

Self-training questions to concluding summing-up module control #1

“General questions of hygiene and ecology”

1. Preventive medicine and its sense and connections with therapeutic medicine.
2. Prophylaxis, its types and its role in doctors' activities.
3. Hygiene as a medical science, its objectives, tasks, objects of study.
4. Sanitation as a practical application of hygienic regulations and sanitary norms and rules.
5. Formation and achievements of empiric hygiene in ancient times.
6. Methods of hygienic research and their classification. Specific methods of hygiene.
7. Methods of studying of the environmental factors.
8. Principles and forms of hygienic regulation.
9. Solar radiation, its basic constituent elements and their characteristics.
10. 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.
11. The types and mechanisms of the UVR biogenic effect – general-stimulatory, chromogenic, vitamin D forming, bactericidal. The distinctive features of the biogenic effect for each region of the UVR spectral distribution.
12. The types and mechanisms of the UVR abiogenic effects
13. Definition of erythemal, physiologic and preventive ultraviolet radiation doses. Their quantification using the different methods of the intensity determination.
14. The usage of the natural and artificial UVR sources for the different diseases primary and secondary prevention and treatment.
15. Health disturbances and diseases caused by the UVR insufficiency. Main symptoms of the “solar insufficiency” and indications for the UVR preventive radiation.
16. Peculiarities of UVR influence on elder people.
17. Peculiarities of the usage of the natural and artificial UVR sources for the different diseases primary and secondary prevention and treatment in elder people.
18. Climate, its definition. Climate forming factors. Indices characterizing the climate in the area.
19. Climate classification (geographical, building, medical etc.) and the climatic zone hygienic characteristic. Climate peculiarities in different natural and geographical regions.
20. The physiological and pathological reaction of healthy and ill person on climate influence.
21. The climatic conditions influence on settlement planning, home hygiene, water supply, nutrition, personal hygiene.
22. The usage of climatic factors for health improvement and disease prevention. Classification of therapeutic resort factors and resorts. Methods of different diseases sanatorium-and-spa treatment.
23. Weather, its definition. Weather forming and characterizing factors.
24. Patterns of atmospheric circulation. The different types of weather formation. Main thermobaric formations: cyclone, anticyclone, atmospheric fronts. Temperature inversion.

25. Weather influence on health. Heliometeotropic organism reactions, definition, mechanism of their influence.
26. Weather medical classification, the significance of underlying indices.
27. Peculiarities of different weather types influence on elder people organism.
28. Peculiarities of different climate types influence on elder people organism.
29. The medical weather forecasting. The daily weather elements variety and their influence on the cardiovascular diseases chronicity.
30. Principles of heliometeotropic reactions prevention. Primary and secondary prevention.
31. Heliometeotropic reactions in elder people organism.
32. Acclimatization. Peculiarities of the acclimatization phases in elder people.
33. Physical nature and hygienic significance of natural lighting. Main light engineering values (light intensity, luminous/light flux, spectrum, lighting, brightness etc.). Their measurement units.
34. The hygienic significance of artificial lighting for people's life, rest, productive activity.
35. Comparative hygienic characteristic of the different artificial lighting sources (advantages and disadvantages of incandescent and luminescent lamps).
36. Physiological, hygienic and national economical importance of water.
37. General specification of water quality of natural sources of water supply (organoleptic characteristics, indices of chemical composition, radiation and epidemiological safety, water physiological value).
38. Classification of natural water sources, conditions of water forming in them and their comparative hygienic characteristic.
39. Self-purification of water in open-air water reservoirs, its nature and hygienic importance, self-purification factors. Sewage treatment.
40. 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.
41. Water quality organoleptic characteristics, methods of their determination and units of measurement.
42. Chemical characteristics that specify compound of natural water, methods of their determination and measurement units.
43. Bacteriological characteristics of water quality (direct – pathogenic organisms and sanitary-indicative – microbial number, coli titer, coli index), methods of their determination and hygienic regulation.
44. Hygienic importance of separate elements of water objects sanitary examination (sanitary-topographic, sanitary-technical, sanitary-epidemiological).
45. Quality and quantity of drinking water and water-supply conditions effect on the population health and sanitary living conditions.
46. Water-supply standards at centralized and decentralized systems; their scientific substantiation.
47. Infectious diseases, pathogens of which are transferred through water (waterborne infectious diseases). Characteristics of water epidemics, their prevention.
48. Geo- and biohelminthiases, protozoa and other pathogens that transmit infection through water of open-air reservoirs.

49. Diseases of infectious origin that are caused by use of poor quality water and their prophylactic.
50. Macroelements of water and their health effect. Hygienic importance of water hardness. Nitrate induced methemoglobinemia.
51. Problem of microelementoses of water origin (fluorine, iodine, selenium, molybdenum, etc.), types of pathology they cause, their prophylaxis.
52. General hygienic specification of drinking water quality, its factors - organoleptic, chemical composition indices, their hygienic characteristics.
53. 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.
54. Methods of water disinfection, their classification and hygienic characteristic.
55. Soil. Definition, hygienic, endemic and epidemiological importance.
56. Physical and chemical properties of soil (texture of soil, moisture, porosity, permeability, capillarity, natural chemical composition of soil and its air components).
57. Soil as a source of infectious diseases: tetanus, gas-gangrenes, geohelminthoses, etc.
58. Economic, industrial, transport and other sources of soil pollution, their classification, hygienic characteristic.
59. Hygienic characteristic of methods of collection (door-to-door-based, neighborhood-based), disposal, destruction of solid waste of residential, industrial, building origin (improved dumps, grounds, compost fields, utilization and biothermal facilities).
60. Pick-up system of waste collection, disposal and treatment (cesspool fields, sewage irrigation fields).
61. Rules, methods and techniques of soil sampling, analysis of physico-mechanical, sanitary-chemical, bacteriological, helminthological factors. Drawing up of covering papers.
62. Hygienic assessment of soil based on results of sanitary examination of the parcel and laboratory analysis of samples.
63. Soil sanitary state indices, their scientific substantiation (texture, physicochemical indices, microbial number, coli titer, anaerobic titer, etc.).
64. Definition of "microclimate" and its forming factors.
65. The air and radiant temperature, their hygienic significance, methods and devices for measuring (thermometers, thermographs).
66. The air humidity and its indices: absolute, maximum, relative, physiological relative humidity, humidity deficit, physiological humidity deficit, dew point and their hygienic significance.
67. Devices for the air humidity determination (static August psychrometer, aspiration Assmann psychrometer, hygrometer, hygrograph, principles of their operation).
68. 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.
69. Definition of human physical and biochemical thermoregulation. The ways and means of the heat loss. Factors which influence the heat loss by radiation, conduction, evaporation. The mechanisms of heat loss through respiration.

70. Methods for studying of the influence of certain microclimate factors on the human organism.
71. Complex methods for studying of the influence of the microclimate parameters on the organism (catathermometry, frigometry, equivalent-effective and resultant temperatures), their determination and hygienic assessment.
72. Cold microclimate and its influence on human organism. Physiological reactions and diseases caused by cold microclimate. Peculiarities in elder people organism
73. Hot microclimate and its influence on human organism. Conditions caused the overheating. Physiological and pathological symptoms of acute and chronic overheating. Peculiarities in elder people organism.
74. Hygienic standards of microclimate parameters for different premises, their scientific substantiation.
75. The sources of the indoor and atmospheric air dust pollution. The classification of dust by origin, formation, dispersiveness, form of particles, chemical composition, water solubility etc.
76. The types and pathogenesis of the adverse effect of the dust on human body (pneumoconioses, allergy etc.).
77. Chemical composition of atmospheric air and its influence on human body. Hygienic significance of nitrogen, oxygen, carbon dioxide, air humidity. The sources of atmospheric air pollution with chemical substances (natural, transport, industrial) and their hygienic significance.
78. Methods and means for atmospheric air protection from man-caused pollutions. The sources of air pollution in residential, public, industrial premises and their hygienic characteristics.
79. Sanitary inspection of the indoor air purity in populated premises: determination of the air oxidation and CO₂ concentration as sanitary indices of air pollution with products of human vital activity.
80. Natural indoor ventilation, its hygienic significance and means for improvement.
81. Artificial indoor (enforced) ventilation (inflow, outflow, inflow-outflow), its technical hardware. The air conditioning, principles of air-conditioner operation.
82. Required and actual volumes and ventilation rate, their hygienic substantiation, principle of calculation using anthropometric (by MAC of CO₂ for residential premises) and MAC of corresponding pollutants (for industrial premises) methods.
83. Labour, its definition from physical, physiological, philosophical and social points of view. Labour of elder people and its hygienic assessment. Types of labour, their physiological and hygienic characteristics. Physical and mental work.
84. Fundamentals of labour physiology. Physiological changes in organism of a worker during work. Fatigue and overfatigue, scientific substantiations of their development.
85. Classification of labour according to its intensity, complexity and tension.
86. Classification and characteristic of occupational hazards
87. 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.
88. Conditions that determine industrial toxins' poisonous effect, their physical and functional cumulation in organism.

89. Peculiarities of clinical findings of poisoning by the most common toxins: lead, mercury, manganese, benzol, etc.
90. Noise as physical and hygienic factor. Sources of natural, outdoor, domestic and industrial noise.
91. Noise classification by frequency, intensity, time characteristics.
92. Noise measurement units and fundamentals of its hygienic regulation.
93. 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.
94. Means of noise control in the residential areas, premises of different function, manufacturing facilities. Means and techniques of measurement of noise levels and frequencies (noise dosimeter and noise spectrum analyzer) and sensitivity of auditory analyzer (audiometers).
95. 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.
96. Vibration effect on organism. General and local vibration disease, stages of its development, occupational characteristic. Instruments for measurement of vibration speed, vibration acceleration, vibration frequency, principles of their operation.
97. Hygiene and labour protection as basis for occupational disease and poisoning prevention. Rehabilitation in before-retirement and during retires period for disability prevention and recovery.