



INTERNATIONAL EUROPEAN UNIVERSITY

**EDUCATIONAL AND SCIENTIFIC INSTITUTE
"EUROPEAN MEDICAL SCHOOL"**

**DEPARTMENT
OF MEDICAL AND PREVENTIVE DISCIPLINES**

The list of theoretical questions for the final control

FOR 2ND YEAR STUDENTS, IV SEMESTER

SPECIALTY 222 "MEDICINE"

DISCIPLINE

HYGIENE AND ECOLOGY

Section 1. General issues of hygiene and ecology

1. Hygiene as a science, its purpose, tasks, content, connection with other sciences.
2. Ecology as a science, its purpose, tasks, content, connection with other sciences.
3. Preventive orientation of domestic medicine, public and personal prevention, primary, secondary and tertiary, defining priorities.
4. Sanitation as a branch of practical health care. Varieties of sanitation.
5. The value of hygiene knowledge for the formation of professional thinking and practice of doctors of various specialties.
6. The concept of methodology as a doctrine of scientific knowledge of reality. Fundamentals of hygiene methodology: general philosophical laws and categories, their use in hygiene.
7. Theoretical foundations of hygiene, their essence, the contribution of the most prominent domestic scientists-hygienists for their scientific substantiation, interpretation and practical use.
8. Methods and techniques of hygienic research, their classification. Methods of studying the state of the environment and its hygienic assessment, methods of studying the impact of the environment on human health. Specific methods of hygienic research.
9. Physical bases of solar radiation. The concept of solar activity, "solar wind", interplanetary magnetic field. Interaction of components of solar radiation with the Earth's magnetosphere and atmosphere. Solar spectrum at the boundary of the atmosphere and the earth's surface. The value of the ozone layer of the atmosphere, ozone "holes". The impact of solar activity on the biosphere, the human body and human health.
10. Hygienic value of infrared radiation of the Sun, pathology caused by its excessive action, its prevention. Infrared radiation of artificial origin and the use of its sources in medicine.
11. Hygienic value of visible radiation of the Sun and its use in medicine, devices for determination. Issues of biosafety of solar radiation.
12. Hygienic value of ultraviolet radiation of the Sun and its use in medicine, devices for determination. Biogenic and abiogenic action of ultraviolet rays. Insufficient and excessive ultraviolet radiation, their negative impact on the body. The concept of erythema and prophylactic dose of ultraviolet radiation. Artificial sources of ultraviolet radiation and their comparative hygienic characteristics. The use of natural and artificial ultraviolet radiation for the prevention of human diseases, prevention of harmful effects of physical, chemical and biological factors. Features of the effect of ultraviolet radiation on the elderly. Features of UVB use for primary and secondary prevention of various diseases in the elderly. Issues of bioethics in the application of ultraviolet radiation.
13. Biosphere, its components (atmosphere, hydrosphere, lithosphere). The teachings of V.I. Vernadsky on the noosphere.
14. Atmosphere and its structure. The natural chemical composition of atmospheric air and the hygienic value of its individual components. Oxygen, nitrogen, carbon dioxide, ozone, their biological role. Atmospheric pressure and its effect on the body. Electrical state of the

- atmosphere (air ionization, electric field of the Earth, geomagnetic field, electromagnetic fields of radio frequencies and others), its hygienic value.
15. Denaturation of the biosphere. The main sources, types and consequences of anthropogenic air pollution and indoor air. Characteristics of sources of air pollution in the settlement. Regularities of the spread of pollution in the atmosphere. Transformation of chemicals in atmospheric air. The impact of polluted air on the health and living conditions of the population. Direct effect on the body: acute poisoning, chronic specific and nonspecific diseases. Indirect action due to atmospheric circulation, attenuation of ultraviolet radiation, reduction of light levels, etc. Ways and means of prevention of negative impact of polluted air on health. Bioethical aspects and issues of biosafety of denaturation of the biosphere.
 16. Weather, definition. Basic laws of weather formation. Weather-forming and weather-characterizing factors. Direct and indirect effects of weather on human health. Medical weather classifications. Heliotherapeutic reactions of healthy and sick people. Prevention of heliotherapeutic reactions: permanent, seasonal, urgent. Influence of weather on the dynamics of air pollution. The concept of temperature inversion.
 17. Climate, definition. Climate-forming and climate-characterizing factors and indicators. General and applied (medical, construction) classifications of climate. Acclimatization. Phases of acclimatization. Climatotropic reactions of healthy and sick people, their prevention. Features of acclimatization in the polar regions, deserts, highlands, dry and humid tropics. Use of climate for medical and health purposes. Bioethical aspects and issues of biosafety of the impact of natural and anthropogenic factors on human health.
 18. Housing, social and hygienic problems of housing construction in Ukraine and other countries. Types of residential and public buildings. Hygienic characteristics of construction and finishing materials.
 19. Hygienic value of physical properties of air (temperature, humidity and speed of movement). Microclimate and its hygienic value. Types and influence of uncomfortable (cooling and heating) microclimate on human heat exchange and health. Methods and indicators for assessing the complex effect of the microclimate on the human body (physical modeling, effective-equivalent temperatures, the resulting temperatures and others).
 20. Hygienic value of natural and artificial lighting in residential and public premises, their hygienic assessment.
 21. Methods for determination and hygienic assessment of dust, chemical and bacteriological air pollution. Basic concepts of types, hygienic value and indicators of ventilation. Necessary and actual volume and frequency of ventilation, their scientific substantiation. The concept of an air cube.
 22. Adverse physical and chemical factors in the operation of household appliances. Hygienic characteristics of natural and synthetic building and finishing materials and products from them. Hygiene and biosafety of housing with the use of modern chemical compounds in the home.
 23. Urban transport and other adverse environmental factors in the settlement (noise, vibration, electromagnetic fields, air pollution, excessive psychogenic loads, etc.), their sources and measures to eliminate harmful effects.
 24. Hygienic features of planning and development of rural settlements. Sanitary equipment of rural housing. Ways to increase the level of communal conditions for rural residents.
 25. Biosafety of residential and public buildings and structures.
 26. Water as an environmental factor, its hygienic value. Norms of water consumption depending on the level of communal and sanitary improvement of the settlement, living conditions, stay and human activity.
 27. General hygienic requirements for drinking water quality, its organoleptic properties, chemical composition, epidemic safety.
 28. Influence of organoleptic properties of drinking water on the level of water consumption and the state of sanitary culture of the population.
 29. Water as an etiopathological factor of diseases of non-infectious nature. Danger to human health of excessive content in water of various chemicals of natural origin and chemical compounds that fall due to anthropogenic pollution. The concept of biogeochemical provinces. Endemic fluorosis, water-nitrate methemoglobinemia.
 30. Hygienic value of insufficient content of some microelements in water for caries (fluoride), endemic goiter (iodine) and other diseases.

31. Epidemiological significance of water. The role of water and water supply conditions in the spread of infectious diseases. Classification of infectious diseases, the causative agents of which are transmitted by water (cholera, typhoid fever, dysentery, etc.). The role of sanitary indicative microorganisms for assessing the quality of drinking water by bacterial composition (coli-index, coli-titer, microbial count).
32. Sources of water supply, their comparative hygienic characteristics.
33. Centralized and decentralized water supply systems, their comparative hygienic characteristics. Scientific substantiation of drinking water quality standards. State sanitary rules and norms of water quality. Methods of water purification: basic (lightening, decolorization and disinfection) and special (softening, demineralization, deodorization, decontamination, fluorination, defluorination and others).
34. Decentralized water supply system. Hygienic requirements for the arrangement and operation of mine wells and catchments of springs. General scheme of arrangement of the main structures of the water supply system from underground and surface water supply sources. Water supply network and its arrangement. Causes of water pollution and infection in the water supply network; prevention methods. Sanitary supervision of water supply of populated cities. Sanitary protection zones of the main water supply facilities. Bioethical aspects and issues of biosafety of water supply sources use. The value of drinking water quality in the biosafety of the population.
35. Soil, definition. Origin, formation, mechanical structure, physical properties and chemical composition of soil. Hygienic assessment of different types of soils. Geochemical, geoenvironmental characteristics of soils.
36. Sources of soil pollution in modern conditions of industrialization and chemicalization of the national economy. The impact of contaminated soil on the health and sanitary living conditions of the population. The role of soil in the occurrence and spread of infectious diseases (anaerobic infections) and invasions. Soil and diseases of non-infectious etiology. Processes and indicators of soil self-cleaning. Assessment of soil sanitation according to chemical and biological indicators.
37. Theoretical bases and methods of hygienic rationing - maximum permissible concentrations of harmful chemicals in the soil. Importance of sanitary condition of soil and sanitary protection of water objects in biosafety of the population.
38. Principles of cleaning settlements. Systems and facilities for temporary storage, removal, disposal and utilization of solid and liquid waste of domestic and industrial origin.
39. Liquid waste, their classification and sanitary-epidemiological significance.
40. Sewerage of settlements, its importance in the prevention of infectious diseases. Influence of sewerage of settlements on sanitary condition of soil and living conditions of the population.
41. Hygienic principles of rational, preventive, curative, dietary and curative-preventive nutrition. Indicators of adequacy and balance of nutrition.
42. Classification and hygienic characteristics of basic nutrients. Physiological norms of the need for basic nutrients and energy of different groups of the population. Methods of assessing the nutrition of the population.
43. Basic principles of sanitary examination of food products. Classification of food products and methods for assessing the degree of their quality. The concept of counterfeit and refined products, as well as surrogate products.
44. Physiological and hygienic significance of proteins in human nutrition. Diseases caused by protein deficiency and excess and their prevention. The concept of protein-energy deficiency.
45. Physiological and hygienic value of carbohydrates in human nutrition. Diseases caused by deficiency and excess of carbohydrates and their prevention.
46. Physiological and hygienic value of fats in human nutrition. Diseases caused by deficiency and excess of fats and their prevention. Signs of fat spoilage. Refined and superheated fats and their hygienic value.
47. Physiological and hygienic value of vitamins in human nutrition. Diseases caused by deficiency and excess of vitamins and their prevention. Hygienic value of flavoring substances in food.
48. Hygienic value of macro- and microelements in human nutrition. Diseases caused by deficiency and excess of trace elements. The concept of biogeochemical provinces. On the prevention of biogeochemical endemics.

49. Nutritional and biological value of milk and dairy products. Fermented milk products and their medicinal value. Sanitary examination of milk and dairy products. Quality indicators and signs of falsification and spoilage of milk.
50. Nutritional and biological value of grain processing products. Indicators of quality and spoilage of flour.
51. Nutritional and biological value of vegetables and fruits. Classification of carbohydrates. Easily and difficult to digest carbohydrates and their hygienic value.
52. Nutritional and biological value of meat and meat products. Sanitary examination of meat and meat products. Signs of spoilage of meat. Prevention of diseases associated with the consumption of substandard meat products.
53. Nutritional and biological value of fish and fish products. Sanitary examination of fish, fish products and canned food. Signs of fish spoilage. Diseases associated with the consumption of fish products.
54. Hygienic characteristics of methods and means of food preservation. Sanitary examination of canned food and food concentrates.
55. Food poisoning and their prevention (classification of food poisoning, etiological factors, tactics and responsibilities of the doctor who first diagnosed food poisoning). General scheme of investigation of a case of food poisoning.
56. Food poisoning of bacterial nature (etiology, conditions that contribute to food poisoning, differential diagnosis). Prevention measures.
57. Food poisoning of chemical nature and their prevention (classification, etiological factors, differential diagnosis). Prevention measures.
58. Hygienic basics of medical and dietary nutrition. Classification of food products taking into account their therapeutic effect. Tasks and responsibilities of a nutritionist.
59. Hygienic bases of medical and preventive nutrition at work. Rules of food sampling for laboratory research.

Discussed and approved at the meeting of the department of
MEDICAL AND PREVENTIVE DISCIPLINES,
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