detection of occupational and work-related diseases, prevention of

c) registration of a sanatorium-resort card

d) determination of the health group

Correct answer: b

Explanation: Periodic examinations: early detection of occupational diseases, dynamic monitoring of the health of workers in harmful conditions.

Test 9. In berylliosis, the most typical lesions are: (PC-6, U1)

a) kidneys

b) lungs (granulomatosis) and skin

c) musculoskeletal system

d) bladder

Correct answer: b

Explanation: Berylliosis is a systemic granulomatosis with predominant damage to the lungs (chronic berylliosis) and skin. The lesion is similar to sarcoidosis.

Test 10. Dust bronchitis - in contrast to chronic bronchitis of a smoker - is characterized by: (PC-6, U2)

a) lack of connection with the profession

b) connection with professional dust exposure, improvement on vacation

c) higher effectiveness of antibiotics

d) predominant damage to the upper respiratory tract

Correct answer: b

Explanation: Criterion for etiological diagnosis: deterioration at work, improvement during vacation; Professional experience > 5-10 years when exposed to non-fibrogenic dust.

Test 11. FVC for stage I silicosis: (PC-6, U1)

a) sharply reduced (< 50%)

b) normal or slightly reduced (> 80%)

c) increased

d) never changes

Correct answer: b

Explanation: In uncomplicated stage I silicosis, FVD disorders are moderate or absent; increase with progression (restrictive, mixed type).

Test 12. Pneumoconiosis of electric welders develops from the impact of: (PC-6, U1)

a) cement dust

b) fine aerosol of iron, manganese and other metal oxides

c) asbestos dust

d) coal dust

Correct answer: b

Explanation: Pneumoconiosis of electric welders is metalloconicosis from the condensation aerosol of iron oxides (siderosis) with impurities of manganese, chromium and silicon oxides.

Test 13. Contraindications to work with silicon-containing dust are: (PC-8, U1)

a) obesity of the first degree

b) active tuberculosis or long-term consequences of tuberculosis

c) hypertension of the first degree

d) myopia

Correct answer: b

Explanation: Tuberculosis (active and secondary changes), chronic respiratory diseases with respiratory disorders are absolute contraindications to working with silicon dust.

Test 14. Farmer's lung is: (PC-6, U1)

a) pneumoconiosis from grain dust

b) exogenous allergic alveolitis from thermophilic actinomycetes (moldy hay)

c) occupational bronchial asthma

d) chronic bronchitis

Correct answer: b

Explanation: Farmer's lung is allergic alveolitis from inhalation of spores of thermophilic actinomycetes from moldy hay (Faenia rectivirgula, Thermoactinomyces vulgaris).

Test 15. Disability is established in silicosis if: (PC-8, U2-U3)

a) there are X-ray changes without functional disorders

b) there are persistent disorders of the FVD II-III degree, limiting the ability to work

c) the patient works in the mine

d) work experience > 10 years

Correct answer: b

Explanation: Disability in occupational diseases is determined by the degree of permanent disability: physical disability disorders II-III, pronounced functional disorders.

Section 2: Occupational Diseases from Physical and Chemical Factors (Tests 16–30)

Test 16. Thomsen's sign in vibration sickness is: (PC-6, U2)

a) pain on palpation of the elbow joint

b) pain during percussion of the tubular bones of the hand

c) morning joint stiffness

d) "snapping" finger

Correct answer: b

Explanation: Thomsen's sign is tenderness on percussion of the tubular bones of the hand; It is characteristic of vibration sickness. Welsh's sign – pressure on the palm causes numbness.

Test 17. The classification of vibration sickness includes the following stages: (PC-6, U2)

a) I (initial), II (moderately pronounced phenomena), III (pronounced phenomena)

b) only two stages

c) only one stage

d) four stages without gradation

The correct answer is: a

Explanation: Vibration disease: I – initial manifestations (paresthesias, angiospasm), II – moderate (persistent angiospasm, sensory disorders), III – pronounced (trophic disorders).

Test 18. Chronic lead intoxication is primarily manifested by damage to: (PC-10, U1)

a) osteoarticular system

b) hematopoietic system (anemia with basophilic granularity) and nervous system

c) kidneys and bladder

d) hearts

Correct answer: b

Explanation: Lead intoxication: anemia (hypochromic, with basophilic granularity of red blood cells), lead border, lead colic, lead encephalopathy/neuropathy.

Test 19. Laboratory marker of chronic lead intoxication: (PC-6, U2; PC-10, U1)

(a) Troponin I elevation

b) basophilic granularity of erythrocytes, increased coproporphyrin in urine, blood lead > 2 μmol/l

c) TSH increase

d) proteinuria

Correct answer: b

Explanation: Basophilic granularity of erythrocytes is a violation of heme synthesis; urine coproporphyrin is a marker of porphyrin metabolism blockade; blood lead level > 2 μmol/l.

Test 20. Emergency care for acute mercury intoxication includes: (PC-10, U2)

a) gastric lavage with water + unitiol (5% solution 5 ml IM), milk, egg white, hospitalization

b) insulin administration

c) oxygen therapy as the only method

d) diuretics without forced diuresis

The correct answer is: a

Explanation: In acute mercury intoxication: cessation of contact, gastric lavage, unitiol (antidote – SH-group donor), symptomatic therapy, forced diuresis, hospitalization.

Test 21. Cardinal symptom of chronic mercury intoxication: (PC-6, U1; PC-10, U1)

a) hypertension and tachycardia

b) "mercury tremor", eretism, gingivitis (Kussmaul's triad)

c) jaundice

d) polyuria

Correct answer: b

Explanation: Kussmaul's triad in mercurialism: intentional tremor (mercury), eretism (increased excitability, timidity), gingivitis.

Test 22. Irritant substances when inhaled in high concentrations cause: (PC-10, U1)

a) ketoacidosis

b) toxic pulmonary edema

c) hypothyroidism

d) pancreatitis

Correct answer: b

Explanation: Chlorine, nitrogen oxides, ammonia – with acute inhalation → toxic pulmonary edema (non-cardiogenic), ARDS. Treatment: corticosteroids, mechanical ventilation, forced diuresis.

Test 23. Antidote for acute poisoning with organophosphate pesticides (FOP): (PC-10, U2)

a) unitiol

b) atropine + cholinesterase reactivators (pralidoxime)

c) tetacin-calcium

d) deferoxamine

Correct answer: b

Explanation: FOPs inhibit cholinesterase → cholinergic crisis. Antidote: atropine (M-cholinergic receptor blocker) + reactivators (restore cholinesterase activity) – use immediately.

Test 24. Acute carbon monoxide (CO) poisoning leads to: (PC-10, U1)

a) methemoglobinemia

b) the formation of carboxyhemoglobin → tissue hypoxia

c) hemolysis of erythrocytes

d) nephrotoxic effect

Correct answer: b

Explanation: CO binds strongly to hemoglobin (200× stronger than O_2) → carboxyhemoglobin does not tolerate O_2 → tissue hypoxia, damage to the central nervous system and myocardium. Antidote – 100% O_2 (hyperbaric oxygenation).

Test 25. Antidote for chronic lead intoxication: (PC-10, U2)

a) atropine

b) tetacin-calcium (EDTA), D-penicillamine

c) UNITIOL

d) naloxone

Correct answer: b

Explanation: Tetacin-calcium ($Na_2CaEDTA$) forms chelated complexes with lead → excretion in the urine. D-penicillamine – in chronic forms. Unitiol is used for mercury intoxication.

Test 26. Epicondylitis is an occupational disease associated with: (PC-6, U1)

a) exposure to dust

b) stereotypical movements of the forearm and hand during monotonous physical labor

c) exposure to ionizing radiation

d) chemical intoxications

Correct answer: b

Explanation: Epicondylitis (lateral - "tennis elbow", medial - "golfer's elbow") - overstrain of tendons during stereotypical movements: painters, turners, grinders.

Test 27. The "white finger" in vibration sickness is a manifestation of: (PC-6, U2)

a) central paresis

b) angiospasm of the fingers (the symptom of a "dead" finger)

c) allergic reaction

d) periostitis

Correct answer: b

Explanation: A "dead" (white) finger is an acrospasm in vibration sickness: a sharp whitening of the fingers from hypothermia, vibration. Pathogenesis: hyperreactivity of the vascular wall.

Test 28. Scapulohumeral periarthritis is an occupational disease typical of: (PC-6, U1)

a) workers performing monotonous movements in the shoulder joint (painters, plasterers, musicians)

b) miners

c) employees of chemical industries

d) drivers

The correct answer is: a

Explanation: Scapulohumeral periarthritis: overstrain of the muscles and tendons of the shoulder joint in painters, plasterers, athletes. Doubourne's sign is soreness when abducted by 70-120°.

Test 29. Chronic benzene intoxication is characterized by: (PC-10, U1)

a) hyperglycemia

b) inhibition of hematopoiesis (pancytopenia, aplastic anemia, leukemia)

c) nephrotoxicity

d) pneumosclerosis

Correct answer: b

Explanation: Benzene-myelotoxin: disrupts DNA synthesis in progenitor cells → pancytopenia, aplastic anemia; with prolonged exposure - acute leukemia.

Test 30. Deckerven's disease (styloiditis) is an occupational disease in: (PC-6, U1)

a) miners

b) workers who perform monotonous movements of the hand (seamstresses, laundresses, typists)

c) workers of hot shops

d) drivers

Correct answer: b

Explanation: De Quervain's disease is stenosing tenosynovitis of the first canal of the back of the hand (tendons m. abductor pollicis longus and m. extensor pollicis brevis). Finkelstein's sign.

BLOCK C. Reconstructive Level (Application) – Completion Time: 60 minutes

Situational tasks

Task 1 (PK-6 U2–U3; PK-8 U2–U3)

Condition:

Coal mine worker (rock grinder), 18 years of experience. Complaints of cough with sputum, shortness of breath with moderate exertion, periodic chest pain. Radiographically: small-focal shadows (1–5 mm) with clear contours in the upper and middle lobes, enhancement of the pulmonary pattern. FVC = 68%, FEV_1/FVC = 75%. Sanitary and hygienic characteristics: the concentration of silicon dust exceeded the MPC by 4–6 times.

1. Formulate a preliminary diagnosis with justification. (10 points)

Reference answer:

Stage I silicosis. Chronic dust bronchitis. Justification: long experience (18 years) of work in conditions of exceeding the maximum permissible concentration of silicon dust;

radiologically, small-focal shadows with clear contours (silicotic nodules) in the upper and middle lobes; moderate decrease in FVC (restrictive component). The diagnosis is formulated according to ICD-10: J62.8 Pneumoconiosis caused by other silicon-containing dust.

2. Prescribe an examination plan to confirm the diagnosis. (10 points)

Reference answer:

high-resolution CT (CTR) — clarification of the prevalence and nature of changes; bronchoscopy with bronchoalveolar lavage (BAL) – cytology, exclusion of tuberculosis; spirometry in dynamics — the degree of PFT violation; CBC, biochemistry, ESR; Mantoux test/diaskintest + sputum microscopy for MBT (exclusion of silicotuberculosis); consultation with a TB specialist; ECG and echocardiography (pulmonary hypertension?).

3. Develop a treatment plan and resolve the issue of disability. (10 points)

Reference answer:

Treatment: cessation of contact with dust (mandatory at stage I); bronchodilators (ipratropium, tiotropium); mucolytics (ambroxol); physiotherapy (inhalations); breathing exercises; sanatorium-resort treatment. Ability to work: PC-6, U3 – referral to VTEK; in FVC 68% – group II functional disorders, limited ability to work; transfer to dust-free work; if it is impossible to transfer, disability group II is possible. Dispensary observation: 2 times a year.

Task 2 (PK-10 U2–U3; PK-6 U3)

Condition:

An employee of a synthetic rubber plant (contact with benzene for 10 years). On the shift, I felt acute dizziness, nausea, increasing weakness, jaundice of the sclera appeared. On examination: blood pressure 85/55 mm Hg, heart rate 118 beats/min, pale skin with a yellowish tint, liver enlarged by 3 cm. CBC: hemoglobin 72 g/l, reticulocytes 18%, bilirubin 68 μmol/l (indirect).

1. Determine the emergency condition and substantiate. (10 points)

Reference answer:

Acute hemolytic crisis against the background of chronic benzene intoxication. Rationale: prolonged contact with benzene (myelotoxin); acute onset; anemia (Hb 72 g/l), reticulocytosis 18% (hemolysis), indirect hyperbilirubinemia, hepatomegaly, hemodynamic disorders. ICD-10 diagnosis: T65.3 Toxic effect of benzene and its homologues.

2. Describe the algorithm of emergency care. (10 points)

Reference answer:

1) Immediate cessation of contact with benzene; 2) Calling an ambulance team; 3) Horizontal position, fresh air; 4) IV infusion: 0.9% NaCl 500 ml + glucose 5% 500 ml (hemodynamic correction); 5) Blood transfusion of washed erythrocytes (at Hb < 70 g/l); 6) Prednisolone 60–90 mg intravenously (hemolysis); 7) Forced diuresis (furosemide 40–80 mg intravenously); 8) Consultation with a hematologist; 9) Hospitalization in the hematology/toxicology department.

3. Prescribe an examination plan. (10 points)

Reference answer:

CBC with reticulocytes and formula calculation; Biochemistry: ALT, AST, LDH, direct/indirect bilirubin, haptoglobin; coagulogram (ICE?); OAM: urobilin, hemoglobinuria; determination of benzene and metabolites (phenol, hydroquinone) in urine; ultrasound of the liver, spleen; sternal puncture (if necessary); toxicological blood test for benzene.

Task 3 (PK-8 U2–U3; PK-6 U2–U3)

Condition:

An employee of a thermometric plant, 12 years of experience in contact with mercury vapor. Complaints of increased irritability, memory impairment, trembling hands, sleep disorders, sweating, unstable increase in blood pressure. On examination: tremor of outstretched arms, fingers, trembling of the tongue, gingivitis, emotional lability. Mercury in daily urine is 0.08 mg/l (the norm < 0.015 mg/l).

1. Formulate a diagnosis with justification. (10 points)

Reference answer:

Chronic mercury intoxication, stage II. Astheno-vegetative syndrome. Toxic neuropathy. Rationale: long-term contact (12 years) with mercury vapor when exceeding the MPC; the classic Kussmaul triad - tremor, eretism (irritability, memory impairment), gingivitis; Mercury in the urine is 5× higher than normal. ICD-10: T56.1 Toxic effects of mercury and its compounds.

2. Prescribe a treatment and rehabilitation plan. (10 points)

Reference answer:

Main antidote: unitiol (5% solution 5 ml IM × 10 days, courses); Adjuvant therapy: nootropics (piracetam), vascular drugs, adaptogens (eleutherococcus), B vitamins; physiotherapy; psychotherapy. Demercurization of the workplace. Rehabilitation: sanatorium-resort treatment (not earlier than 3 months after cupping); dispensary observation by a neurologist and occupational pathologist; Resolving the issue of employment (transfer without contact with mercury).

3. Resolve the issue of ability to work. (10 points)

Reference answer:

VTEK: at stage II of chronic mercury intoxication – limited ability to work (III disability group). Transfer to work without contact with mercury and neurotoxic substances, without high nervous and mental stress. If the transfer is impossible or the condition progresses, it is disability group II. Benefits: insurance indemnity for occupational diseases, sanatorium treatment at the expense of the employer (Social Insurance Fund).

Business games – time: 60 minutes

Game 1: "Doctor-expert VTEK" – 20 points (PC-8, U3; PC-6, U3)

Roles: Occupational pathologist, chairman of the VTEK, representative of the employer, patient (miner with stage II silicosis).

Task: To hold a meeting of the VTEK: to determine the degree of loss of professional disability, to draw up an examination certificate, to give recommendations on employment.

Evaluation criteria:

- Correct completion of the examination report (passport part, diagnosis, FVC, restrictions) – 5 points
- Justification of the degree of disability taking into account the stage, functional impairments, working conditions – 10 points
- Recommendations for rational employment (transfer, disability, benefits) – 5 points

Game 2: "Sanitary and hygienic expertise" – 20 points (PC-6, U2; PC-8, U2)

Roles: Occupational pathologist, labor inspector, factory representative, worker.

Objective: To assess working conditions at the workplace (metal grinder), to identify harmful production factors, to give an opinion on professional suitability.

Evaluation criteria:

- Detection of harmful factors (vibration, dust, noise, metal aerosols) – 5 points
- Assessment of the degree of hazard based on the results of certification of workplaces – 5 points
- Conclusion on professional suitability with justification and recommendations for prevention – 10 points

Game 3: "Emergency Care for Occupational Poisoning" – 20 points (PC-10, U3; PC-6, U3)

Roles: Occupational pathologist, nurse, victim (acute mercury vapor poisoning), security service representative.

Task: To provide emergency care in case of acute occupational poisoning, to organize transportation, to issue an emergency notification.

Evaluation criteria:

- First aid algorithm (cessation of exposure, fresh air, unitiol, symptomatic therapy) – 10 points
- Correct execution of an emergency notification of an occupational disease – 5 points
- Organization of further treatment, transportation and dispensary observation – 5 points

BLOCK C. Practice-oriented level (skills) – completion time: 40 minutes

Practical task 1: Collection of professional anamnesis and clinical examination – 20 points (PC-6, U2-U3; PC-8, U2)

Task: To interview and examine a patient with suspected vibration disease; formulate a preliminary diagnosis.

Evaluation criteria:

- Correct collection of professional anamnesis (length of service, specialty, specific harmful factors, use of PPE, improvement on vacation) – 5 points
- Identification of subjective symptoms (numbness, tingling, pain in the hands, "white finger", vasomotor disorders) – 5 points
- Determination of objective symptoms (Auborn, Thomsen, Welsch, Elkin, Finkelstein symptoms; neurological status; capillaroscopy) – 10 points

Practical task 2: Filling out medical documentation – 20 points (PC-6, Y3; PC-8, Y3)

Task: To fill in the VTEC examination report for a patient with stage II silicosis; 20 years of experience, FVC 55%, complaints of shortness of breath with minimal exertion.

Evaluation criteria:

- Correct completion of the passport part and professional history – 5 points
- Substantiation of the diagnosis with indication of the stage, functional disorders, ICD-10 – 10 points
- Formulation of the conclusion on the degree of disability and recommendations for employment – 5 points

BLOCK D. Attestation Level (Credit Tickets) – Completion Time: 120 minutes

Ticket structure: 1 theoretical question (30 points) + 1 practical skill (40 points) + 1 analytical task (30 points)

TEST TICKET No 1

Question 1 (theoretical, 30 points):

Pneumoconiosis: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment, prevention. Organization of dispensary observation. (PC-6, U1–U3; PC-8, U1–U3)

Reference answer:

Etiology: classification of dust (fibrogenic, weakly fibrogenic, allergenic); risk production. Pathogenesis: silicotic nodule (phagocytosis → macrophage death → fibrosis). Classification: according to the type of dust (silicosis, silicatose, metalloconiosis, carboconiosis, pneumoconiosis from mixed dust); by stage (I–III), by the current. Clinical presentation: cough, shortness of breath, chest pain; auscultatory – hard breathing, crepitus; percutory — blunting. Diagnosis: CTVR, spirometry (restrictive type), BAL, exclusion of tuberculosis. Differential diagnosis: tuberculosis (tuberculosis, upper lobes, caverns), sarcoidosis (bilateral lymphadenopathy, hypercalcemia), IFL (CT, biopsy). Treatment: cessation of contact, bronchodilators, mucolytics, corticosteroids in progression. Prevention: technical (dust suppression), medical (preliminary/periodic examinations). Dispensary observation: 2 times a year.

Question 2 (practical skill, 40 points):

Clinical examination of a patient with vibration disease: determination of vegetative-vascular and sensorineural pathology; identification of symptoms of Aborn, Thomsen, Welsch, Elkin, Finkelstein; registration of the results of the examination. (PC-6, U2–U3; PC-10, U1)

Reference answer:

Auborn's sign is the disappearance of the pulse on the radial artery when the head is turned towards the affected arm. Thomsen's sign is pain during percussion of the tubular bones of the hand. Welsch's sign – pressure on the palm causes numbness and tingling. Elkin's sign is cyanosis of the fingers when lowering the hands. Finkelstein's sign is pain in the area of the first tunnel of the wrist when bending the thumb. Sensorineural disorders: decreased vibration, tactile, pain sensitivity (algesimetry, tuning fork 128 Hz). Capillaroscopy.

Registration: a neurologist's conclusion, a description of the stage of vibration disease according to ICD-10.

Question 3 (analytical task, 30 points):

Interpretation of the results of the examination of a contact shop worker (lead): clinical manifestations; laboratory data (blood lead 3.8 μmol/l, urine coporphyrin +++, basophilic granularity of erythrocytes); diagnosis; treatment and rehabilitation plan; resolving the issue of working capacity. (PC-6, U3; PC-10, U2–U3; PC-8, U3)

Reference answer:

Diagnosis: Chronic lead intoxication, stage II. Lead border. Anemia. Rationale: blood lead level 3.8 μmol/l (norm < 2) + coproporphyrin +++ + basophilic granularity. Treatment: Tetacin-calcium ($CaNa_2EDTA$) 5-10% solution 20 ml intravenously per 300 ml 5% glucose × 5 days, course 3-4 times; D-penicillamine 600–900 mg/day × 4 weeks; vitamin B_1, B_6, B_{12}; iron preparations for anemia. Ability to work: translation without contact with lead and other neurotoxicants; if the symptoms persist – group III disability.

TEST TICKET No 2

Question 1 (theoretical, 30 points):

Occupational intoxication with metals (mercury, lead, manganese): etiology, mechanisms of action, clinical forms, diagnosis, principles of treatment, prevention. (PC-6, U1–U3; PC-10, U1–U3)

Reference answer:

Mercury: vapor → lungs and skin → deposition in the kidneys, central nervous system; Clinic: mercurialism (tremor, ereticism, gingivitis); Diagnosis: mercury in urine > 0.015 mg/l; Treatment: unitiol, sodium thiosulfate. Lead: gastrointestinal and inhalation routes → impaired heme synthesis → anemia, damage to the central nervous system; diagnosis: blood lead, coproporphyrin, basophilic granularity; Treatment: tetacin-calcium, D-penicillamine. Manganese: damage to the extrapyramidal system (manganosis) → Parkinson-like syndrome; diagnostics: blood/urine manganese, MRI of the brain. Prevention: sealing of production, PPE (respirators), periodic inspections.

Question 2 (practical skill, 40 points):

Emergency care for acute intoxication (simulated patient with acute mercury vapor poisoning): algorithm of actions; antidote therapy; issuing an emergency notice. (PC-10, U2–U3)

Reference answer:

1) Termination of contact, evacuation from the contaminated area; 2) Unbutton restrictive clothing, fresh air; 3) Rinsing the skin, mucous membranes with water; 4) Unitiol 5% solution 5 ml IM (antidote); 5) Sodium thiosulfate 30% solution 10 ml intravenously; 6) Forced diuresis; 7) Symptomatic therapy; 8) Transportation to the toxicology department; 9) Issuance of an emergency notification in the form 058/y. Emergency notification: full name, date, diagnosis, place of work, suspected substance, sent to the SES.

Question 3 (analytical task, 30 points):

Sanitary and hygienic characteristics of the grinder's workplace: identification of harmful factors, assessment of the risk of occupational pathology, development of preventive measures, conclusion on professional suitability. (PC-6, U2; PC-8, U2–U3)

Reference answer:

Harmful factors: vibration (local – tool), dust (metallic, abrasive), noise, possible contact with cutting fluids. Risk assessment: class of working conditions (3.1–3.3); exceeding the maximum permissible vibration, maximum permissible concentration of dust. Prevention: technical (vibration protection handles, dust extraction); organizational (regulated breaks, rotation); medical (preliminary and periodic examinations with vibrometry, RVG, EMG). Professional suitability: contraindications: obliterating endarteritis, peripheral neuropathy, Raynaud's disease.

TEST TICKET No 3

Question 1 (theoretical, 30 points):

Occupational diseases from physical factors (vibration, noise): pathogenesis, clinic, diagnosis, differential diagnosis, treatment, examination of working capacity. (PC-6, U1–U3; PC-8, U1–U3)

Reference answer:

Vibration disease: pathogenesis – microcirculation disorders → angiospasm → neurotrophic disorders → peripheral neuropathy; classification: I (initial), II (moderately expressed), III (pronounced); Clinic: acrospasm, paresthesias, decreased sensitivity, symptoms (Auborn, Thomsen, Welsch); diagnostics: vibrometry, algesimetry, capillaroscopy, RVG; differential diagnosis with Raynaud's disease, angiopathy, diabetic neuropathy; treatment: vasodilators, antiplatelet agents, B vitamins, physiotherapy. Occupational hearing loss (sensorineural hearing loss from noise): gradual progressive hearing loss at high frequencies (4000 Hz); audiogram; differential diagnosis with otosclerosis; Treatment is symptomatic, hearing aids. VTE: in stage III – disability.

Question 2 (practical skill, 40 points):

Conducting a preliminary medical examination of an employee entering work with harmful working conditions: examination algorithm; determination of professional suitability; paperwork. (PC-8, U1–U2; PC-6, U2)

Reference answer:

Algorithm: 1) Study of the employer's direction (type of work, harmful factors); 2) Collection of anamnesis (complaints, diseases, allergies); 3) Examination by a therapist, neurologist, otolaryngologist, ophthalmologist, dermatologist; 4) CBC, OAM, ECG, spirometry, fluorography; 5) Additional studies on the type of harmful factor (vibrometry – for vibration; audiogram – for noise; FVC – for dust); 6) Conclusion: "suitable" / "suitable with restrictions" / "not suitable" indicating contraindications and ICD-10. Documentation: Medical report in the form 086/y or VK conclusion.

Question 3 (analytical task, 30 points):

Complex management of a patient with chronic mercury intoxication: clinical manifestations; diagnostics; differential diagnosis with neurosis and multiple sclerosis; treatment; rehabilitation; examination of working capacity. (PC-6, U2–U3; PC-10, U2–U3; PC-8, U3)

Reference answer:

Clinical presentation: tremor, ereticism, gingivitis (Kussmaul's triad), excessive sweating, sleep disorders. Diagnosis: urine mercury > 0.015 mg/l; EEG (diffuse changes); ENMG. Differential diagnosis with neurosis: no data on industrial contact, no gingivitis, urine mercury is normal; Differential diagnosis with MS: no remissions, no pyramidal symptoms, no MRI changes, no occupational contact. Treatment: unitiol (5% 5 ml IM × 10 days, 3-4 courses), sodium thiosulfate; sedation; nootropics; physiotherapy. Rehabilitation: sanatorium, demercurization. VTE: at stage II – limited ability to work, transfer, III disability group.

6. PRACTICAL SKILLS FOR CERTIFICATION

№	Skill	Competence	Block	Min	Evaluation
1	Collection of complaints and professional history (experience, specialty, harmful factors, PPE, household hazards)	PC-6 U1, PC-8 U1	D	15	0–5 b.
2	Compilation of a detailed occupational history indicating specific harmful factors, their intensity and duration	PC-6 U2	D	15	0–5 b.
3	Sanitary and hygienic characteristics of the workplace (according to the description or at work)	PC-6 U2, PC-8 U2	D	20	0–5 b.
4	Clinical examination of a patient with pneumoconiosis: breathing pattern, percussion and auscultation of the lungs, assessment of PFT	PC-6 U2, PC-8 U2	D	20	0–5 b.
5	Neurological examination for vibration disease: Auborn, Thomsen, Welsch, Elkin, Finkelstein symptoms; sensory disturbances	PC-6 U2, PC-10 U1	D	25	0–5 b.
6	Determination of vegetative-vascular disorders (cold test, capillaroscopy, skin sensitivity assessment)	PC-6 U2, PC-10 U1	D	15	0–5 b.
7	Interpretation of radiographic changes in pneumoconiosis (determination of the stage, differentiation of species)	PC-6 U2–U3	D	20	0–5 b.
8	Interpretation of spirometry and pneumotachometry in occupational respiratory diseases	PC-6 U2	D	15	0–5 b.
9	Prescription of laboratory methods for occupational intoxications (lead, mercury, benzene) with justification	PC-6 U2, PC-10 U2	D	15	0–5 b.
10	Interpretation of Results in Chronic Intoxication (Blood Lead, Coproporphyrin, Basophilic Granule, Urine Mercury)	PC-6 U3, PC-10 U2	D	15	0–5 b.
11	Diagnosis of an occupational disease with ICD-10 wording and an indication of the relationship with production	PC-6 U3	D	15	0–5 b.
12	Development of a treatment plan for a patient with pneumoconiosis, taking into account the stage, functional disorders, concomitant pathology	PC-8 U2–U3, PC-10 U3	D	20	0–5 b.
13	Determination of indications for hospitalization or outpatient treatment for occupational diseases	PC-8 U3	D	10	0–3 b.
14	Emergency Care for Acute Occupational Poisoning: Algorithm, Antidote Therapy	PC-10 U2–U3	D	20	0–5 b.
15	Filling out an emergency notice of occupational disease and an accident report	PC-8 U3	D	15	0–5 b.
16	Preparation of a medical history with a detailed professional history and justification of the diagnosis	PC-6 U3, PC-8 U3	D	25	0–5 b.

№	Skill	Competence	Block	Min	Evaluation
17	Filling out the VTEK examination report: diagnosis, degree of disability, recommendations	PC-6 U3, PC-8 U3	D	25	0–5 b.
18	Determination of the degree of loss of professional working capacity in pneumoconiosis and vibration disease	PC-8 U3	D	20	0–5 b.
19	Selection of rational types of work for professional patients with limited working capacity	PC-8 U3	D	15	0–3 b.
20	Conducting a preliminary medical examination when entering a job with harmful working conditions	PC-6 U2, PC-8 U1	D	20	0–5 b.
21	Periodic medical examination of the employee (lead, mercury, benzene, dust, vibration)	PC-6 U2, PC-8 U1–U2	D	25	0–5 b.
22	Development of recommendations for the prevention of occupational diseases at a particular workplace	PC-8 U2–U3	D	20	0–5 b.
23	Evaluation of the effectiveness of treatment and rehabilitation of an occupational patient in dynamics	PC-8 U3, PC-10 U3	D	15	0–3 b.
24	Advising the patient on the prevention and use of personal protective equipment	PC-8 U3	D	15	0–3 b.

Criteria for assessing practical skills:

- Technique – 40%
- Interpretation of the results – 30%
- Compliance with asepsis and antiseptics – 15%
- Communication with the patient (ethics, tact) – 15%

7. METHODICAL ASSESSMENT MATERIALS

7.1. 100-point rating scale

Type of activity	Min	Max	%	Note
Monitoring (Module 1 + Module 2)	4	8	20%	Frontal questioning, testing, practical skills, attendance, CPS
Boundary Control (Module 1 + Module 2)	12	20	50%	Oral/written questioning, situational tasks, practical skills
Total for the semester	**16**	**28**	**70%**	The sum of current and midterm control
Intermediate control (Credit)	**12**	**20**	**30%**	Final grade in the discipline
Semester Ranking	**60**	**100**	**100%**	Summary assessment of all types of control

7.2. Evaluation criteria by levels of assimilation

Level	Characteristics	Points	Evaluation	Standings	Block	Competencies
Reproductive	Reproduction of facts, definitions, algorithms	60–69	Satisfied. (E)	Passed	Block A	PK-6 U1, PK-8 U1, PK-10 U1
Reconstructive	Application of knowledge in common situations	70–84	Good (C,D)	Passed	Block B	PK-6 U2, PK-8 U2, PK-10 U2
Practice-oriented	Solving professional problems, possessing skills	85–94	Excellent (B)	Passed	Block C	PK-6 U3, PK-8 U3, PK-10 U3
Creative	Comprehensive analysis of non-standard situations	95–100	Excellent (A)	Passed	Block D	PK-6, PK-8, PK-10 all levels
< 60 points	Gross gaps, inability to apply knowledge	0–59	Dissatisfied. (F)	Not counted.	—	—

7.3. Criteria for assessing practical skills (detailing)

Criterion	Excellent (36-40 pts)	Good (28–35 pt.)	Satisfied. (20–27 p.)	Dissatisfied. (0–19 points)
Collection of anamnesis	Complete, structured professional history	Complete, minor inaccuracies	Main sections, requires leading questions	Incomplete, incorrect questions
Physical examination	Perfect technique, consistency	Minor violations of the technique	Makes mistakes, requires correction	Gross mistakes in technique
Interpret the data	Correct, with the identification of pathology,	Correct, minor inaccuracies	Partially correct, missing details	Misinterpretation

Criterion	Excellent (36-40 pts)	Good (28–35 pt.)	Satisfied. (20–27 p.)	Dissatisfied. (0–19 points)
	substantiation of the diagnosis			
Paperwork	Literate, according to the standard (ICD-10, VTEK)	Minor violations of the design	Requires fixes	Not up to standard

APPENDIX 1. MEDICAL HISTORY

(practical work on supervising a patient with an occupational disease)

1. General Provisions

- A medical history is a mandatory work of every student in the discipline "Occupational Diseases".
- The student independently supervises the patient (inpatient: 3-5 days, outpatient: 2-3 visits).
- The work includes: collection of complaints and professional anamnesis, physical examination, formulation of the diagnosis according to ICD-10 indicating the connection with production, examination and treatment plan, resolution of the issue of disability.
- Deadline: no later than 2 weeks before the test.

Appendix 1.1. Supplement to the section "Life history" – Professional anamnesis (mandatory if an occupational disease is suspected):

- Profession, specialty, qualification
- Work experience in general and in the specialty (in years)
- Specific harmful production factors (chemical, physical, biological, dust, noise, vibration) – with an indication of concentrations/levels and MPC/MPL
- Intensity and duration of exposure
- Use of personal protective equipment (type, regularity)
- Previous jobs with similar harmful conditions
- Seasonality of the disease: improvement on vacation, deterioration when returning to work is an important differential diagnostic sign
- Household hazards (smoking, alcohol, household chemicals) – for differential diagnosis

2. Structure of the assessment of the medical history (100 points)

Case history section	Points	What to focus on	Competencies
Title page, header	5	Full name, date of birth, date of admission, department, No history, ICD-10 code	PC-8 U1
Complaints	10	Completeness (professional + general), chronology, significant negations	PC-6 U1
Life history	10	Systematic: allergological, epidemiological, hereditary, occupational (mandatory), household hazards	PC-6 U1–U2
Medical history	15	Logic: beginning, dynamics, connection with production, treatment before admission	PC-6 U1–U2

Case history section	Points	What to focus on	Competencies
Objective inspection	20	Obesity: general condition, skin/mucous membranes, lymph nodes, respiratory organs, cardiovascular system, gastrointestinal tract, nervous system; correctness of terminology	PC-6 U2
Data from laboratory and instrumental methods	10	Interpretation, relationship with the clinical picture, comparison with the norm	PC-6 U2–U3
Preliminary diagnosis	15	ICD-10 formulation with the substantiation of the occupational nature of the pathology	PC-6 U3
Differential diagnosis	10	Consistency of the comparative table, justification for the exclusion of non-occupational diseases	PC-6 U3
Survey plan	10	Validity taking into account the type of harmful factor; Sanitary and hygienic characteristics of the workplace	PC-6 U2–U3
Treatment plan	10	Compliance with Standards, Disability Management, Rehabilitation	PC-8 U3, PC-10 U3
Observation Diaries (≥ 3)	5	Dynamics of the condition, adjustment of diagnosis/treatment, date and signature	PC-8 U3
TOTAL	**100**		

3. Evaluation criteria by levels

Level	Points	Characteristics of the work
Excellent (A)	95–100	All criteria + original observations, independent analysis of a complex clinical case; competent formulation of the diagnosis and conclusion of the VTEK
Excellent (B)	85–94	Completeness, correctness, literacy, critical analysis, taking into account the features of occupational pathology; the issues of working capacity are correctly resolved
Good (C–D)	70–84	Complete structure, correct diagnosis, reasonable treatment; insufficient depth of differential diagnosis or incomplete justification of a professional nature
Satisfied. (E)	60–69	The main sections are completed, there are inaccuracies in the formulation of the diagnosis or treatment plan; Occupational history is incomplete
Dissatisfied.	< 60	Gross errors in diagnosis or treatment; lack of professional history; incomplete curation; Plagiarism

APPENDIX 2. STUDENTS' INDEPENDENT WORK (SRS)

Topics of the SRS in the discipline "Occupational diseases"

Section 1. The subject of occupational pathology. Dust diseases

11. SRS 1.1 Modern ideas about the pathogenesis of pneumoconiosis. Organization and conduct of preliminary and periodic examinations of persons working in conditions of exposure to dust.
12. SRS 1.2 Criteria for etiological diagnosis of dust bronchitis. Differential diagnosis of asbestosis with other diseases.
13. SRS 1.3 The Impact of New Factors of the Production Environment on the Health of Workers. Principles of VTE in occupational diseases.
14. SRS 1.4 Historical Aspects of the Study of Occupational Diseases. Organization of medical care for workers.

Section 2. Occupational diseases from the impact of physical and toxicochemical factors

15. SRS 2.1 Etiology, Clinic, Diagnosis and Treatment of Chronic Mercury Intoxication. Modern classification.
16. SRS 2.2 Differential diagnosis of lead intoxication. Effect of benzene and its homologues on the body.
17. SRS 2.3 Modern Ideas about the Pathogenesis of Vibration Disease. Differential diagnosis with Raynaud's disease.
18. SRS 2.4 Differential diagnosis of occupational diseases of the upper extremities (epicondylitis, scapulohumeral periarthritis, Dequervain's disease, "snapping" finger).
19. SRS 2.5 Occupational diseases under the influence of ionizing radiation (radiation sickness): pathogenesis, clinic, treatment.
20. SRS 2.6 Intoxication with irritant substances. Occupational pesticide intoxication: classification, antidote therapy.
21. SRS 2.7 Differential diagnosis of lead intoxication. The role of a hygienist in the prevention of occupational pathology.
22. SRS 2.8 Basic Principles of Emergency Care for Acute Occupational Intoxications: Algorithm of Actions, Antidotes.

2. Criteria for assessing SRS (100 points)

Criterion	Points	Detailing	Competencies
Relevance and goal statement	10	Clear goal, compliance with the topic of the discipline, justification of the choice	PC-6 U1, PC-8 U1
Content and depth of disclosure of the topic	30	Completeness of the material, logic of presentation, consistency, coverage of clinical aspects	PK-6 U1–U2, PK-8 U1–U2, PK-10 U1
Scientific and critical analysis	20	Use of sources (at least 5), comparison of opinions, analytical approach	PC-6 U2–U3

Criterion	Points	Detailing	Competencies
Practical significance	15	Connection with the practice of an occupational pathologist, clinical examples, application of knowledge	PC-8 U2–U3, PC-10 U2
Design and style	15	Literacy, structuring (title, table of contents, conclusion, list of lit. ≥ 5 sources)	PC-8 U1
Work protection	10	Oral presentation 7–10 min, questions answered, knowledge of the material	PC-6 U2–U3, PC-8 U2

3. Rating scale

- 95 - 100 points - Excellent (A)
- 85-94 points - Excellent (B)
- 70–84 points — Good (C–D)
- 60 - 69 points - Satisfactory (E)
- < 60 points — Unsatisfactory