

***LIST OF QUESTIONS FOR PREPARATION TO EXAM ON
HYGIENE AND ECOLOGY***

**for training second (master's) level of higher education
Knowledge 22 "Health"
Specialty 222 "Medicine"**

Chapter 1: „General questions on hygiene and ecology”.

Hygiene of air, climate, weather. Municipal Hygiene

1. Hygiene as a medical science, its objectives, tasks, its significance in the practice of the physician. Prophylaxis, its kinds.
2. Methods of hygienic research and their classification. Specific methods of hygiene. Methods of studying of the environmental effect on human body and health.
3. Definition of the concept of "health." Determinants of health. Risk factors for non-infectious diseases.
4. Sources of infection of the acute respiratory viral disease COVID-19 caused by SARS-COV-2 and features of the spread of the pathogen between people. Measures of general and individual prevention of coronavirus infection.
5. History and basic stages of development of hygiene.
6. The concept of hygienic pre-nosological diagnostics, its object, subject and direction of activity.
7. Solar radiation, its basic constituent elements and their characteristics.
8. Spectral distribution of the ultraviolet diapason of the solar radiation at the edge of the atmosphere and earth surface (regions A, B, C). The ozone layer and its hygienic significance.
9. Factors from which the ultraviolet radiation (UVR) intensity in the area or premises depends on.
10. Types and mechanisms of the UVR biogenic effect – general-stimulatory, chromogenic, vitamin D forming, bactericidal. Distinctive features of the biogenic effect for each region of the UVR spectral distribution.
11. Methods and devices for the measurement of the UVR intensity – physical, photochemical, biological, mathematical (calculation). Ultraviolet intensity measurement units, used with these methods and their interrelation.
12. Definition of physiologic and preventive ultraviolet radiation doses. Their quantification using the different methods of the intensity determination, microer, microbact.
13. Health disturbances and diseases caused by the UVR insufficiency. Main symptoms of the “solar insufficiency” and indications for the UVR preventive radiation.
14. Application of the natural and artificial UVR sources for the different diseases primary and secondary prevention and treatment.
15. Types of the artificial UVR sources, their principles of operation, basic technical properties, usage for prevention and treatment.
16. Excess exposure of a human to the solar and artificial radiation. “Ozone holes” as the hygienic problem. The UVR as an occupational hazard. Methods and devices for measuring the excess UV irradiation in the industry, in medicine.
17. Physical nature and hygienic significance of natural lighting.
18. Hygienic requirements for the indoor natural lighting. External and internal factors, that influence the indoor natural lighting level. Indices and standards of natural lighting for different premises.
19. Assessment of the indoor natural lighting using geometric methods during preventive and regular sanitary inspection (lighting coefficient, angle of incidence and aperture, premises depth coefficient determination).

20. Assessment of the lighting in premises using light engineering methods.
21. Hygienic significance of artificial lighting for people's life, rest, productive activity.
22. The artificial lighting influence on the working capacity, central nervous system condition, eyesight function (visual acuity, contrast sensation, visual perception speed, clear vision durability, colour recognition, adaptation, accommodation, critical winking frequency).
23. Comparative hygienic characteristic of the different artificial lighting sources (advantages and disadvantages of incandescent and luminescent lamps).
24. The artificial lighting calculation for premises using "Watt" method, its main stages.
25. Definition of "microclimate" and its forming factors.
26. The air and radiant temperature, their hygienic significance, methods and devices for measuring (thermometers, thermographs).
27. The air humidity and its indices: absolute, maximum, relative, physiological relative humidity, humidity deficit, physiological humidity deficit, dew point and their hygienic significance.
28. Devices for the air humidity determination (static August psychrometer, aspiration Assmann psychrometer, hygrometer, hygrograph, principles of their operation).
29. Physical basics of air movement. Usage of dominant wind directions in the preventive sanitary inspection during the construction of the settlements, industrial enterprises and recreation zones. "Wind rose".
30. Significance of indoor air movement for microclimate formation. The air movement measurement methods and devices.
31. Thermal equilibrium and organism heat exchange with environment. Factors forming heat production and loss. The human heat state subjective and objective indices in different microclimate.
32. Definition of human physical and biochemical thermoregulation. Ways and means of the heat loss. Factors which influence the heat loss by radiation, conduction, evaporation.
33. Complex methods for studying of the influence of the microclimate parameters on the organism (catathermometry, equivalent-effective and resultant temperatures), their determination and hygienic assessment.
34. Cold microclimate and its influence on human organism. Physiological reactions and diseases caused by cold microclimate.
35. Hot microclimate and its influence on human organism. Conditions caused the overheating. Physiological and pathological symptoms of acute and chronic overheating. Solar and heat strokes. Overheating prevention.
36. Hygienic standards of microclimate parameters for different premises, their scientific substantiation.
37. Climate, its definition. Climate forming factors. Indices characterizing the climate in the area.
38. Physiological and pathological reaction of healthy and ill person on climate influence. Acclimatization.
39. Weather, its definition. Weather forming and characterizing factors.
40. Weather influence on health. Helio-metotropic organism reactions, definition, mechanism of their influence.
41. Weather medical classification, the significance of underlying indices.
42. Sources of the indoor and atmospheric air dust pollution. Classification of dust by origin, formation, dispersiveness, form of particles, chemical composition, water solubility etc.
43. Types and pathogenesis of the adverse effect of the dust on human body (pneumoconioses, allergy etc.).
44. Methods and devices for determination of the dust content in the air using sedimentation-, aspiration-weighting and calculating.
45. Chemical composition of atmospheric air and its influence on human body. Hygienic significance of nitrogen, oxygen, carbon dioxide, air humidity.
46. Sanitary inspection of the indoor air purity in populated premises: determination of the air oxidation and CO₂ concentration as sanitary indices of the air pollution with products of human vital activity (sweat, sebaceous humour, necrotic epidermis, dust, microorganisms).
47. Maximum allowable concentrations of CO₂ in premises as a sanitary index of the air

pollution with the products of human vital activity and as a pollutant in industrial premises.

48. The indoor CO₂ concentration determination using the Lunge-Zeckendorf express method in Prokhorov's modification.

49. Natural indoor ventilation, its hygienic significance and means for improvement.

Section « **Hygiene of water and water supply. Hygiene of the soil and cleaning of populated areas**

1. Physiological, hygienic and national economical importance of water.

2. General specification of water quality of natural sources of water supply (organoleptic characteristics, indices of chemical composition, radiation and epidemiological safety, water physiological value).

3. Classification of natural water sources, conditions of water forming in them and their comparative hygienic characteristic.

4. Self-purification of water in open-air water reservoirs, its nature and hygienic importance, self-purification factors.

5. Scientific bases of selection of water supply sources. Hygienic regulations and State standards for water quality in water reservoirs, sphere of their circulation, regulation principles.

6. Hygienic importance of separate elements of water objects sanitary examination (sanitary-topographic, sanitary-technical, sanitary-epidemiologic).

7. Rules, methods and devices for taking water samples for analysis from open reservoirs, wells, ground water intake structures and at centralized water-supply systems. Covering letter, its content, rules of processing.

8. Quality and quantity of drinking water and water-supply conditions effect on the population health and sanitary living conditions.

9. Water-supply standards at centralized and decentralized systems.

10. Infectious diseases, pathogens of which are transferred through water (waterborne infectious diseases). Characteristics of water epidemics, their prevention.

11. Geo- and biohelminthiases, protozoa and other pathogens that transmit infection through water of open-air reservoirs.

12. Diseases of infectious origin that are caused by use of poor quality water and their prophylactic.

13. Macroelements of water and their health effect. Hygienic importance of water hardness. Nitrate induced methemoglobinemia

14. Problem of microelementoses of water origin (fluorine, iodine, selenium, molybdenum etc.), types of pathology they cause, their prophylaxis.

15. Endemic fluorosis, endemic caries, endemic goitre, their prophylaxis.

16. General hygienic specification of drinking water quality, its factors - organoleptic, chemical composition indices, their hygienic characteristics.

17. Drinking water State standard. Drinking water quality hygienic specification in case of decentralized water supply.

18. Conventional methods of water purification in case of centralized water-supply system (coagulation, flocculation, precipitation, filtration), substances and utilities that are used for this purpose.

19. Methods of water disinfection, their classification and hygienic characteristic.

20. Water chlorination, its methods and reagents that are used for this purpose. Disadvantages of chlorination.

21. Ozone treatment, ultraviolet disinfection of water, their comparative hygienic characteristic.

22. Special methods of water quality improvement (desalination, defluorination, deodorization etc.), their substance, hygienic characteristics.

23. Methods of sanitary inspection of centralized water supply systems (preventive, regular).

24. Sanitary inspection of local water supply systems. Equipment and maintenance of shaft wells, water source intake structures (catchments). Sanitation of shaft wells.

25. International standard of drinking water and peculiarities of its use in the conditions of the tropics.

26. Hygienic characteristic of water resources and water supply sources in arid and humid tropical areas.

27. Hygienic characteristic of methods and means of purification, disinfection, special water conditioning methods in tropical conditions.

28. Methods and organization of drinking water quality sanitary control in cases of centralized and decentralized water supply in developed countries of tropical regions and in developing countries.

1. Soil. Definition, hygienic, endemic and epidemiological importance.

2. Physical and chemical properties of soil.

3. Soil as a source of infectious diseases: tetanus, gas-gangrenes, geohelminthoses etc.

4. Factors and mechanisms that participate in soil self-purification.

5. Use of soil for economic and industrial waste disposal.

6. The concept of medical waste. Their categories are hazardous to the environment and human beings..

SECTION «HYGIENE OF NUTRITION»

1. Physiological significance, basic functions of nutrition.

2. Principles and conditions of the rational nutrition.

3. Nutrition as a social and hygienic problem.

4. Physiological and hygienic substantiation of rational nutrition for people of different ages, professions, sportsmen.

5. Clinical and special nutrition. The physiological norms of nutrition for main groups of population (age, professional and others). The physical activity coefficient.

6. Physiological and hygienic significance of proteins, fats, carbohydrates for nutrition, their requirements for organism, main sources.

7. Functions of proteins, fats, carbohydrates in organism. Problems of protein starvation, obesity.

8. Physiological and hygienic significance, function of vitamins, mineral substances, microelements, flavoring agents in organism, their requirements for human organism and main sources. Problems of hypo-, avitaminosis, hypervitaminosis. Biogeochemical endemia.

9. Alimentary and alimentary caused diseases, their classification, etiology, main principles of prevention.

10. Physiological and psychological organism reactions to partial, full-value starvation, foods and meals quality, food intake conditions. Correlation between the food intake and biological rhythms of organism.

11. Food poisonings, their classification, origin, epidemiological particularities.

12. Bacterial food poisonings (toxicoinfections, bacterial toxicoses, mycotoxicoses), their origin, basics of prevention.

13. Non-bacterial food poisonings, their origin, prevention.

14. Food poisonings of unknown origin.

15. Medical control methods for nutrition adequacy and validity. The ration balance.

16. Methods and criteria of assessment of the nutritional status of individuals or collectives with similar working conditions and nutrition as their nutrition validity signs.

17. Energy expenditure of the organism, its components as the base of the ration's caloric content.

18. Methods of determination of the energy expenditure. The physical activity coefficient, its dependence from the hardness and intensity of work, social, geographical and climate living conditions.

19. Calculation of the organism requirement in nutrients.

20. Methods of determination of the ration's caloric and nutrient content – balance, budget, questioning, weighting.

21. Laboratory methods of determination of the ration's caloric and nutrient content.

22. Calculation methods of determination and assessment of the ration's quantitative and qualitative content according to the menu schedule.

23. Caloric and biological value of dairy, meat, fish products, animal proteins and fats.

24. Caloric and biological value of bread, grain products, cereals.
 25. Caloric and biological value of vegetables, fruits, berries, vegetable fats, mono-, di-, polysaccharides.
 26. Food additives, their classification, hygienic characteristic.
 27. Methods of food products and ready meals sanitary inspection – organoleptic, sanitary and chemical, bacteriological, helminthological.
 28. Methods of diagnosis and prevention of the alimentary caused diseases with metabolic and deficient genesis.
 29. Methods of food poisoning investigation, directive, methodical and legislative documents used during this procedure.
1. Peculiarities of rational nutrition and ways of its realization in tropical climate.
 3. Organism energy, protein, fat, carbohydrate requirements and their quantity and balance peculiarities in tropical climate.
 4. Vitamins, mineral salts, microelements, taste substances (spices) and their role in nutrition of tropical regions population.
 5. Hot climate influence on food and some its components assimilation. Metabolism and nutrition pattern peculiarities in tropical regions.
 6. Hygienic characteristics of food products, consumed by population of arid and humid tropical regions.
 7. General characteristic of alimentary diseases of tropical regions population.
 8. Malnutrition and complete starvation diseases (protein and energy insufficiency) among tropical regions population.
 9. Vitamin deficiency diseases (hypo- and avitaminosis) among tropical regions population. Polyunsaturated fatty acids deficiency diseases.
 10. Specific of microelements deficiency diseases among population of arid and humid areas.
 11. Mineral and microelements deficiency diseases among population of tropical regions.
 12. Overeating diseases in tropical regions.
 13. Diseases caused by poor quality of food intake (foodborne diseases, helminthiasis, food poisoning, fermentopathies).
 14. Methods of medical control over tropical regions population nutrition.
 15. Calculation methods of the population nutrition assessment.
 16. Sanitary inspection of food products and ready-made meals, its consumption in tropical region countries.
 17. Food products storage and preservation peculiarities in tropical conditions, usage of preservatives and antibiotics.
 18. Methods and measures of prevention of the foodborne diseases with alimentary transmission mechanisms, food poisoning.
 19. Methods and measures of prevention of the infections diseases and invasions with alimentary transmission mechanisms.

SECTION «HYGIENE OF CHILDREN AND ADOLESCENTS»

1. Factors of environment, educational process and social conditions of life which influence the formation of the child's and adolescent's health.
2. General mechanisms of development and growth of the child and adolescent organism.
3. Medical, physiological and psychological assessment criteria of the child development. Main methods of research of psychological and physiological peculiarities depending on age, and functional state of the child and adolescent organisms.
4. Method of complex assessment of the health state of children and adolescents. Assessment criteria and indices of the health of children and adolescents. Peculiarities of distribution of children and adolescents among the health groups.
5. Physical development as an important assessment criterion of the health state. Main indices of the physical development.

6. Rules of anthropometry. Requirements to tables of regional standards of the physical development.
7. Biological and chronological age. Indices of biological development of children and adolescents. Modern concept about epochal and interage acceleration and deceleration (retardation).
8. Methods of assessment of the children's and adolescents' physical development (method of sigmal deviations, assessment according to regression scales, complex method, centile method).
9. Methods of assessment of the health state and physical development of organized children collectives.
10. Hygienic requirements to land parcel, building and group section of preschool institutions. Principle of group isolation and its significance.
11. Hygienic requirements to land parcel and building of the preschool institutions. Principle of functional zoning and its significance.
12. Hygienic requirements to planning, sanitary and technical maintenance of classrooms (equipment, microclimate characteristics, illumination, ventilation, water-supply etc.).
13. Hygienic requirements to children furniture and its physiological substantiation. Rules of the school desk marking and sitting of pupils. Hygienic requirements to location of schooldesks and other school furniture in the classroom.
14. School readiness. Hygienic basics and method of examination of functional readiness of children to enter school.
15. Hygienic requirements to organization of educational process in modern general educational establishments.
16. Day regimen and main regime elements. Peculiarities of hygienic requirements of the pupils' daily activity. Hygienic principles of scheduling the day regime for the different age children and adolescents.
17. Hygienic requirements to school time-table and method of its assessment.
18. Hygienic requirements to organization and conduct of the lesson.
19. Hygienic requirements to school textbooks, manuals and children toys.
20. Hygienic requirements to organization of out-of-school activity and free time of pupils.
21. Hygienic principles of rational organization of physical training for children and adolescents. Types, means and forms of physical training in modern educational establishments.
22. Hygienic basics of assessment of the physical training lesson. Hygienic requirements to places for physical training.
23. Hygienic requirements to content, regime, organization and carrying out of handicraft training in modern educational establishments.
24. Hygienic basics of tempering of the child and adolescent organism, its main types, principles and methods of organization.

CHAPTER 2: „Special questions on hygiene and ecology”.

SECTION «HYGIENE OF LABOUR»

1. Types of labour, their physiological and hygienic characteristics. Physical and mental work.
2. Fundamentals of labour physiology. Physiological changes in organism of a worker during work. Fatigue and overfatigue, scientific substantiations of their development.
3. Classification of labour according to its intensity, complexity and tension.
4. Technique of assessment of organism's functional condition at physical and mental works. Ergographic, physiological and psycho-physiological tests. Working capacity and fatigue assessment using trainers.
5. Classification and characteristic of occupational hazards according to State Standard “Dangerous and hazardous factors”.
6. Characteristic of physical factors of industrial environment.

7. Classification of chemical factors of industrial environment according to their origin, toxic level, hazard and tropic effect.
8. Isolated, combined, complex and joint action of industrial hazards of chemical and physical origin.
9. Biological factors of industrial environment. Industries and occupations that are effected by biological agents as occupational hazards.
10. Psycho-physiological hazards of industrial environment. Occupational hazards, involving overload of certain organs and systems.
11. Peculiarities of organism's response to physical, chemical, biological and psycho-physiological effects of occupational hazards. Occupational diseases and poisonings, occupational traumatism.
12. Main industrial toxic substances and routes of their penetration to organism. Types of their action, transformation in organism, routes of industrial toxins' excretion from organism.
13. Conditions that determine industrial toxins' poisonous effect, their physical and functional cumulation in organism.
14. Occupational pathology caused by the effect of particulate pollutants of different origin and dispersion ability on organism.
15. Health disturbances and diseases associated with increased and decreased barometric pressure effect. Caisson disease, altitude sickness.
16. Noise as physical and hygienic factor. Sources of natural, outdoor, domestic and industrial noise. Noise classification by frequency, intensity, time characteristics.
17. Noise measurement units and fundamentals of its hygienic regulation.
18. Noise effect on hearing organ: sound comfort, noise adaptation, auditory lassitude overfatigue, noise disease. Sound frequency band, which is perceived by hearing organ of a man and his sensitivity and susceptibility to these frequencies.
19. Infra-sound, ultra-sound, their sources, effect on organism, medical application, methods of protection.
20. Vibration as physical and hygienic factor. Vibration sources in transport and industry. Vibration classification according to frequency, intensity, time characteristics, vibration accelerations. Vibration measurement units and fundamentals of their hygienic regulation.
21. Vibration effect on organism. General and local vibration disease, occupational characteristic.
22. Hygiene and labour protection as basis for occupational disease and poisoning prevention.
23. Fundamentals and principles of hygienic regulation of working conditions at different productions. Maximum allowable levels (MAL), concentrations (MAC), doses (MAD).
24. Means and techniques for prevention of impact of dangerous and harmful industrial factors on workers' organism.
25. Principal scheme for determination of the MAC of chemical pollutants in toxicological experiment on laboratory animals.
26. Peculiarities of working regimen in arid and humid climate.

SECTION. Hygiene of the patient care institutions. Radiation hygiene

8. Hygienic requirements concerning the location of the hospital ground area, its planning and hospital territory zoning.
9. Hygienic requirements concerning the location, planning, sanitary appliance, regime of exploitation of the facilities for the patients of different type admission and discharge (children, infectious patients, pregnant women, surgical patients and others).
10. Hygienic requirements concerning the location, planning, sanitary appliance, optimal sanitary and hygienic regime of exploitation of the departments and ward sections – therapeutic, surgical, obstetric, children's, infectious and other ones.
11. Hygienic requirements concerning the microclimate, ventilation, natural and artificial lighting of different hospital facilities.
12. Peculiarities of the planning, sanitary appliance, optimal sanitary and hygienic and anti-epidemic regime of exploitation of the hospital operating block and the intensive care units.

13. Peculiarities of the location, planning, sanitary appliance, optimal sanitary and hygienic and anti-epidemic regime of exploitation of the hospital infectious department (building).
14. Hygienic requirements concerning the location, planning, equipment, engineering process of food preparing in the hospital nutrition unit.
15. Prophylaxis of the food poisoning at the in-patient department.
16. Medical control of food transporting and dispensation in the departments in order to keep its full-value and taste qualities.
17. Sanitary and hygienic requirements concerning collection, removal and elimination of the hospital specific wastes.
18. Personal hygiene of patients and medical workers of the surgical, obstetric and children's departments, the operating block and maternity houses. Hygienic and anti-epidemic measures of the nosocomial infection prevention.
19. Occupational hazards, the medical workers' labour hygiene and peculiarities of different medical personnel labour (surgeons, obstetricians, infectiologists, experts in resuscitation, anesthesiologists, doctors of the artificial kidney and hemotransfusion departments, manipulation nurses, clinical laboratory assistants, disinfectors, physiotherapists and others).
20. Catering establishments, their planning, equipment, sanitary and hygienic inspection during their exploitation.
21. Hygienic basics of the nutrition organization in the hospital. The special and clinical and preventive nutrition.
22. Classification of the ionizing radiations according to the types of radiation, their use at the manufacture, in science, medicine, their sources (nuclear material, bare and sealed sources, nuclear accelerators, radioactive wastes).
23. Qualitative and quantitative characteristics of radionuclides as sources of ionizing radiation (types of nuclear transformation and ionizing radiations accompanying them, half-life period, activity, gamma-equivalent), their measurement units.
24. Qualitative and quantitative characteristics of ionizing radiations (energy, penetrating and ionizing power). Types of doses and their measurement units. The doses' rate.
25. Ionizing radiations as the occupational hazard in industry, in the scientific researches, medicine.
26. Main types of radiation damages to the body, and their causes.
27. Acute and chronic radiation sickness, its causes, stages of its course, main clinical manifestations.
28. Long-term consequences of the radiation damage, local damages (cancerogenic, teratogenic, embryotoxic effects, radiation burns and others).
29. Regulations of the radiation safety.
30. Methods and measures of the radiation and medical control during work with bare and sealed sources of the ionizing radiation. Means of measurement of the ionizing radiation capacity, individual irradiation doses, the working surfaces pollution by radionuclides, radionuclide concentration in the environmental objects – the atmosphere air, the working zone air, water, soil, foodstuff.
31. Methods and measures of the protection from external irradiation based on physical laws of radiation decay (protection by amount, time, distance and shielding), their legislative, organization and technical bases.
32. Calculation methods of assessment of the radiation safety and parameters of protection from the internal and external irradiation as part of the personnel radiation protection measures.
33. Ionizing radiations as the occupational hazard for the patient care institutions personnel.
34. Peculiarities of the radiation danger and radiation protection in the departments of bare and sealed sources of the ionizing radiation, in the department of the teletherapy, diagnostic X-ray departments.
35. Regulations of the radiation safety for the patient care institutions personnel and patients.

36. Methods of collection, removal and elimination of the radioactive wastes during work with bare and sealed sources of ionizing radiation.
37. Methods and measures of the sanitary and radiation control during work with the ionizing radiation sources at medical institutions. Stages of hygienic control as to the environmental factors, working and living conditions.

SECTION “The main sources, ways, scale of environmental pollution. Natural and man-made disasters. Organization of sanitary and hygienic measures in emergency situations”

1. Main sources and ways of environmental pollution by factors of physical, chemical and biological nature.
2. Definition and classification of emergency situations by origin, scale, speed of development.
3. Natural disasters (floods, earthquakes, landslides, villages), their ecological and medical consequences.
4. Technological catastrophes, their ecological and medical consequences.
5. Social emergencies, their medical consequences.
6. Nuclear catastrophes, ecological and medical consequences of the Chernobyl accident.

SECTION. Healthy mode of life, personal hygiene and psychohygiene.

1. Personal hygiene as a way to keep and strengthen the population health.
2. Physiological functions of skin – protective, metabolic, excretory, heat regulatory, bactericidal, receptor, D-vitamin forming and others.
3. Washing agents, their classification and hygienic assessment. Soap, its chemical structure, detergency, positive and negative characteristics, dependence on the water hardness.
4. New washing agents: detergents, shampoos, their classification, hygienic assessment, positive and negative characteristics. Solid and liquid soaps. Bactericidal soaps.
5. Bath-houses and saunas as ways to maintain skin cleanliness and stimulate its physiological functions.
6. Hygienic significance, functions and types of clothing of different purposes (everyday, working and hospital).
7. Main types of fabrics, their classification, physical and chemical properties, peculiarities of their use for the clothing of different purposes – everyday (summer, winter), and work ones.
8. Hygienic characteristics of synthetic fabrics and possibilities of their use in different clothing set layers.
9. Hygienic requirements concerning the hospital clothing of different purposes (for surgeons, X-ray doctors – radiologists, infectiologists, personnel of the laboratories of especially dangerous infections, disinfectors and others).
10. General scheme of the fabric assessment, the methods of its certain indices determination (thickness, specific weight, porosity, capillarity, hygroscopic property, relative steam and heat conductivity, resistance to acids, alkali, the organic solvents, to the mechanic effect (wearability), heat radiation).
11. Psychohygiene as a science, basic tasks, methods and measures of psychohygiene.
12. Concept of the human’s psychic health and the main criteria of its assessment. The borderline neuropsychic shifts and the psychic health disorders as a hygienic problem.
13. Main peculiarities of the people’s personalities (temperament, character, neuropsychic state) and their study methods.
14. Psychohygienic basics of everyday activity optimization. The psychohygiene and the psychic prophylaxis of health disorders of different population groups.
15. Biological rhythms and man’s health. Medical biorhythmology as a science. The classifications of the most widespread biological rhythms.
16. Methods of determination of different types of daily, seasonal and other biological rhythm curves.
17. Types of desynchronosis and its medical and hygienic characteristics.

18. Methods of labour and rest regime optimization as measures of physiological and biological rhythms preservation and the prevention of health disorders. Concept of chronohygiene.
19. Peculiarities of personal hygiene in tropic and hot climate, hygiene of skin, clothes, hygienic principles of day regimen and their substantiation.
20. Conduct a hygienic assessment of oral care.
21. To evaluate physico-chemical parameters characterizing the hygienic properties of fabrics of clothing of different functional purposes.

LIST OF PRACTICAL TASKS TO EXAM ON “Hygiene and Ecology”

General questions on hygiene and ecology

1. To determine and assess the UVR intensity, preventive dose and bactericidal effectiveness; indices of microclimate.
2. To determine and assess indices of natural and artificial lighting and its influence on the visual analyzer functions.
3. To determine the indoor air CO₂ concentration and calculate necessary and actual ventilation volume and rate.
4. To be able to interpret meteorological, synoptic and helio-geo-physical performance forecast, identify medical type it, make medical prognosis and make recommendations for prevention helio-meteorotropic reactions.
5. To take water and soil samples for analysis.
6. To carry out the sanitary inspection of water supply sources, to take water samples for laboratory analysis taking into account tropical conditions.
7. To disinfect water in tropical conditions.
8. To be able to conduct individual disinfection of water supplies in hot climate.
9. To be able to use special methods of water quality improvement in tropical conditions.
10. To determine the nutrition adequacy and validity for individuals and organized collectives using the study of organism energy expenditure, nutritional status, factual ration's energetic value and nutrient content.
11. To detect the alimentary caused diseases and food poisonings, perform the medical measures for their prevention and efficiency assessment.
12. To carry out medical control of nutrition sufficiency and safety in tropical regions.
13. To be able to use calculation methods of the population nutrition assessment and correction.
14. To determine the severity, intensity of labor based on research findings, make recommendations to prevent fatigue and improvement of working conditions.
15. To be able to work out preventive measures of pathology associated with exposure to unfavorable arid and humid hot tropical climates when performing physical work.
16. To be able to work out preventive measures of water supply organization in arid and humid areas.
17. To be able to work out preventive measures of nutrition organization in arid and humid areas.
18. To determine the health groups, examination of somatometric, somatoscopic and physiometric indices of physical development of children and adolescents.
19. To assess the physical development of children and adolescents.
20. To assess from hygienic point of view the day regime, time-table, organization and methods of the lesson, school textbooks, and organization of out-of-school activity and free time of pupils.
21. To perform the hygienic assessment of equipment and maintenance of educational establishments for children and adolescents.

“Special questions on hygiene”

Hygiene of the patient care institutions. Radiation hygiene

1. To determine and assess the project patient care institutions' location and territory zoning, taking into account objects, adjacent to the land parcel, “wind rose”, correspondence with the site development, percentage of green area and the constructions' orientation.
2. To determine and assess the correspondence of the hospital premises' area, cubic capacity and sanitary accomplishment to hygienic standards; their correspondence to the functional purpose.

3. To carry out the sanitary inspection and determine the objective figures of the hygienic condition of the medical institution different subdivisions.
4. To determine and assess harmful and dangerous factors of different subdivisions of the medical institution and their influence on the patients' and medical personnel health.
5. Algorithm for hygienic treatment of hands of medical personnel.
6. Calculate the parameters of protection against external radiation when working with sources α , β , γ and X-ray radiation (wall thickness).
7. Draw a plan-diagram of the X-ray room.
8. Draw a plan-diagram of the box of the infectious hospital.

Head of the department
of General Hygiene and Ecology

prof. Fedorenko V.I.