

MINISTRY OF HEALTH OF UKRAINE
KHARKIV NATIONAL MEDICAL UNIVERSITY
DEPARTMENT OF HYGIENE AND ECOLOGY NO. 2

Guide
on the course of
“HYGIENE AND ECOLOGY”

Module No. 3

“Assessment of the state of environment and its effect on the population’s health”
(hygiene and ecology)

For sixth-year students in speciality 7.110101 – General Medicine

Student _____

Faculty _____

Group _____

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“Assessment of the state of environment and its effect on the population’s health”
(hygiene and ecology) for students of the 6th year in speciality 7.110101 - General
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Subject 23: Hygienic aspects of residing of population in territories with increased levels of radioactive pollution as a result of the Chernobyl accident. (SIW).

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List of literature

Structure of Content of Typical Tasks of Specialist's Activity

Typical Task of Specialist's Activity According to EJD/EPP		Blocks of Substantial Modules According to EJD/EPP								
		SP003	SP007	SP010	SP011	SP012	SP013	SP045	SP048	SP071
1	2.PF.S.1.SM.O.1							*		+
2	2.PF.S.1.SM.O.3				+	+		*		*
3	2.PF.S.1.SM.O.4					+		*		*
4	2.PF.S.1.SM.O.5				+		+	*		*
5	2.PF.S.1.SM.O.6				+	+	+	*		*
6	2.PF.S.1.SM.O.7					+		*		*
7	2.PF.S.2.SP.O.8				+		+	*		+
8	3.PF.S.12.SM.O.27	+		+				*	+	*
9	3.PF.S.12.SM.O.29	+		+				*	+	*
10	3.PF.S.12.DM.O.31	+		+				*	+	*
11	3.PF.S.12.DM.O.32	+	+	+				*	+	*
12	3.PF.S.12.DM.O.33	+	+	+				*	+	*
13	3.PF.S.12.DM.O.34	+	+	+				*	+	*
<p>+ provided by EJD/EPP * introduced in addition (choice of HEE)</p> <p>Stages of task accomplishment 1.Hygienic estimation of the situation 2.Determination of risk factors 3.Prognostication of consequences 4.Substantiation of measures 5.Normative provision of fulfilment of specialist's activity</p> <p>Choice of HEE: SP 045, SP 071.</p>		To analyse the state of the environment and influence of its factors on health of population	Demonstrate mastering methods of hygienic estimation of effect of environmental factors	Interpret hygienic laws and general conformities of connection of health with factors and conditions of vital functions environment	Substantiate hygienic measures on prevention of diseases on non-infectious origin	To plan measures on observance of healthy mode of life, personal hygiene and introduce them in practice of health protection	Plan organisational and substantial measures concerning preventive and current sanitary inspection	Co-ordinate realisation of preventive measures with plans of development of territorial, administrative and industrial units	Analyse state of the environment on the basis of integral criteria of estimation of population health state	Substantiate realization of preventive measures according to Ukrainian sanitary laws currently in force

List of abbreviations.

Module No. 1 - General items of hygiene and ecology, (3-rd year)

Module No. 2 - Special items of hygiene and ecology, (3-rd year)

Module No. 3 – Assessment of the state of environment and its effect on the population's health (hygiene and ecology), 6th year

ECTS - European Credit-Transfer System

TC - test credit

TM - test module
SI - sign-intellectual knowledge and skills
SP - sign-practical knowledge and skills
FMC - final module control
ISW - individual student's work
EQC- educational-qualifying characteristic of quality of education
EPP - educational-professional program
SP - subject-practical knowledge and skills
SI - subject -intellectual knowledge and skills
PF - knowledge and skill of professional work
S - stereotypic knowledge and skills
IESW - independent extracurricular student's work
CEA - current educational activity
TTSA - typical task of the specialist's activity
 + - stipulated by EJD / EPP
 * - brought in addition (choice of High School)

System of students' progress estimation

1. The organization of process of training is carried out by credit-module system according to the requirements of Bologna process.

The current control is carried out at each practical lesson according to specific goals. *The final control of mastering the module* is carried out after its end. The estimation of a student's progress is rating and is given according to the mark scale by ECTS system and the traditional scale accepted in Ukraine. The estimation of mastering the module is carried out at the last lesson according to the level of preparation of the student.

Distribution of points which are given to students

No.	Module No. 3 – “Estimation of state of the environment and its influence on population's health” (hygiene and ecology)	Maximum of points	Minimum of points	Filled in by the student		
				MARK	POINTS	
1.	Substantial Module 1.	Topic 1	6	4		
2.		Topic 2	6	4		
3.		Topic 3	6	4		
4.		Topic 4	6	4		
5.	Substantial Module 2.	Topic 6	6	4		
6.		Topic 7	6	4		
7.		Topic 8	6	4		
8.		Topic 9	6	4		
9.		Topic 10	6	4		
10.	Substantial Module 3.	Topic 12	6	4		
11.		Topic 13	6	4		
12.	Substantial Module 4.	Topic 15	6	4		
13.		Topic 16	6	4		
14.	Substantial Module 5.	Topic 18	6	4		
15.		Topic 19	6	4		
16.	Substantial Module 6.	Topic 21	6	4		
17.		Topic 22	6	4		
18.	Substantial Module 7.	Topic 24	6	4		
19.		Topic 25	6	4		
	SUBSTANTIAL MODULES IN ALL		114	76		
	ISW	Topics 5; 11; 14; 17; 20; 23; 26	6			
	FMC		80	44		
	Total sum of points		200	120		

2. Correspondance of point scale to the traditional scale of estimation:

Point scale	Traditional scale
6	„5”
5	„4”

4	„3”
0	„2”

3. Converting of FMC marks into ECTS points

FMC mark by ECTS scale	Correspondance of correct solution to educational-control tasks, %	FMC mark by the 4-point system
72–80	90–100	"5"
60–71	75–89	"4"
44–59	55–74	"3"
< 44	< 55	"2"

Established maximum of points – 80, positive minimum – 44.

4. Then the number of points received by a student is estimated by ECTS ("A", "B", "C", "D", "E") and traditional system ("5", "4", "3").

Correspondence of estimation of the discipline in points to ECTS estimation and traditional mark

Sum of points	Mark by ECTS scale	Traditional mark
180–200	A	5
160–179	B	4
150–159	C	4
130–149	D	3
120–129	E	3
<120	F _X , F	2

Note.

1. The maximum quantity of points for current educational activity – 120.
2. The student is admitted to the final module control when fulfilling all conditions of the curriculum and in case if he (she) has not less than 76 points for current educational activity.
3. The final module control is accounted to the student if he (she) has not less than 44 points of 80 points.
4. Module “Estimation of the state of the environment and its influence of population’s health” (hygiene and ecology) is accounted to the student if he (she) has not less than 120 points (76 points for the current educational activity + 44 points for the final module control).
5. The student’s sum of points is estimated by ECTS scale ("A", "B", "C", "D", "E") and traditional system ("5", "4", "3").
6. Mark F_X, F („2”) is given to the students who are not accounted the module on the discipline after the end of its studying.
7. Mark F_X, („2”) is given to the students who have minimum quantity of points for the current educational activity, but who are not accounted the final module control. This category has the right to repeat module control by individual schedule but not more than 2 times.
8. Mark F_X, F („2”) is given to the students who attended all lessons but do not have minimum sum of points for current educational activity and are not admitted to the final module control. This category has the right for the second studying the module.

Basic requirements of safety measures
« The Instruction on Safety of Life Activity»
For employees and students who work and study at the University
(approved by order of the Rector of KhNMU No. 412, 2008)

1. Instructing on safety of life activity is conducted by the teacher of the group before the beginning of the academic year.
2. Classes with students and post-graduates students are conducted on the basis of the internal regulations of the University and its rector's orders.
3. Very often accidents are caused by students' violations of the established rules of behaviour and regulations. In this connection, one should:
 - be attentive when moving on the territory of the University;
 - study the location of the premises and their exits;
 - keep to the right at oncoming movement;
 - not run on the territory of the University;
 - not stand and go under any cargo which moves, as well as in places of possible fall of various subjects;
 - in class, be attentive, not engaged in unauthorized activities and not distract his/her associates.

It is FORBIDDEN for students of the University:

- to switch on and off (except for emergencies) machines and mechanisms, whose operating was not charged by the head of works;
- to taste and smell chemical substances;
- to lean or climb out of the windows of premises;

It is necessary to maintain cleanliness and carry out requirements of personal hygiene on the territory of the University, in its laboratories, lecture halls, sanitary and personal service premises.

Subject 1: Methodological and methodical fundamentals for studying the influence of a complex of environmental factors on the population’s health.

Date _____ “___”20__;

Student’s name, year, group _____

Learning objective

Master theory fundamentals and basic assessment scheme of environmental factors’ influence on population health.

Basics

You should know:

1. Methodological and technique principles of general hygiene (in the extent of the previous lecture courses and practical studies on given discipline).
2. Elements of theory of probability, mathematical statistics, principles of information science and computer engineering (from the course of biological and medical physics).

You should have the following skills:

1. To examine environmental objects for the purpose of sanitation and hygienic assessment, to master sanitary-descriptive technique and other most popular analyses of organism responses to harmful environmental influences
2. To consider principal statistic indices, which characterize environment and population health denaturation.
3. To use reference and normative materials.

Independent Control of Classroom and SIW in test tasks	
<p>1. Name environmental factors which influence human health:</p> <ol style="list-style-type: none"> 1). Individual (personal) *2). Physical (power) 3). Personal (characterologic) 4). Population (global) *5). Chemical (material) 6). Homeopathist (nosological) *7). Biological (biotic) *8). Psychological (information) 9). Genetic (chromosomal) 	<p>4. Give a definition of the term “denaturized environment”:</p> <ol style="list-style-type: none"> 1). Noosphere *2). Polluted habitat 3). Industrial environment 4). Habitat which is not changed as a result of human activity 5). Living environment 6). Environment 7). Internal environment 8). Artificial environment 9). Habitat
<p>2. List the main methods of hygienic researches:</p> <ol style="list-style-type: none"> 1). Method of mathematical modelling *2). Epidemiological method *3). Method of sanitary inspection *4). Method of hygienic experiment 5). Entomologic method 6). Population method 7). Method of brain storm *8). Method of sanitary examination 9). Method of indistinct logic 	<p>5. Give a definition of the term “artificial environment”:</p> <ol style="list-style-type: none"> 1). Industrial environment *2). Environment which is created by the human in the closed space 3). Social environment 4). A part of environment which surrounds the person 5). Environment 6). Internal environment 7). The environment created by various climatic conditions 8). Denaturized environment 9). Habitat
<p>3. Give a definition of the term “constant natural environment”:</p> <ol style="list-style-type: none"> *1). Habitat, which is not changed as a result of human activity 2). Artificial environment 3). Changed natural environment 4). Noosphere 5). Environment created by climatic factors 6). Denaturized environment 7). Internal environment 8). Industrial environment 	<p>6. Give a definition to the term “biosphere”:</p> <ol style="list-style-type: none"> 1). A part of the environment *2). A part of atmosphere, hydrosphere and lithosphere in which ability to live of organisms is observed 3). A part of atmosphere and hydrosphere 4). A part of lithosphere and hydrosphere 5). A part lithosphere and stratospheres 6). A part of space 7). Stratosphere and noosphere 8). Lithosphere and space 9). Atmosphere and biosphere

9). Social environment	
<p>7. Choose biotic factors of the environment which influence human health:</p> <ol style="list-style-type: none"> 1). Climatic 2). Radiation *3). Phytogenous 4). Industrial 5). Physical *6). Anthropogenic 7). Chemical *8). Microbogenic *9). Zoogenic 	<p>12. Choose the basic stages of control of the condition of the environment:</p> <ol style="list-style-type: none"> 1). Control over conditions of work and life *2). Development and substantiation of hygienic standards *3). Control over observance of hygienic standards 4). Control over condition of atmospheric air of nearby territory *5). Measures on correction of influence of environmental factors on the human organism 6). Hygienic researches of the environment 7). Physiological researches of the environment 8). Research of content of chemicals in the environment 9). Bacteriological researches of the environment
<p>8. Choose abiotic factors of the environment which influence human health:</p> <ol style="list-style-type: none"> 1). Climatic 2). Radiation 3). Phytogenous 4). Industrial *5). Physical 6). Anthropogenous *7). Chemical 8). Microbogenic 9). Zoogenic 	<p>13. Name objects of the environment which are subject to the obligatory control over sanitary-and-epidemiologic supervision:</p> <ol style="list-style-type: none"> *1). Sources of water supply 2). Conditions of life *3). Superficial water reservoirs 4). Industrial environment 5). Organization of educational activity *6). Atmospheric air 7). Free time 8). Nutrition of the population *9). Soil
<p>9. List kinds of epidemiological method of hygienic researches:</p> <ol style="list-style-type: none"> 1). Sanitary description 2). Sanitary examination *3). Sanitary-statistical method *4). Medical examination of populations 5). Profound sanitary inspection 6). Laboratory hygienic experiment *7). Clinical supervision of volunteers *8). Natural experiment among the population 9). Full-scale hygienic experiment 	<p>14. List kinds of researches which are necessary during development and substantiation of hygienic standards:</p> <ol style="list-style-type: none"> 1). Statistical *2). Hygienic *3). Toxicological *4). Physiological *5). Clinical-functional *6). Bacteriological 7). Balance 8). Budgetary 9). Calculation
<p>10. List kinds of method of sanitary inspection during hygienic researches:</p> <ol style="list-style-type: none"> *1). Sanitary description 2). Sanitary examination 3). Sanitary-statistical method 4). Medical examination of populations *5). Profound sanitary inspection 6). Laboratory hygienic experiment 7). Clinical supervision of volunteers 8). Full-scale experiment among the population 9). Full-scale hygienic experiment 	<p>15. Indicate, what environmental factors should be studied using the method of natural hygienic experiment:</p> <ol style="list-style-type: none"> 1). Biological 2). Bacteriological *3). Air *4). Water *5). Soil *6). Social conditions 7). Biotic 8). Abiotic *9). Foodstuff
<p>11. List versions of the method of hygienic experiment:</p> <ol style="list-style-type: none"> 1). Sanitary description 2). Sanitary examination 3). Sanitary-statistical method 4). Medical examination of populations 5). Profound sanitary inspection *6). Laboratory hygienic experiment 7). Clinical supervision of volunteers 8). Full-scale experiment among the population *9). Full-scale hygienic experiment 	<p>16. Choose methods which are used during substantiation of hygienic standards:</p> <ol style="list-style-type: none"> 1). Physical and chemical *2). Mathematical *3). Cybernetic *4). Sanitary-engineering *5). Laboratory 6). Bacteriological 7). Pathologoanatomic 8). Pathophysiological 9). Clinical

<p>17. Name, what hygienic standards should be proved using laboratory hygienic experiment method:</p> <ol style="list-style-type: none"> 1). Average doze *2). Maximum permissible concentration *3). Maximum permissible level *4). Roughly safe level of influence 5). Average level *6). Maximum permissible doze 7). Average concentration 8). Lethal doze 9). Limit of doze 	<p>22. For prophylaxis of environmental contamination, mechanical separation of solid household waste is used. Name a method by means of which it is possible to carry out mechanical recycling of these waste.</p> <ol style="list-style-type: none"> *1). Pressing of waste in building blocks. 2). Hydrolysis. 3). Burning as power fuel. 4). Burial ground disposal. 5). Neutralization in biothermal wards
<p>18. Name, what methods of researches are used during carrying out laboratory experiment on people-volunteers:</p> <ol style="list-style-type: none"> 1). Statistical *2). Biochemical *3). Hygienic *4). Immunologic *5). Psychophysiological *6). Clinical 7). Bacteriological 8). Invasive 9). Pathomorphologic 	<p>23. In industrial region of one of industrial cities in children of preschool age diseases with chronic bronchitis with an asthmatic component and bronchial asthma have become frequent. What of constants air pollutants could become their reason?</p> <ol style="list-style-type: none"> *1). Sulfur dioxide 2). Carbon oxide 3). Lead 4). Nitrogen oxides 5). Products of photochemical remeasures
<p>19. Name installations which should be used during carrying out laboratory hygienic experiment on animals:</p> <ol style="list-style-type: none"> 1). Exhaust hoods *2). Special wards *3). Stands *4). Laboratory installations 5). Field laboratories 6). Adaptometers 7). Glass capacities 8). Sterilizer boxes 9). Equipment of the working zone of the workshop 	<p>24. The cotton-spinning factory is situated near an inhabited area, that causes complaints of inhabitants of microdistrict. The factory belongs to the 2nd class. What is the dimension of sanitary-protective zone for the given enterprise?</p> <ol style="list-style-type: none"> *1). 500 m 2). 1000 m 3). 300 m 4). 100 m 5). 50 m
<p>20. Name stages of adaptable process which should be considered during hygienic researches:</p> <ol style="list-style-type: none"> 1). Stage of involving in activity which is carried out 2). Stage of the maximal work capacity *3). Urgent stage 4). Stage of decrease in work capacity *5). Stage of formation of long-term adaptation *6). Stage of the organized long-term adaptation 7). Stage of incomplete compensation *8). Stage of exhaustion 9). Stage of final eagerness 	<p>25. The apartment house is located along a highway with intensive movement of transport. What measures of noise protection are the most effective?</p> <ol style="list-style-type: none"> *1). Construction of noise-protective houses-shields 2). Increase in territorial distance from the road 3). Use of noise-protective gardening 4). Measures of administrative influence 5). Reduction of level of noise for motor transport engines
<p>21. Name the basic measures on protection of the environment from pollution:</p> <ol style="list-style-type: none"> 1). Biological 2). Physical 3). Chemical *4). Legal *5). Social and economic *6). Hygienic *7). Technical *8). Sanitary-educational 9). Physiological 	<p>26. With the purpose of a scientific substantiation of a threshold of the smell, irritating and reflex effect of atmospheric pollution, special researches are carried out. What research methods are applied at that?</p> <ol style="list-style-type: none"> *1). Olphactometry 2). Otoscopy 3). Ophthalmotonometry 4). Lymphangiography 5). Magnet-resonant tomography

Transactions of student's independent work

Kind of activity	Result of activity
1 _____ _____ _____ _____	
2 _____ _____ _____	
3 _____ _____ _____	
4 _____	

Theoretical questions to the final module control:

1. Hygiene as a science, its place in work of doctors of general practice. The purpose, the task and methods of research. Principles of hygienic normalization.
2. The basic directions of scientific research of modern hygiene. Laws of hygiene. Bases of the legislation of Ukraine about public health services and sanitary-and-epidemiologic well-being of the population.
3. Methodological and methodical bases of studying the environmental factors and their influence on health state of the population.
4. The basic plan of hygienic control over working conditions, life and factors of the environment.
5. The general plan of studying and estimation of interrelations of environmental factors and population's health.
6. The technique of the qualitative (conceptual) analysis of the condition of environment and "normalized" forecasting of changes of the level of population's health by condition of pollution of atmospheric air, water, soil.
7. The technique of the quantitative analysis of condition of the environment.
8. Zones of observation, definition of concept. The technique for choice of zones of observation.
9. Concept about basic schemes for research of influence of environmental factors on health of the population.
10. Health of the population as an integrated parameter of the condition of the environment.
11. Concept about epidemiological method of studying health state of the population and the basic ways of its realization.
12. The technique of the qualitative (conceptual) analysis of the level of population's health and its use in doctor's practical activities.
13. The technique of the quantitative analysis of the level of population's health, its use in doctor's practical activities.

Final test control – open base tests

Final grade

Teacher's signature _____

Subject 2: Hygienic assessment of a potential risk, produced by environmental factors on the human organism and health of the population.

Date _____ “ ____ ”20 __;

Student's name, year, group _____

Learning objective

Master theoretical knowledge and general scheme on the risk assessment for population health caused by the environment factors.

Basics

You should know:

1. Main definitions used in the risk assessment methodology.
2. Main stages of the risk assessment methodology.

You should have the following skills:

1. To calculate the relative and population health risk.
2. To operate with microcomputer or PC.
3. To identify the hazard factor and state the qualitative value of harmful effects for health.
4. To substantiate the scheme and content of main stages of the risk methodology.
5. To apply information and normative materials.

Independent Control of Classroom and SIW in test tasks	
<p>1. What is the most complete definition of concept "monitoring" concerning hygiene?</p> <ol style="list-style-type: none"> 1) Continuous or long supervision 2) Constant supervision over process with the purpose to reveal its correspondence to desirable result or initial offers 3) Supervision and the prevention *4) System of supervision, analysis, estimation and forecast of health state of the population and the environment of human vital activity, as well as revealing of cause-effect relations between population health state and influence of environmental factors on it. 5) System of supervision, analysis and forecast. 	<p>4. What data are applied during realization of social-hygienic monitoring (SHM)?</p> <ol style="list-style-type: none"> 1. Concerning health state of the population and factors of influence on its environment of vital activity, 2. Concerning natural-climatic factors, sources of technogenic effect on surrounding habitat, 3. Radiation condition; 4. Social environment of the human; *5. All listed factors.
<p>2. What is the legislative basis for carrying out monitoring in Ukraine?</p> <ol style="list-style-type: none"> 1. The law of Ukraine "About provision of sanitary and epidemic well-being of the population" 2. Bases of the legislation on public health services 3. Decree of CM of Ukraine «About the establishment of the Order of carrying out the state social-hygienic monitoring ». *4. The law of Ukraine "About provision of sanitary and epidemic well-being of the population" and Decree of CM of Ukraine «About the establishment of the Order of carrying out the state social-hygienic monitoring ». 5. All mentioned. 	<p>5. What of organizational principles of monitoring is practically realized as carrying out techniques on the basis of developed and approved by Ministry of Health?</p> <ol style="list-style-type: none"> *1. State character and system approach; 2. Taking into account age features and laws of interaction of biological and environmental factors; 3. Unification of estimation, presence of criteria, standards, estimating scales, as well as a standard level of health to which it is necessary to aspire; 4. Inter-department approach; 5. Principle of feedback.
<p>3. What data of supervision are used within the limits of carrying out monitoring?</p> <ol style="list-style-type: none"> 1. About the population's health state and factors of influence on its environment 2. About natural-climatic factors, sources of technogenic effect on surrounding habitat 3. Social environment of the human 4. Condition of protection and conditions of work, structure and quality of Nutrition 	<p>6. What is « information fund of data of state SHM »?</p> <ol style="list-style-type: none"> *1. Database about population's health state and environment of vital activity 2. Information about sanitary-epidemic well-being of administrative territory 3. Results of the analysis of morbidity of the population with chronic non-infectious diseases 4. Results of the control of the environment 5. All mentioned.

*5. About all mentioned.	
<p>7. What does not belong to the primary goals of monitoring?</p> <p>1. Formation of information fund; 2. Revealing cause-effect relationships between health state of the population and influence of environmental factors on it on the basis of their system analysis and estimation of risk for human health; 3. Preparation of offers concerning improvement of activity of authorities and institutions of local government concerning provision of sanitary and epidemic well-being of the population; *4. Developing techniques of the analysis of health state and environment; 5. All mentioned.</p>	<p>13. What does not belong to ways of carrying out monitoring?</p> <p>1. Study of parameters of health state of the population and factors of influence on its environment 2. Collecting, preservation, processing and systematization of data about results of supervision over health state of the population and factors of influence on its environment *3. Working out the measures directed at optimization of health and condition of the environment; 4. Use of information database about health state of the population and environment 5. All mentioned.</p>
<p>8. Performance of what principle of monitoring gives an opportunity to standardize the received data and to make these data comparable as much as possible?</p> <p>1. State character and system approach; 2. Taking into account age features and laws of interaction of biological and environmental factors; *3. Unification of estimation, presence of criteria, standards, estimating scales, as well as a standard level of health to which it is necessary to aspire; 4. Inter-department approach; 5. Principle of feedback.</p>	<p>14. What are functional duties of Ministry of Health when realizing SHM?</p> <p>1. Formation of information fund; 2. Methodical provision of work on carrying out monitoring; 3. Preparation of offers concerning realization of the measures directed at protection of population health and the environment, intended for authorities and institutions of local government; 4. Work on improvement of technologies of reception and transmission of data by information channels of communication for formation of information fund; *5. All mentioned.</p>
<p>9. The results of monitoring are not used for:</p> <p>1. Revealing factors which harmfully influence health state of the population, and their estimation; *2. Substantiation of volumes and directions of laboratory researches of the environment; 3. Prognosis of population health state and the environment; 4. Development of urgent and long-term measures on prevention and elimination of influence of harmful environmental factors on health state of the population. 5. All mentioned.</p>	<p>15. Performance of what principle of monitoring assumes research of health on individual, collective and population levels?</p> <p>*1. System approach; 2. Taking into account age features and laws of interaction of biological and environmental factors; 3. Unification of estimation, presence of criteria, standards, estimating scales, as well as a standard level of health to which it is necessary to aspire; 4. Inter-department approach; 5. Principle of feedback.</p>
<p>10. What data are not necessary during realization of monitoring?</p> <p>1. About health state of the population and factors of influence on its environment of vital activity 2. About natural -climatic factors, source of technogenic effect on surrounding habitat, 3. About radiation condition; *4. About psychological well-being of the population; 5. About structure and quality of nutrition.</p>	<p>16. Realization of what principle of monitoring requires application of methods of prenosological diagnostics?</p> <p>1. System approach; 2. Taking into account age features of development; 3. Unification of estimation, *4. Two models of monitoring 5. Feedback.</p>
<p>11. Training of the personnel to performance of screening techniques allows to execute a principle of:</p> <p>1. System approach; 2. Taking into account age features of development; *3. Unification of estimation, 4. Inter-department approach 5. Feedback.</p>	<p>17. Content of what principle of monitoring is development and estimation of efficiency of preventive measures?</p> <p>1. System approach; 2. Taking into account age features of development; 3. Unification of estimation, 4. Inter-department approach *5. Feedback.</p>
<p>12. Introduction of uniform classification and the nomenclature of health states allow to execute a principle of:</p> <p>1. System approach; 2. Taking into account age features of development; *3. Unification of estimation, 4. Inter-department approach</p>	<p>18. What is the content of the first stage of monitoring?</p> <p>*1. Collecting information on health state and environment 2. Statistical processing and analysis of the received information 3. Revelation of critical changes concerning health and environment 4. Search and substantiation of risk factors</p>

5. Feedback.	5. Working out the target preventive program
19. What is the content of the second stage of monitoring? 1. Collecting information on health state and environment *2. Statistical processing and analysis of the received information 3. Revealing critical changes concerning health and environment 4. Search and substantiation of risk factors 5. Working out the target preventive program	25. What is the name for revealing among the population of the latent or not revealed forms of diseases, establishment of physical development which promote occurrence of chronic diseases? 1. Mass screening *2. Perspective screening 3. One-profile screening 4. Multi-profile screening 5. Complex screening
20. At what stage of monitoring the working hypothesis about cause-effect relationships between health and environment is formed? 1. The first 2. The second 3. The third *4. The fourth 5. The fifth	26. What is the content of the third stage of monitoring? 1. Collecting information on health state and environment 2. Statistical processing and the analysis of the received information *3. Revealing critical changes concerning health and environment 4. Search and substantiation of risk factors 5. Working out the target preventive program
21. What is the basic sources of the information for the first stage of monitoring? 1. Report statistical data 2. Results of epidemiological, natural researches 3. Results of the analysis of data *4. Correct answers are 1 and 2 5. Correct answers are 1,2,3	27. What data allows to receive the analysis of the state statistical reporting and the medical documentation? 1. Number and age structure of the population 2. General morbidity and pathological lesion 3. Invalidity, death rate 4. Physical development, distribution on groups of health *5. All mentioned
22. What is the name for mass inspection of the population, healthy or that has deviation, but does not suffer from the given pathology? *1. Mass screening 2. Perspective screening 3. One-profile screening 4. Multi-profile screening 5. Complex screening	28. What does not belong to demographic data on region of supervision? 1. Number of the population 2. Age structure 3. Birth rate 4. Death rate *5. Physical development
23. What does not belong to medical data on region of supervision? 1. Pathological lesion 2. General morbidity 3. Invalidity *4. Age structure of the population 5. Results of prophylactic medical check-ups of humans who have chronic pathology	29. What requirements are shown to techniques or tests which are applied as screening? 1. Reliability, maintenance of measurement of a necessary parameter 2. Sufficient accuracy and specificity 3. Simplicity, practicality, convenience, economic acceptability 4. Absence of traumatism *5. All mentioned
24. At what stage of monitoring medical mapping of territory should be carried out? *1. First 2. Second 3. Third 4. Fourth 5. Fifth	30. What is the name for the system of measures on revealing separate diseases or pathogenic changes? 1. Mass screening 2. Perspective screening *3. One-profile screening 4. Much profile screening 5. Complex screening

Transactions of student independent work

Kind of activity	Result of activity
1 _____ _____ _____ _____	
2 _____	

3 _____	

4 _____	

Theoretical questions to the final module control:

- 1. Methodology of risk estimation. Characteristic of the problem and the basic terms.
- 2. The basic stages of methodology of risk estimation.
- 3. Connection between risk estimation and its management. Risk management and hygienic normalization.
- 4. Problems of application of risk estimation methodology in Ukraine.

Final test control – open base tests

Final grade

Teacher's signature _____

Subject 3: Hygienic assessment of the influence of natural and anthropogenic components of biosphere on the health of a person and of the population.

Date _____ “ ____ ”20 __;

Student's name, year, group _____

Learning objective

1. Master the fundamental methods of collection, processing and analysis of hydrometeorologic and other information for the hygienic assessment of climate and weather in the region.

2. Master the scheme and methods of assessment of the weather and climate influence on human body and health. To elaborate hygienic recommendations for healthy and sick men for prevention of the heliometeorotropic reactions.

Basics

You should know:

1. Physiology of human thermoregulation and adaptation.
2. Basics of the environmental hygiene.
3. Medical classification of the weather conditions.
4. Methods of medical and meteorological forecast.
5. Methods of heliometeorotropic reactions prevention (permanent, seasonal, urgent) for healthy and sick men suffering from different diseases.
6. General and applied medical classifications of climate.
7. Structure and organization of the climate and the weather conditions inspection and forecast services.

You should have the following skills:

1. To determine the characterizing climate and weather conditions indices and state a hygienic value of results.
2. To master statistical calculations including the usage of programmable calculator or computer.
3. To present results of statistical calculations using tables, graphs, diagrams, schematic maps.

Independent Control of Classroom and SIW in test tasks	
<p>1. Name the basic climate-forming factors:</p> <ol style="list-style-type: none"> 1). Temperature, humidity and velocity of air movement *2). Latitude and longitude 3). Insolation character 4). Wind rose 5). Index of weather instability *6). Landscape conditions *7). Closeness to seas and oceans 	<p>5. Name the basic methods for prophylaxis of heliometeorotropic reactions:</p> <ol style="list-style-type: none"> 1). Psychological prophylaxis 2). Increase of specific reactivity of the organism 3). Prophylaxis of nosocomial infections *4). Increase of non-specific resistance of the organism 5). Increase of motor activity *6). Use of measures of medicaments prophylaxis
<p>2. Name the basic stages of heliometeorotropic reactions development:</p> <ol style="list-style-type: none"> 1). Chronic stage 2). Stage of exertion *3). Stage of desadaptation to weather 4). Acute stage 5). Subacute stage *6). Stage of clinical-physiological desadaptation *7). Stage of increased sensitivity to weather 	<p>6. Name weather-characterizing factors:</p> <ol style="list-style-type: none"> 1). Landscape conditions 2). Latitude *3). Heliophysical elements 4). Features of circulation of air masses 5). Degree of bacterial pollution *6). Meteorological factors *7). Electric state of atmosphere *8). Synoptical factors
<p>3. Name climate types according to medical classification:</p> <ol style="list-style-type: none"> 1) Polar 2) Temperate *3) Sparing 4) Tropical 5). Hot *6). Irritable 	<p>7. Name natural weather-forming factors:</p> <ol style="list-style-type: none"> 1). Land improvement 2). Creation of artificial water basins *3). Features of landscape conditions 4). Pollution of atmospheric air 5). Destruction of woods *6). Level of solar radiation *7). Features of circulation of air masses
<p>4. Name the basic climatic areas of Ukraine:</p> <ol style="list-style-type: none"> *1) Southern coast of Crimea 2) Zakarpatye 3) Prikarpatye 4) Donbass 5) Podolie 	<p>8. Choose a type of weather according to I.I.Grigoriev's classification:</p> <ol style="list-style-type: none"> 1. Sparing weather *2. Favorable weather 3. Optimum weather 4. Acute weather

	5. Irritable weather
9. Name the basic climate-characterizing factors: *1). Temperature, humidity and velocity of air movement 2). Latitude and longitude 3). Landscape conditions 4). Features of circulation of air masses 5). Closeness to the seas and oceans *6). Insolation character *7). Wind rose *8). Index of weather instability	16. Name the basic climate types according to geographical classification: 1). Mild 2). Strained 3). Sparing *4). Tropical 5). Irritable *6). Polar *7). Warm *8). Cold
10. Name acclimatization stages: 1). Short-term *2). Initial 3). Permanent 4). Long-term 5). Partial *6). Reorganization of dynamic stereotype *7). Stage of stable acclimatization	17. Name climate types according to building classification: 1). Polar *2). Temperate 3). Sparing 4). Tropical 5). Irritable *6). Hot *7). Warm *8). Cold
11. Name anthropogenic weather-forming factors: 1). Features of circulation of air masses 2). Solar cycles 3). Level of solar radiation 4). Features of landscape conditions *5). Pollution of atmospheric air *6). Melioration *7). Creation of artificial water basins *8). Destruction of woods *9). Irrigation	18. Name the basic kinds of heliometeotropic reactions: 1). Heliometeotropic reactions with hypersensitivity to changes of weather 2). Paradoxical heliometeotropic reactions 3). Heliometeotropic reactions with hyposensitivity changes of weather 4). Subacute heliometeotropic reactions *5). Heliometeotropic reactions with subjective sensations *6). Heliometeotropic reactions with expressed somatic manifestations
12. Name leading measures on prophylaxis of heliometeotropic reactions: *1). Medical classification of weather 2). Geographical classification of weather 3). Building classification of weather 4). Medical-geographical forecasting 5). Medical-geophysical forecasting *6). Medical-meteorologic forecasting *7). Development of individual preventive measures based on information on weather forecast	19. Name types of weather by the rough scheme of medical estimation of weather conditions, which offered by I.I.Nikberg: 1) Sharp 2) Stable indifferent 3) Of "spastic type" *4) Moderately favorable 5) Irritable
13. Choose a type of weather according to G.P.Fedorov's classification: 1) Rather favorable 2) Favorable *3) Optimum 4) Weather of strict medical control 5) Weather of strengthened medical control	20. Name types of acclimatization: *1). Partial acclimatization 2). Initial acclimatization 3). Permanent acclimatization 4). Reorganization of the dynamic stereotype 5). Long-term acclimatization *6). Complete acclimatization
14. Name the basic types of weather according to V.T.Ovcharova's classification: 1) Sharp *2) Stable indifferent 3) Favorable 4) Moderately favorable 5) Irritable	21. Name the basic ways of medicaments prophylaxis of heliometeotropic reactions: *1). Seasonal prophylaxis 2). Monthly prophylaxis 3). Remote prophylaxis 4). Daily prophylaxis 5). Specific prophylaxis *6). Urgent prophylaxis
15. What factors influence the intensity of cooling of heated objects? *1) Air temperature, air humidity, air movement; 2) Air temperature, air humidity; 3) Air temperature, radiating temperature; 4) Air temperature;	22. In what limits air relative humidity in premises is considered normal? *1) 30-60 % 2) 30-50 % 3) 40-50 % 4) 50-60 %

5) Air movement;	5) .30-40 %
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Transactions of student independent work

Kind of activity	Result of activity
1 _____ _____ _____ _____	
2 _____ _____ _____ _____	
3 _____ _____ _____ _____	
4 _____ _____ _____ _____	

Theoretical questions to the final module control:

1. Biosphere and its structure. Circulation of substances in biosphere.
2. Structure, composition and properties, hygienic importance of the atmosphere.
3. Structure, composition and properties, hygienic importance of the lithosphere.
4. Structure, composition and properties, hygienic importance of the hydrosphere.
5. The environment, its components.
6. The general regularities of influence of the environment on the human organism and health of the population.
7. Weather, definition of concept. Factors which form and characterize weather.
8. Regularities of atmospheric circulation. Formation of different types of weather.
9. The basic thermobaric processes. Temperature inversion.
10. Heliometeotropic remeasures of the human, definition of concept, the mechanism of their occurrence.
11. Medical classifications of weather, importance of parameters which lay in their basis.
12. Influence of meteorological conditions on dynamics of atmospheric air pollution.
13. Influence of weather on human health through distortion of dynamics of atmospheric pollution. Temperature inversion.

14. Medical forecasting of weather, principles and methods of prophylaxis of heliometeotropic remeasures.
15. Climate. Definition of concept. Factors which form and characterize the climate of the region.
16. Classification and hygienic characteristic of climatic zones. Climatic zoning of the territory of Ukraine.
17. Features of climate in different natural-geographical regions.
18. Acclimatization. The basic hygienic issues of acclimatization in the North, the South and in conditions arid zones and high mountains.
19. Hydrometeorological service, technique of processing and importance of data of meteorological observation for a medical-hygienic estimation of climatic-weather conditions.
20. Use of climatic factors with health-improving and preventive purpose, sanatorium treatment at different diseases.
21. Climatic resorts of Ukraine.
22. Scientific and technical revolution, its positive and negative consequences.
23. Positive influence of scientific and technical revolution on human health.
24. Global character of biosphere pollution.
25. Pollution of atmospheric air and its influence on health.
26. Pollution of soil and its influence on health.
27. Pollution of water and its influence on health.
28. The general regularities of global pollution of biosphere.
29. Scientific bases and ways of protection of the environment from pollution.

Final test control – open base tests

Final grade

Teacher's signature _____

Subject 4: Hygienic importance of solar radiation and use of its components for prophylaxis of human diseases and sanitation of air, water and subjects.

Date _____ “ ____ ”20 __;

Student's name, year, group _____

Learning objective

1. Become familiar with physical and biological characteristics of ultraviolet radiation (UVR).
2. Master the methods of measuring the ultraviolet radiation intensity.
3. Master the measures of the ultraviolet radiation intensity and the calculations of the exposure to it using the different measuring methods.

Basics

You should know:

1. Nature, physical characteristics and spectral distribution of the solar radiation.
2. Physical characteristics, spectral distribution and biological effect of the ultraviolet radiation (UVR).
3. Dosimetric units and measuring methods of the UVR.

You should have the following skills:

1. Working with ultravioletmeter (uphymeter) according to its instruction.
2. Determination of the reagent titre and substance concentration by volumetric titrimetry methods.
3. Using the mathematical methods of the UVR intensity and dose assessment.

Independent Control of Classroom and SIW in test tasks	
<p>1. List the main components of electromagnetic spectrum of sunlight:</p> <ol style="list-style-type: none"> 1). Radiating radiation *2). Ultra-violet radiation 3). Laser radiation 4). Ultrasound 5). Infrasound *6). Ionizing radiation *7). Infra-red radiation *8). Radiation of radiofrequencies *9). Visible (optical) area 	<p>5. List devices for definition of ultra-violet radiation intensity:</p> <ol style="list-style-type: none"> 1). Luxmeter 2). Actinometer 3). Quartz test tube with uranyl solution 4). Photoexposure meter *5). Quartz test tube with solution of uranyl and oxalic acid *6). Photointensimeter *7). Ultravioletmeter
<p>2. List sources of artificial ultra-violet radiation:</p> <ol style="list-style-type: none"> 1) Electric heater 2) Microwave *3) Bactericidal UV-lamp 4) Electric lamp 5) Gas-discharge lamp 	<p>6. List units of measurement for ultra-violet radiation intensity:</p> <ol style="list-style-type: none"> 1). Cal/sm² 2). Lx 3). McWt/s 4). Cal/ sm² ·min *5). Watt/m²
<p>3. What are the basic kinds of biological (erythematous) doze:</p> <ol style="list-style-type: none"> 1). Radiation *2). Prophylactic 3). Photo-electric 4). Photochemical 5). Generalized *6). Optimal *7). Maximum 	<p>7. The size of biodoze of ultra-violet irradiation of the patient is measured in minutes. What device was used to measure biodoze?</p> <ol style="list-style-type: none"> *1). Gorbachov-Dalfeld's device 2). Ultraviolet-meter 3). Actinometer 4). Radiometer 5). Catathermometer
<p>4. What are biological effects of influence of ultra-violet radiation?</p> <ol style="list-style-type: none"> 1). Thermal effect *2). Erythema 3). Formation of free radicals 4). Diuretic effect 5). Hemopoietic effect *6). Bactericidal effect *7). Vitamin-producing effect 	<p>8. A slight reddening (erythema) on the skin of the child's forearm in 18 hours after a local irradiation in photarium appeared in a window of Gorbachov's biosimulator, irradiation was carried out for 6 minutes. Name preventive doze of irradiation of the child in this photarium.</p> <ol style="list-style-type: none"> *1).45 s 2).60 s 3). 1,5 min.

<p>*8). Pigment-producing effect *9). General stimulating effect</p>	<p>4). 2 min. 5). 3 min.</p>
<p>9. Name the main hygienic requirements to the illumination of premises: *1). It should be close to natural by the spectrum as much as possible 2). It should be diffused 3). It should be aesthetically attractive 4). It should provide bactericidal effect 5). It should provide general stimulating influence on the organism</p>	<p>15. Name the basic method of measurement of ultra-violet radiation intensity: 1). Photo-electric method with help of anemometer 2). Photo-electric method with help of psychrometer *3). Photo-electric method with help of ultraviolet-meter 4). Photochemical method with use oxalic acid 5). Photochemical method with use of uranil *6). Photochemical method with use of uranil and oxalic acid</p>
<p>10. A sportsman from the group of mountain-climbers who have just come back after an ascension to snow top of a mountain saw the ophthalmologist with complaints of sensation of “sand in his eyes”, impossibility to look at bright light. Objectively: hyperemia and edema of the eye conjunctive. The sportsman lost his protective glasses at the beginning of climbing. Make diagnosis and indicate the factor which caused the given disease. 1. Cataract. Infra-red radiation 2. Phototoxicosis. White snow 3. Photoallergy. Ultra-violet radiation *4. Photoophthalmia. Ultra-violet radiation 5. Conjunctivitis. Bright sunlight</p>	<p>16. To provide the maximal improving influence with help of ultra-violet radiation, the doctor should determine the biological doze. The biodosimeter was fixed in a site of the bottom third of the stomach of the child who sunbathed. Duration of skin irradiation in the first window makes 2 min., in the second - 3min., in the third - 4 min., in the fourth - 5 min, in the fifth - 6 minutes, in the sixth - 7 min. 8 hours after irradiation the nurse found out two red strips on the skin. Determine biological (erythematous) doze of ultra-violet irradiation. 1). 3 minutes 2). 10 minutes 3). 5 minutes 4). 30 minutes *5). 6 minutes</p>
<p>11. List the basic pathological conditions at insufficiency ultra-violet radiation: 1. Lesion of sight 2. Lesion of CNS *3. Anemia 4. Lesion of gastrointestinal tract 5. Obesity</p>	<p>17. Name sources of ultra-violet radiation which are used for air disinfection of the closed premises: 1). Erythematous UV-lamp *2). Bactericidal UV-lamp 3). Luminescent lamp 4). Lamp SK-300 5). Gas-discharge lamp</p>
<p>12. What are effects of excessive dozes of ultra-violet radiation: 1). Hemopoietic effect *2). Cancerogenic effect 3). Fibrogenic effect 4). Increase of the general resistance 5). Sharp acceleration of vitamin producing processes *6). Sharp deceleration of vitamin producing processes *7). Mutagenic effect *8). Decrease of general resistance *9). Origin of specific diseases (keratoconjunctivitis, burns etc.)</p>	<p>18. Preventive irradiation using ultra-violet rays is conducted in a special photarium. Calculate the prophylactic doze of ultra-violet radiation for a 5-year-old boy if the biological doze determined with help of Gorbachov-Dalfeld’s biodosimeter makes 5 minutes. *1. 30 seconds 2. 1 minutes 3. 3 minutes 4. 5 minutes 5. 6 minutes</p>
<p>13. Name biochemical and humoral shifts in the human organism which are connected with excessive influence of ultra-violet radiation: 1). Increase of vitamin C content in blood serum 2). Increase of vitamin PP content in blood serum 3). Increase of vitamin B₂ content in blood serum *4). Decrease of complement content in blood serum 5). Increase of the lysozyme content in blood serum</p>	<p>19. Calculate size of prophylactic doze of ultra-violet radiation (for adults and for children) if the biodoze makes 4 minutes: 1).5 minutes 2).1 minutes 3).18 seconds 4).4 minutes *5).24 seconds</p>
<p>14. Determine size of the optimum doze of ultra-violet radiation (for adults and for children) if the biodoze makes 3 minutes: 1).7 minutes *2).3 minutes 3).4 minutes 4).5 minutes 5).2,5 minutes</p>	<p>20. What is the value of the maximal doze of ultra-violet radiation (for adults and for children) if the biodoze makes 5 minutes: 1).1 minute 2).3 minutes 3).4 minutes *4).5 minutes 5).2 minutes</p>

<p>21. To provide the maximal improving influence of ultra-violet radiation, the doctor should determine biological doze. Biodosimeter was fixed in a site of the bottom third of the stomach of the child who sunbathed. Duration of the skin irradiation in the first window made 2 minutes, in the second - 3 minutes, in the third - 4 minutes, in the fourth - 5 minutes, in the fifth - 6 minutes, in the sixth - 7 minutes. After 8-hour irradiation the nurse found out two red strips on the skin. Determine biological (erythematous) doze of ultra-violet irradiation.</p> <p>*1.6 minutes 2.10 minutes 3.5 minutes 4.30 minutes 5.3 minutes</p>	<p>26. The biodoze of ultra-violet irradiation for a patient is measured in minutes. What device was used to determine biodoze?</p> <p>*1. Gorbachov's device 2. UV-meter 3. Actinometer 4. Radiometer 5. Catathermometer</p>
<p>22. Name the main sanitary-hygienic measures on prophylaxis of ultra-violet radiation deficiency:</p> <p>*1). Southern orientation of windows of premises 2). Dietetics 3). Chemotherapy 4). Protection of the environment from pollution 5). Maintenance of cleanliness of windowpane</p>	<p>27. What factors of the environment should be studied with help of the method of natural hygienic experiment?</p> <p>1. Biological 2. Bacteriological *3. Water 4. Biotic 5. Abiotic</p>
<p>23. What range of ultra-violet radiation has bactericidal effect?</p> <p>1).315-265 nanometers *2).280-10 nanometers 3).320-280 nanometers 4).380-300 nanometers 5). 390-300 nanometers</p>	<p>28.Name a parameter of the calculation method of estimation of natural illumination:</p> <p>1). Projection of the sky *2). Coefficient of natural illumination 3). Factor of deepening 4). Factor of aeration 5). Angle of aperture</p>
<p>24. Name the main method for estimation of natural illumination in a premise:</p> <p>1). Chemical 2). Logarithmic *3). Calculation 4). Fluorescent 5). Descriptive</p>	<p>29. Name parameters of the geometrical method for estimation of natural illumination:</p> <p>1). Factor of correlation 2). Factor of aeration *3). Angle of opening 4). Psychrometer factor 5). Factor of natural illumination</p>
<p>25. Name devices for illumination measurement:</p> <p>1). Biodosimeter 2). Piranometer *3). Luxmeter 4). UV-meter 5). Radiometer-roentgenometer</p>	<p>30.Indicate physical units which characterize illumination:</p> <p>1). Candle 2). Pascal *3). Lumen/m² 4). Farenheit 5). Calvin</p>

Transactions of student independent work

Kind of activity	Result of activity
1 _____ _____ _____ _____	
2 _____ _____ _____ _____	

Subject 5: Scientific fundamentals of medical biorhythmology and chronohygiene (SIW).

Date _____ “ ____ ”20 __;

Student’s name, year, group _____

Learning objective

1. Strengthen the theoretical knowledge on biological rhythms and their main characteristics and types.
2. Master the methods of determination of the physiological, psychological and physiological, and calculation correlates of the organism biological rhythm.
3. Learn the biorhythmological principles of the rational organization of the people’s everyday activity.

Basics

You should know:

1. Initial conditions and development reasons of medical biorhythmology as a science and its psychohygienic value.
2. Main characteristics and classifications of the most widespread biological rhythms.
3. Development reasons and the main clinical manifestations of desynchronization as a medical and hygienic category.

You should have the following skills:

1. To determine different types of biological rhythms day curves, the type of day work capacity and calculation biological rhythms.
2. To use during the organization of educational (working) process and in one’s free time the biorhythmological principles of the rational organization of the everyday activity.

Transactions of student’s independent work

Kind of activity	Result of activity
1 _____ _____ _____ _____	
2 _____ _____ _____ _____	
3 _____ _____ _____ _____	
4 _____ _____ _____ _____	

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Theoretical questions to the final module control:

1. Biological rhythms and human health state. Concept about biological rhythms. Preconditions and reasons for origin of medical biorhythmology as a science.
2. Leading characteristics of biological rhythms (level, period, amplitude, acrostage, shape of a day curve, etc.).
3. Classifications of the most widespread biological rhythms.
4. Technique for determination of different types of daily curve of biological rhythms.
5. Technique for determination of type of daily working capacity of the person.
6. Technique for determination of calculated biological rhythms of the person.
7. Concept about desynchronosis as the basic kind of chronopathology and as medical and hygienic category. Kinds of desynchronoses.
8. Biorhythmologic principles of the rational organization of daily activity of the person. Chronohygiene as a basis for prophylaxis of desynchronoses.

Final test control – open base tests

Final grade

Teacher's signature _____

Content module 2.
“Community hygiene”

Subject 6: Hygiene of water and water supply of settlements. Sanitary protection of water objects. Sanitary protection of soil and purification of inhabited areas.

Date _____ “___”20__;

Student’s name, year, group _____

Learning objective

1. Master requirements to drinking water quality and hygienic importance of some of its indices.
2. Acquire the method of the analysis reading and drinking water quality assessment for local and centralized water supply.

Basics

You should know:

1. Hygienic indices and standards of drinking water quality (physical, organoleptic, chemical composition) and pollution indices (chemical, bacteriological – both direct and indirect), their scientific substantiation.
2. Concept and characteristics of centralized (domestic and drinking water pipeline) and decentralized (wells, groundwater intake structures, catchments) water supply systems.
3. Hygienic characteristic of conventional and special methods of water quality improvement, technology of their implementation on main facilities of water pipeline at centralized water supply systems.
4. Scope of measures during sanitary inspection of exploitation of main facilities of water pipeline (individual components of water pipeline and water supply network) as well as wells and groundwater intake structures (catchments).

You should have the following skills:

1. To state a hygienic value of drinking water quality according to results of sanitary inspection of the source of water supply and results of the laboratory analysis of water.
2. To state a hygienic value of different methods of water quality improvement and exploitation efficiency of individual structures and facilities, used for this purpose.
3. To elaborate the complex of measures to improve water quality and to prevent diseases caused by poor water quality.

Independent Control of Classroom and SIW in test tasks

<p>1. Name hygienic requirements, which are made to drinking water:</p> <ul style="list-style-type: none"> *1). Water should have perfect organoleptic and physical qualities 2). Water should have certain temperature *3). Water should not worsen biological value of food 4). Water should not contain saprophytic microorganisms *5). Water should have optimum chemical composition *6). Water should not contain the pathogenic microorganisms *7). Water should not be hard *8). Water should not contain radioactive and toxic chemical substances 9). Water should be hard 	<p>3. What infectious disease of the bacterial nature can be transmitted through water:</p> <ul style="list-style-type: none"> 1). Endemic goiter *2). Cholera 3). Viral hepatitis *4). Typhoid fever 5). Tuberculosis *6). Leptospirosis *7). Salmonellosis *8). Pseudotuberculosis *9). Dysentery
<p>2. What diseases can be transmitted through water?</p> <ul style="list-style-type: none"> *1). Diseases stipulated by chemical composition of water 2). Diseases stipulated by physical qualities of water *3). Infectious disease of the bacterial nature 4). Protein-energy deficiency 	<p>4. What viral diseases can be transmitted through water?</p> <ul style="list-style-type: none"> 1). Endemic goiter *2). Viral hepatitis 3). Leptospirosis *4). Reoviral infections

<ul style="list-style-type: none"> *5). Viral diseases 6). Pneumoconioses *7). Protozoal diseases *8). Helminthoses 9). Hypovitaminoses 	<ul style="list-style-type: none"> 5). Fluorosis *6). Poliomyelitis 7). Dysentery *8). Adenoviral infections *9). Enteroviral infections
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<p>5. What protozoa infections can be transmitted through water?</p> <ul style="list-style-type: none"> 1). Schistosomiasis *2). Balantidiasis 3). Askaridosis 4). Diphyllbothriasis *5). Amebic dysentery 6). Dysentery 7). Lyamblioz 8). Ankylostomiasis 9). Biogeochemical endemies 	<p>10. What are organoleptic indices of quality of drinking water?</p> <ul style="list-style-type: none"> *1). Transparency not less than 30 sm 2). Transparency not more than 30 sm 3). Transparency not less than 50 sm *4). Smell – not more than 2 points 5). Smell - more than 2 points *6). Taste - not more than 2 points 7). Taste – not more than 2 points *8). Color - not more than 20° 9). Color – more than 20°
<p>6. What are bacteriological indices of quality of drinking water?</p> <ul style="list-style-type: none"> *1). Coli-titre - not less than 300 ml 2). Coli-titre - not more than 300 ml 3). Coli-index - not less than 3 *4). Coli-index - not more than 3 *5). Microbial number - not more than 100 6). Microbial number - not less than 100 7). Microbial number - from 100 to 500 8). Cl. perfringens titre - not less than 0,01 9). Cl. perfringens titre - not more than 0,01 	<p>11. What are the indices of drinking water quality?</p> <ul style="list-style-type: none"> 1). Physical indices 2). Biochemical indices *3). Organoleptic indices 4). Hydrobiologic indices 5). Entomological indices *6). Bacteriological indices *7). Chemicals, which influence upon organoleptic indices *8). Toxic chemicals 9). General sanitary indices
<p>7. List chemical (reagent) methods of water disinfection:</p> <ul style="list-style-type: none"> *1). Processing of water with silver ions 2). Using ultraviolet radiation *3). Using chlorine and its preparations *4). Ozonization 5). Processing of water with ultrasound 6). Using high-tension pulsed current 7). Boiling 8). Using UHF and EHF currents 	<p>12. Choose the main methods of water disinfection:</p> <ul style="list-style-type: none"> 1). Toxicological *2). Physical 3). Biological 4). Biochemical 5). General sanitary *6). Chemical 7). Bacteriological 8). Entomological 9). Helminthologic
<p>8. Indicate the main kinds of water chlorination:</p> <ul style="list-style-type: none"> *1). Chlorination with preammonation 2). Chlorination with distillation *3). Chlorination with normal doses (according to chlorine demand) 4). Chlorination with residual doses 5). Chlorination under vacuum *6). Double chlorination *7). Superchlorination 8). Ozonization 9). Flocculation 	<p>13. List physical (reagentless) methods of water disinfection:</p> <ul style="list-style-type: none"> 1). Processing of water with silver ions *2). Using ultraviolet radiation 3). Use of chlorine and its preparations 4). Ozonization *5). Processing of water with ultrasound *6). Using high-tension pulsed current *7). Boiling *8). Using UHF and SHF currents 9). Using peroxide compounds
<p>9. What are indices of reliability for disinfection of drinking water, which carried out with method of chlorination, and their standards:</p> <ul style="list-style-type: none"> *1). Residual chlorine - 0,3-0,5 mg/l 2). Residual chlorine - 0,1 - 0,29 mg/l 3). Sulphates - not more than 500 mg/l 4). Hardness of water - not more than 7 mg-eq/l 5). Dry residue - not more than 7 mg/l *6). Bacteriological indices - the coli-titre 300, coli-index 3, microbial number – 100 7). Iron – not more than 0.3 mg/l 8). Bacteriological residue: coli-titre 100, coli-index 	

12. Elements of the waterpipe at diversion of artesian water and water of open reservoirs. Zones of sanitary protection.
13. Standard methods of water purification at the centralized system of water supply (coagulation, precipitation, filtration), their essence and constructions which are used with this purpose.
14. Methods of water disinfection, their classification, hygienic characteristic.
15. Water chlorination, its methods and reagents which are used with this purpose, disadvantages of chlorination.
16. Water disinfection with ozonation and irradiation with ultra-violet rays, their hygienic characteristic.
17. Special methods of water quality improvement, their essence and hygienic characteristic (desalination, deironing, deodorization, deactivation).
18. Methods of sanitary supervision over the centralized systems of water supply (preliminary and current). Kinds of laboratory analysis of water - bacteriological, sanitary-chemical (brief and full).
19. Sanitary supervision over local systems of water supply. Arrangement and exploitation of wells, captations. "Sanation" of wells.
20. Technique of reading of analyses and an expert estimation of drinking water.
21. Soil, definition of concept. Hygienic, epidemic and endemic importance of soil.
22. Basic physical properties of soil (mechanical structure, humidity, porosity, water penetration, filtrational ability, air permeability, capillarity, moisture capacity) and their hygienic importance.
23. Main abiotic components of soil (solid substance, soil moisture, soil air), their natural chemical composition and hygienic characteristic.
24. Soil biocenoses, their classification and hygienic characteristic.
25. Soil as the factor of transmission of infectious diseases pathogens.
26. Sources of soil pollution, their classification and hygienic characteristic.
27. Factors and mechanisms which take part in autopurification of soil.
28. Use of soil for neutralization of waste of economic-household and industrial activity of the human.
29. Hygienic characteristic of methods of collection (according to planned-flat, according to planned-yard), removal and neutralization of solid waste of a household, industrial, building origin.
30. Export system of collecting, removal and neutralization of liquid waste (fields of sewage disposal, fields of plowing).
31. Technique of sanitary inspection of the ground area taking into account its functional destination.
32. Rules, methods and means of sampling and preparation of soil samples for laboratory research.
33. Parameters of sanitary condition of soil, their classification and hygienic importance.
34. Technique of determination of physico-mechanical parameters of soil.
35. Basic scheme of determination of chemical parameters of sanitary condition of soil.
36. Technique of determination of geogelminth ova in soil.
37. Basic scheme for determination of bacteriological parameters of soil sanitary condition and pollution.
38. Approximate scale for estimation of soil pollution level and degree of its health hazard for the population.
39. Technique of hygienic estimation of soil sanitary condition by results of sanitary inspection of the site and the laboratory analysis of samples.

Final test control – open base tests
Final grade

Teacher's signature _____

Subject 7: Sanitary protection of atmospheric air. Hygiene in the planning of inhabited areas. Hygiene of living spaces and public buildings and constructions.

Date _____ “ ____ ”20 __;

Student's name, year, group _____

Learning objective

1. Strengthen the student's knowledge about chemical composition of the air, the atmospheric and the indoor air pollution sources.
2. Master the main methods of sanitary and chemical analysis of the air samples.
3. Master the methods of the air express analysis using the gas-analyzer UG-2 (YT-2).
4. Master the methods of the hygienic assessment of the indoor air purity.

Basics

You should know:

1. Physiological and hygienic significance of the air components and their influence on the human health and sanitary living conditions.
2. Atmospheric, indoor and working chemical air pollution factors and indices and their hygienic regulation.
3. Classification of the air sampling methods.
4. Principal scheme of the aspiration method of the air sampling for chemical analyses, devices and measures used for this procedure.

You should have the following skills:

1. To justify the choice of the air sampling method for sanitary and chemical research.
2. To calculate the air volume required for analysis and to convert its value to the value in the standard conditions. (0°C and 760 mm Hg).

Independent Control of Classroom and SIW in test tasks	
<p>1. What factors are used for estimation of air cleanliness in the hospital ward?</p> <ol style="list-style-type: none"> 1). Relative air humidity 2). Aeration regimen 3). Velocity of air movement *4). Air oxidability 5). Amount of inorganic substances in 1 m³ *6). Carbon dioxide content *7). Dust content 8). Indole and skatole content *9). Amount of microorganism in 1 m³ 	<p>4. Name the instruments and device, which are used for air sampling with aspiration method:</p> <ol style="list-style-type: none"> 1). Counter *2). Water aspirator *3). Pump 4). Barometer *5). Vacuum cleaner 6). Dozimeter *7). Electric aspirator 8). Aerometer 9). Butyrometer
<p>2. Name the main methods, which are used for determination of the content of toxic substances in the air:</p> <ol style="list-style-type: none"> *1). Visual colorimetry 2). Chronoreflexometry *3). Use of universal gas-analyzer 4). Tremorometry *5). Gas chromatography 6). Proof-reading test 7). Dozimetry 8). Audiometry *9). Spektrophotometry 	<p>5. List instruments and materials necessary for air sampling:</p> <ol style="list-style-type: none"> *1). Electric aspirator 2). Owens apparatus *3). Gas droppers 4). Photoelectrocalorimeter *5). Glass bottles 6). Spectrophotometer *7). Rubber bladders 8). Chemical gas-analyzer 9). Cone-shaped test tubes
<p>3. Name the main methods for determination of air contamination, which are used in sanitary practice:</p> <ol style="list-style-type: none"> 1). Bacteriological method 2). Indicator method *3). Laboratory method *4). Express method 	<p>6. List the instruments, which are used in express methods for determination of air contamination:</p> <ol style="list-style-type: none"> 1). Gas distributor *2). Universal gas analyzer UG-2 3). Eber's apparatus 4). Analyzer of the spectrum

<p>5). Complex method 6). Organoleptic method 7). Physical method 8). Accounting method 9). Mathematical method</p>	<p>*5). Gazoanalyzer GMK-3 6). Gas counter 7). Aerometer 8). Gas regulator 9). Gas analyzer LIOP</p>
<p>7. Indicate hygienic requirements to atmospheric air characteristics in the hospital ward: 1). Carbon dioxide content– up to 1% *2). Carbon dioxide content– up to 0,1% 3). Carbon dioxide content – up to 0,5% *4). Air oxidability- under 6 mg O₂/m³ 5). Air oxidability - under 6-12 mg O₂/m³ 6). Air oxidability - over 12 mg mg O₂/m³ *7). Number of bacteria - up to 3500 (summer) and 5000 (winter) microorganisms in 1 m³ of air 8). Number of bacteria - up to 5000 (summer) and 3500 (winter) microorganisms in 1 m³ of air 9). Number of bacteria - up to 5000 (summer) and 10000 (winter) microorganisms in 1 m³ of air</p>	<p>12. During toxicological studies and estimation of the certain factors of toxicometry for State Standard 12.1.007-76 "Harmful substances. Classification and general requirements to safety" such results are obtained: CL₅₀ - 650 mg/m³ (2nd class), DL₅₀ - 250 mg/kg (3rd class), CPIP (coefficient of possibility of inhalation poisoning)- 2 (4th class), zone of acute effect - 5 (1st class), ASLE - 2 mg/m³ (3rd class). What factor of toxicometry is limiting in case of determination of the class of danger of the studied substance? *1). Zone of acute effect 2). CL₅₀ 3). CPIP 4). ASLE 5). DL₅₀</p>
<p>8. The streets of a town located in a valley were overfull with cars for some days. The next day after solar windless weather has set in, town-dwellers consulted polyclinic with the following complaints: strong irritation of eye conjunctiva and upper air passages accompanied with watering and cough. What is the reason of the disease in town-dwellers? *1). Increased content of photooxidants in the air. 2). Increased content of nitrogen oxides in the air. 3). Increased content of carbon dioxide in the air. 4). Increased content of carbon monoxide in the air. 5). Increased content of ozone in the air.</p>	<p>13. When investigating an the outbreak of intrahospital infection, investigations of medical personnel for carrying Staphylococcus infection are organized in children's department. It was determined that degree of contamination makes 100, 250, 500, 750 and 1000 colony-forming units (CFU). Under what amount of CFU personnel is considered to be carrier? *1). 1000 CFU 2). 100 CFU 3). 250 CFU 4). 500 CFU 5). 750 CFU</p>
<p>9. The student has such instruments: Geiger's counter, Eber's counter, Krotov's device, Mischuk's instrument, Eber's instrument. What instrument must he use for determination of air bacteriological contamination? 1). Geiger's counter 2). Eber's counter 3). Eber's instrument 4). Mischuk's instrument *5). Krotov's device</p>	<p>14. During laboratory study of air in the hospital wards in summer it was determined that airborne contamination - 4000 cells/m³, Streptococci hemolytic- 25 CFU/m³, carbon dioxide content - 0,1%. Estimate the degree of air cleanliness. *1). Satisfactory clean 2). Very clean 3). Clean 4). Polluted 5). Badly polluted</p>
<p>10. During planned intra-hospital check for observance of sanitary-hygenic regimen in wards of the therapeutic department, air is sampled for laboratory analysis for chemical and bacteriological factor. The following data are received: carbon oxide - 0,2%, oxidability - 15 mg O₂/m³; general number of microorganism in 1 m³ - 1500; Staphylococcus aureus - 3. What is the degree of the cleanliness of air of the wards? *1). Polluted 2). Clean 3). Satisfactory clean 4). Moderately polluted 5). Badly polluted</p>	<p>15. Air sanation in manipulation room of the polyclinic was carried out by means of artificial sources of ultraviolet radiation. The factor of sanation efficiency was used for estimation of sanation efficiency. What is minimum value of the mentioned factor, which is indicative of efficient sanation of the air? *1). Not less than 5 2). 10 3). 15 4). 20 5). 25</p>
<p>11. The general bacterial air contamination was determined in the dressing room of the surgical department before beginning of work. What should be the index of general microbial number in this case?</p>	<p>16. Lamps BUV -30 were used for air sanation in surgical department of the children's hospital during epidemic of influenza. Afer exposition, the inoculation was carried out with help of Krotov's apparatus.Which value is evidence of sanation efficiency?</p>

10. Concept about express methods (colorimetric, linearly-colorimetric), determination of chemical admixtures in air. Universal gas analyzer UG-2, design and principle of operation. Krotov's device, principle of its operation and ways of application.
11. Living conditions in settlements and human health. Features of formation of the city environment and hygienic aspects of life in a modern city. Urbanization as a socially-hygienic problem.
12. Planning and building of territory of settlement. Principles of functional zoning of territory of settlements, accommodation of inhabited, industrial, building-warehouse and recreational zones in them.
13. Hygienic importance of green plantations.
14. Hygienic importance of microclimate and air environment in inhabited and public buildings.
15. Characteristic of sources of pollution of atmosphere in settlement. Regularities of distribution of pollution in the atmosphere, factors on which the level of air pollution depends. Transformation
16. Influence of polluted air on health and conditions of residing of the population.
17. Direct measure on the organism: acute poisonings, chronic, specific and nonspecific diseases.
18. Ways and means of prophylaxis of negative influence of polluted atmospheric air on health.
19. The state sanitary supervision over construction of inhabited and public buildings, their sanitary-engineering equipment.

Final test control – open base tests

Final grade

Teacher's signature _____

Subject 8: Hygienic importance of physical factors in conditions of inhabited areas.

Date _____ “ ____ ” 20 __ ;

Student's name, year, group _____

Learning objective

1. Strengthen and enlarge theoretical knowledge of students about noise and vibration as elements of industrial environment and their influence on organism and health.
2. Master techniques and means of measurement and hygienic assessment of noise and vibration parameters.

Basics

You should know:

1. Fundamentals of anatomy and physiology of auditory analyzer.
2. Physical fundamentals of acoustics and vibration.
3. Classification and fundamentals of noise and vibration source.
4. Biological effect of noise and vibration, and prevention of their negative influence on human organism.

You should have the following skills:

1. To use noise dosimeter and noise and vibration spectrum analyzer.
2. To detect threshold of audibility using of audiometer.

Independent Control of Classroom and SIW in test tasks

<p>1. Give a definition of concept "noise":</p> <ol style="list-style-type: none"> 1). Optical oscillations of particles of expansible medium under the influence of stimulating power *2). Collection of sounds, which disturb the perception of the useful sound signals, which break the silence, render an unfavorable effect on the organism 3). Mechanical periodic oscillations of the particles of expansible medium under the influence of stimulating power 4). Mechanical oscillatory movements of the systems with expansible bonds 5). Optical oscillatory movements of the systems with expansible bonds 6). Periodic oscillatory movements of the system with expansible medium 7). Acoustic oscillations of the medium with frequency over 20000 Hz 8). Acoustic oscillations of the medium with frequency less than 20 Hz 9). Forced radiation under the influence of stimulating power 	<p>3. Give a definition of concept "infrasound":</p> <ol style="list-style-type: none"> 1). Optical oscillations of the particles of elastic medium under the action of stimulating power 2). Mechanical aperiodic oscillations of the particles of elastic medium under the action of stimulating power 3). Mechanical periodic oscillations of the particles of elastic medium under the action of stimulating power 4). Mechanical oscillatory movements of the system with elastic connections 5). Optical oscillatory movements of the system with elastic connections 6). Periodic oscillatory movements of the system with elastic connections 7). Acoustic oscillations of the medium with frequency more than 20000 Hz *8). Acoustic oscillations of the medium with frequency less than 20 Hz 9). Forced radiation under the action of stimulating power
<p>2. What is maximum permissible level of noise at industrial enterprise depending on its frequency:</p> <ol style="list-style-type: none"> *1). Low-frequency up to 300 Hz (90-100 dB) 2). Low-frequency up to 300 Hz (100-120 dB) 3). Low-frequency up to 300 Hz (80-85 dB) *4). Medium frequency from 300 to 800 Hz (75-80 dB) 5). Medium frequency from 300 to 800 Hz (60-65 dB) 6). Medium frequency from 300 to 800 Hz (100-110 dB) 7). High-frequency more than 800 Hz (75-80 dB) *8). High -frequency more than 800 Hz (70-75 dB) 9). High -frequency more than 800 Hz (60-70 dB) 	<p>4. What disorders in functional condition of the auditory analyzer can be determined by means of audiometry:</p> <ol style="list-style-type: none"> 1). Nature of the inflammatory process 2). Degree of decrease of hearing 3). Localization of the lesion in auditory analyzer *4). Violation of auditory sensitivity 5). Nature of the frequency perception of the acoustic oscillations 6). Threshold of the perception of the acoustic oscillations 7). Violation of vestibular apparatus 8). Degree of expressiveness of vegetative disorders of

	<p>the organism</p> <p>9). Level of the perception of ultra- and infrasound oscillations</p>
<p>5. Give a definition of concept "ultrasound":</p> <p>1). Optical oscillations of the particles of elastic medium under the action of stimulating power</p> <p>2). Mechanical aperiodic oscillations of the particles of elastic medium under the action of stimulating power</p> <p>3). Mechanical periodic oscillations of the particles of elastic medium under the action of stimulating power</p> <p>4). Mechanical oscillatory movements of the system with elastic connections</p> <p>5). Optical oscillatory movements of the system with elastic connections</p> <p>6). Periodic oscillatory movements of the system with elastic connections</p> <p>*7). Acoustic oscillations of the medium with frequency more than 20000 Hz</p> <p>8). Acoustic oscillations of the medium with frequency less than 20 Hz</p> <p>9). Forced radiation under the action of stimulating power</p>	<p>10. Give a definition of concept "vibration":</p> <p>1). Optical oscillations of particles of expansible medium under the influence of stimulating power</p> <p>2). Mechanical aperiodic oscillations of particles of expansible medium under the action of stimulating power</p> <p>3). Mechanical periodic oscillations small part of expansible medium under the action of stimulating power</p> <p>*4). Mechanical oscillatory movements of the system with elastic connections</p> <p>5). Optical oscillatory moving the system with elastic connections</p> <p>6). Periodic oscillatory moving the system with elastic connections</p> <p>7). Acoustic oscillations of the medium with frequency over 20000 Hz</p> <p>8). Acoustic oscillations of the medium with frequency less than 20 Hz</p> <p>9). Forced radiation under the influence of stimulating power</p>
<p>6. Indicate the parameters, which are used for hygienic regulation of noise:</p> <p>*1). Origin</p> <p>2). Purpose</p> <p>3). Direction of spreading</p> <p>*4). Spectral distribution</p> <p>*5). Frequency features</p> <p>*6). Loudness and intensity</p> <p>7). Vibrovelocity and vibroacceleration</p> <p>8). Timbre</p> <p>*9). Time characteristics</p>	<p>11. List types of noise by character of the spectral distribution:</p> <p>1). Community noise</p> <p>*2). Broadband noise</p> <p>*3). Tone noise</p> <p>4). Production noise</p> <p>5). Constant noise</p> <p>6). Non-constant noise that varies in time</p> <p>7). Non-constant interrupted noise</p> <p>8). Non-constant equivalent noise</p> <p>9). Non-constant impulse noise</p>
<p>7. List types of noise by temporary characteristics:</p> <p>1). Community noise</p> <p>2). Broadband noise</p> <p>3). Tone noise</p> <p>4). Production noise</p> <p>*5). Constant noise</p> <p>*6). Non-constant noise that varies at time</p> <p>*7). Non-constant interrupted noise</p> <p>8). Non-constant equivalent noise</p> <p>*9). Non-constant impulse noise</p>	<p>12. Name the main physiological-hygienic features of noise:</p> <p>*1). Intensity</p> <p>2). Wavelength</p> <p>3). Period of the oscillations</p> <p>4). Vibrovelocity</p> <p>*5). Spectral distribution by frequency</p> <p>6). Vibroacceleration</p> <p>*7). Loudness</p> <p>8). Timbre</p> <p>9). Sound pressure</p>
<p>8. Name the instruments for noise measurement:</p> <p>*1). Noise-vibration complex</p> <p>2). Psychrometer</p> <p>*3). Phonometer</p> <p>4). Radiometer</p> <p>5). Dozimeter</p> <p>6). Chromatograph</p> <p>7). Chronoreflexometer</p> <p>8). Microwave spectrometer</p> <p>*9). Analyzer of noise spectrum</p>	<p>13. Name the features of noise, under which hypoacusia appears first of all:</p> <p>1). Short-term noise</p> <p>*2). Long-lasting noise</p> <p>*3). High-frequency noise</p> <p>4). Low-frequency noise</p> <p>5). Stable noise</p> <p>*6). Impulse noise</p> <p>7). Under-threshold noise</p> <p>8). Over-threshold noise</p> <p>9). Intermittent noise</p>
<p>9. Name the system unit of sound pressure level:</p> <p>1). Roentgen</p> <p>2). Hertz</p>	<p>14. List types of noise by origin:</p> <p>1). Production static noise</p> <p>*2). Production aerodynamic noise</p>

Subject 9: Features of hygienic requirements to planning and maintenance of medical-preventive establishments.

Date _____ “ ____ ”20 __;

Student’s name, year, group _____

Learning objective

1.To strengthen the students’ knowledge of the hygienic requirements concerning the patient care institutions’ location and planning on the basis of assessment and analysis of the study project materials and the normative documents; to teach the students to draw the hygienic conclusions, substantiated resolutions and give the recommendations.

Basics

You should know:

1. Basic hygienic requirements concerning the planning and regime of exploitation of the patient care institutions, the therapeutic, surgical, infectious diseases and other specialized departments.

You should have the following skills:

1. Using the construction drawings of the situational and general layout 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. Using the constructions’ plans and slits 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.

Independent Control of Classroom and SIW in test tasks	
<p>1. Indicate the possible variants of hygienic conclusion when carrying out the sanitary expert examination of projects for construction of medical-preventive establishments:</p> <ol style="list-style-type: none"> 1). Approved *2). Coordinated 3). Discussed *4). Coordinated at condition 5). Approved at condition 6). Recommended to realization *7). Refused in co-ordination 8). Analysed 9). Studied 	<p>4. What should we know when choosing area for construction of the medical-preventive establishment:</p> <ol style="list-style-type: none"> *1). What object was situated on this territory earlier 2). Features of climate-weather situation 3). Features of sanitary purification of the settlement 4). Correlation of industrial and residential zones of the settlement *5). Level of disposition of ground waters *6). Properties of the soil 7). Degree of the contamination of the atmospheric air *8). Epydemiological state of the soil 9). Features of microclimatic conditions
<p>2. Name the main documents concerning the projects for construction of medical-preventive establishments:</p> <ol style="list-style-type: none"> 1). Sanitary norms and rules *2). Passport part *3). Explanatory note 4). Plan of the settlement *5). Situational plan *6). General plan *7). Plans of the floors, facades and profile of the building 8). Generalised plan *9). Plan of sanitary-technical and technological equipment 	<p>5. Name the main zones of the ground area of the hospital:</p> <ol style="list-style-type: none"> 1). Didactic-exploratory zone *2). Zone of medical buildings *3). Garden-park zone *4). Zone of the specific departments 5). Residential zone *6). Zone of polyclinic *7). Zone of pathologoanatomic department with morgue *8). Economic zone 9). Sports zone
<p>3. List the main systems of hospital construction:</p> <ol style="list-style-type: none"> 1). Open *2). Decentralised 3). Closed 4). Band 	<p>6. On what value should the area of the site of specialized medical-preventive establishments be increased (in %), compared to general norms:</p> <ol style="list-style-type: none"> *1). Infectious hospitals - 15% 2). Infectious hospitals - 10%

<p>*5). Centralised 6). Intermediate *7). Mixed 8). Radial *9). Centralised-block</p>	<p>*3). Oncologic dispensaries - 15% 4). Oncologic dispensaries - 10% 5). TB dispensaries - 10% *6). TB dispensaries - 20% 7). TB dispensaries - 15% 8). Rehabilitation centres - 15% *9). Rehabilitation centres - 20%</p>
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<p>7. The hospital is built according to mixed system of construction. There are such zones on the hospital site: main building, polyclinic, obstetrics-gynecological building, infectious building, food block, economic building, pathologoanatomic building, hospital garden with band of the green plantings. What is the norm for constructed area of the hospital site? *1). 15% 2). 20% 3). 35% 4). 10% 5). 25%</p>	<p>11. According to the project of hospital construction, medical buildings are divided into three groups: medical, medical-diagnostic and economic, which are connected with passages. Which system of hospital construction is used in this case? 1). Perimeter 2). Mixed 3). Centralised 4). Decentralised *5). Centralised-block</p>
<p>8. In settlement N. some ground sites are offered for construction of the district hospital for 100 beds. What is the minimum area of the hospital site? *1). 2 hectares 2). 1 hectare 3). 3 hectares 4). 4 hectares 5). 5 hectares</p>	<p>12. During sanitary examination of burns department for adults it was revealed that the area of wards for 4 beds is 28 m². What minimum area of the ward should be in this department? *1). 40 m² 2). 24 m² 3). 28 m² 4). 30 m² 5). 52 m²</p>
<p>9. When carrying out the sanitary expert examination of the project of infectious hospital, it was established that the main architectural-planning premises are cubicles and semicubicles. What is the difference between cubicle and semicubicle? *1). Entrance from the street 2). Ward 3). Toilet 4). Lock 5). Entrance from the department</p>	<p>13. The construction of a new polyclinic is planned in a district with close location of the machine-building plant (the 2nd class of danger). Determine the necessary width of sanitary-protective zone between the plant and polyclinic: 1). 1000 m 2). 300 m 3). 100 m 4). 50 m *5). 500 m</p>
<p>10. There are such zones on the site of rural district hospital for 50 beds: medical building for non-infectious patients, medical building for infectious patients with different garden-park zones, as well as economic zone, in which there is patologo-anatomic department. What violation is there when planning the area? 1). Isolation of garden-park zones *2). Combination of economic and pathologoanatomic zones 3). Location of the infectious department on the area of the hospital 4). Different zones for infectious and non-infectious patients 5). Location of the building for infectious patients and pathologoanatomic department on the site of the hospital</p>	<p>14. The town hospital consists of the main building, in which there are surgical and therapeutic departments, and several separate buildings, intended for infectious, obstetric and children's departments. Which system of hospital construction is used? 1). Centralised-block 2). Centralised 3). Decentralised *4). Mixed 5). Barracks</p>

Transactions of student independent work

Kind of activity	Result of activity
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Subject 10: Modern problems of the nosocomial infection and a complex of hygienic measures for their prophylaxis.

Date _____ "____"20 __;

Student's name, year, group _____

Learning objective

1. Interpret the definition "nosocomial infection".
2. Determine risk groups and factors concerning origin of nosocomial infection in patients.
3. Analyze and estimate the factors of transmission of nosocomial infection.
4. Recognize epidemiologic features of nosocomial infection course.
5. Determine necessary organizational, preventive and epidemic measures of prophylaxis and struggle with nosocomial infection

Basics

You should know:

1. Definition "nosocomial infection" and problems, connected with it, main causes of their origin.
2. Structure, main pathogens, sources and factors of transmission.
3. Measures on nosocomial infection localization in hospitals of different types.

You should have the following skills:

1. Recognize epidemiologic features of course of different nosocomial infections.
2. Determine risk groups and factors concerning origin of nosocomial infections in patients and medical workers.

Independent Control of Classroom and SIW in test tasks	
<p>1. Indicate hygienic requirements to illumination of the hospital wards:</p> <ol style="list-style-type: none"> 1). Light coefficient 1:4 – 1:6 *2). Light coefficient 1:6 – 1:8 3). Light coefficient 1:10 – 1:12 *4). Illumination 50 lx (incandescent lamps) 5). Illumination 100 lx (incandescent lamps) 6). Illumination 150 lx (incandescent lamps) 7). Illumination 50 lx (luminescent lamps) *8). Illumination 100 lx (luminescent lamps) 9). Illumination 150 lx (luminescent lamps) 	<p>5. What per cent of the ward unit should be for 4, 2 and 1 bed?</p> <ol style="list-style-type: none"> 1). 50%, 30%, 20% *2). 60%, 20%, 20% 3). 40%, 40%, 20% 4). 30%, 60%, 10% 5). 70%, 20%, 10% 6). 90%, 5%, 5% 7). 70%, 30%, 20% 8). 80%, 10%, 10% 9). 95%, 3%, 2%
<p>2. What are the main premises of the ward unit?</p> <ol style="list-style-type: none"> 1). Rehabilitation rooms *2). Wards 3). A bedroom-verandah *4). A room for patients' day stay 5). A post of the doctor on duty *6). Medical-auxiliary premises *7). Household premises *8). Sanitary block *9). A post of the nurse on duty 	<p>6. In the ward unit for 40 beds the number of 4-bedded wards is 60 %, 2-bedded – 20 %, 1-bedded – 20 %. The width of the corridor – 2.5 m. Which of the mentioned indices does not meet hygienic requirements?</p> <ol style="list-style-type: none"> *1). General number of beds 2). Width of the corridor 3). Number of 2-bedded wards 4). Number of 1-bedded wards 5). Number of 4-bedded wards
<p>3. What necessary area of a cubicle should be in the infectious department?</p> <ol style="list-style-type: none"> *1). 22 m² 2). 20 m² 3). 24 m² 4). 18 m² 5). 26 m² 	<p>7. General area of the ward in the therapeutic department is 28 m². For what maximum number of beds is it intended?</p> <ol style="list-style-type: none"> 1). 5 2). 1 3). 2 4). 3 *5). 4
<p>4. During laboratory research of air quality in the ward it has been established in summer, that</p>	<p>8. What are hygienic requirements to the hospital wards (general therapeutic type)?</p>

<p>bacterial contamination - 4000 cells/m³, hemolytic streptococcus - 25 cells/m³, CO₂ content – 0.1 %. Estimate the degree of air cleanliness.</p> <p>*1). Satisfactory clean 2). Very clean 3). Clean 4). Polluted 5). Very polluted</p>	<p>*1). Area of the ward for 1 bed – 9–12 m² 2). Area of the ward for 1 bed – 10–15 m² 3). Area of the ward for 1 bed – 15–20 m² 4). Area of the ward for 2 beds – 10 m² (per 1 bed) *5). Area of the ward for 2 beds – 15 m² (per 1 bed) 6). Area of the ward for 2 beds – 20 m² (per 1 bed) *7). Area of the ward for 4 beds – 7 m² (per 1 bed) 8). Area of the ward for 4 beds – 10 m² (per 1 bed)</p>
<p>9. During investigation of the outbreak of nosocomial infection in children's department, the researches of medical staff for staphylococcus carriage are carried out. It is established that the degree of contamination makes 100, 250, 500, 750 and 1000 CFU (colony-forming units). At what amount of CFU the personnel is considered the carrier?</p> <p>*1). 1000 CFU 2). 100 CFU 3). 250 CFU 4). 500 CFU 5). 750 CFU</p>	<p>14. List the main rooms of medical-auxiliary premises of the ward unit:</p> <p>1). Buffet *2). Doctor's room 3). Canteen 4). Procedure room *5). Manipulation room 6). Room of hospital matron *7). Room of the head of the department *8). Room of the senior nurse *9). Room for medical staff</p>
<p>10. Indicate, what microclimatic conditions should be in the ward for patients with heavy burns?</p> <p>1). Air temperature - 20°C, relative air humidity - 40 %, velocity of air movement - 0,1 m/s 2). Air temperature - 18°C, relative air humidity - 50 %, velocity of air movement - 1 m/s 3). Air temperature - 15°C, relative air humidity - 60 %, velocity of air movement - 1 m/s *4). Air temperature 22-25°C, relative air humidity - 55 %, velocity of air movement - 0,05-0,1 m/s 5). Air temperature - 28°C, relative air humidity - 65 %, velocity of air movement - 0,5 m/s</p>	<p>15. During hygienic estimation of microclimate of medical premises it is established, that air temperature in wards for adults makes 20 °C, in wards for children 22 °C, in wards for preterm newborns 25 °C, in cubicles and semicubicles 22 °C, in doctors' rooms 17 °C. Which of parameters does not meet hygienic requirements?</p> <p>1). Air temperature in wards for preterm newborns 2). Air temperature in wards for adults 3). Air temperature in wards for children *4). Air temperature in doctors' rooms 5). Air temperature in cubicles and semicubicles</p>
<p>11. Air of wards of surgical department in which there are patients with purulent wounds, is polluted by purulent microflora in amounts which exceed admissible levels. For prevention of air pollution in the operating room, there should be such kind of ventilation in it:</p> <p>*1). Input-extract ventilation with prevalence of inflow 2). Only exhaust ventilation 3). Only input ventilation 4). Input-extract ventilation, with equal volumes of inflow and exhaust 5). Input-extract ventilation with prevalence of exhaust</p>	<p>16. On the instructions of the doctor, the nurse carried out measurements which are necessary for estimation of microclimatic conditions of the ward in the therapeutic department. Results of measurements: the average air temperature makes 20°C, speed of air movement - 0,02 m/s, relative air humidity - 58 %. Give hygienic estimation of microclimate of the ward.</p> <p>*1). Microclimate is comfortable 2). Microclimate is uncomfortable of cooling type 3). Microclimate uncomfortable of heating type 4). Microclimate uncomfortable with increased air humidity 5). Microclimate uncomfortable with increased speed of air movement</p>
<p>12. During studying microclimatic conditions of hospital ward it is established: the area – 7 m², average air temperature - 16°C, relative humidity - 72 %, speed of air movement – 0.35 m/s, light factor - 1:5. Give hygienic estimation of microclimate of the hospital ward.</p> <p>*1). Uncomfortable, cooling type * 2). Comfortable 3). Uncomfortable, with increased air humidity 4). Uncomfortable, heating type 5). Uncomfortable, with significant oscillations of key parameters.</p>	<p>17. In departments of infectious hospital the tool control over performance of ventilating system and observance of optimum parameters of microclimate is planned. There are such devices: Krotov's apparatus, winged anemometer, thermograph, catathermometer, Assman psychrometer. Which of the mentioned devices is intended for measurement of speed of air movement in hospital premises?</p> <p>1). Thermograph. 2). Winged anemometer 3). Assman's psychrometer 4). Krotov's apparatus *5). Catathermometer</p>
<p>13. During laboratory research of air of the hospital ward it is revealed: total of microorganisms in air - 2500 in 1 m³, of them 125 - hemolytic streptococcus.</p>	

<p>What actions should be carried out with the purpose of disinfecting of air in the ward?</p> <p>*1). UVI with bactericidal lamps</p> <p>2). Dispersion of 0,5 % chloramin solution into the air</p> <p>3). Air electroaeroionization</p> <p>4). Infra-red irradiation of air</p> <p>5). Air-conditioning</p>	
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Transactions of student independent work

Kind of activity	Result of activity
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Theoretical questions to the final module control:

1. Nosocomial infections, modern approaches of concept definition.
2. Theories and concepts of nosocomial infections.
3. Ways of transmission of nosocomial infections.
4. Factors of transmission of nosocomial infections.
5. The role of opportunistic pathogenic microflora in occurrence of nosocomial infections.
6. Sanitary-hygienic and epidemiological supervision over spreading of nosocomial infections.
7. Main principles of prophylaxis of nosocomial infections.
8. Bases of investigation of the outbreaks of nosocomial infections in establishments of public health services.
10. Sanitary-hygienic measures on prophylaxis of nosocomial infections in specialized hospitals and departments.
11. Isolation-restrictive measures in prophylaxis of nosocomial infections.
12. Sanitary-hygienic regimen of hospitals.

13. Sanitary-hygienic measures on prophylaxis of nosocomial infections in the personnel of medical-preventive establishments.

14. The rights and duties of the personnel of medical-preventive establishments concerning prophylaxis of nosocomial infections.

Final test control – open base tests

Final grade

Teacher's signature _____

Subject 11: Hygienic assessment of conditions of patients' stay at medical-preventive establishments (SIW).

Date _____ "____"20 __;

Student's name, year, group _____

Learning objective

1. Master the knowledge on the hygienic conditions and harmful factors influencing the efficacy of patients' treatment.

2. Become familiar with the legislative and organizational measures of the provision of the optimal regime, hygienic conditions for patients of the in-patient departments.

3. Master the general scheme and methods of subjective (sanitary inspection) and objective sanitary control of the conditions of patients' stay at the hospital.

Basics

You should know :

1. Basic hygienic requirements concerning the planning, equipment, regime, exploitation of the treatment, diagnostic, accessory and consumer subdivision of the in-patient departments.

2. Hygienic standards of microclimate, air, ventilation, natural and artificial lighting of different subdivisions of the medical institution, their importance in the patients' treatment efficacy.

3. Harmful and dangerous factors of different subdivisions of the medical institution (diagnostic, physiotherapeutic, balneal etc.), their influence on the patients' health.

You should have the following skills :

1. To carry out the sanitary inspection and determine the objective figures of the hygienic condition of the medical institution different subdivisions.

2. To determine and assess harmful and dangerous factors of different subdivisions of the medical institution and their influence on the patients' health.

Independent Control of Classroom and SIW in test tasks

<p>1. The minimum level of illumination in operating room (flourescent lamps) is:</p> <p>1). 50 lx 2). 75 lx 3). 100 lx 4). 200 lx 5). 300 lx *6). 400 lx 7). 500 lx 8). 600 lx 9). 1000 lx</p>	<p>4. Indicate the optimum orientation for the windows of the hospital ward.</p> <p>1). North *2). East *3). South *4). South-east 5). West 6). East-west 7). North-west 8). North-east 9). Orientation does not matter.</p>
<p>2. Coefficient of sanitation efficiency is used for estimation of sanitation efficiency. Indicate minimum value of the coefficient of sanitation efficiency.</p> <p>1). Not less than 2 *2). Not less than 5 3). 10 4). 15 5). 20 6). 25 7). 30 8). 35 9). 50</p>	<p>5. Indicate hygienic requirements to the properties of the atmospheric air in the hospital ward:</p> <p>*1). Carbon dioxide content – up to 0,1% 2). Atmospheric pressure - 755 mm Hg. *3). Air oxidability – up to 6 mg O₂ /m³ 4). Illumination - 50 lx *5). Bacterial contamination – up to 3500 in 1 m³ in summer 6). Bacterial contamination up to 8000 in 1 m³ in winter. 7). Illumination - 100 lx 8). Illumination - 200 lx 9). Air oxidability– up to 1 mg oxygen /m³</p>

<p>3. The area of the cubicle of the infectious department is 22 m². For what maximum number of beds it can be intended?</p> <ol style="list-style-type: none"> 1). 4 2). 2 3). 3 *4). 1 5). 5 	<p>6. For air sanitation in the surgical department of the children's hospital during epidemic of influenza, the use of lamps BUV -30 is planned. Indicate the value, which is evidence of sanitation efficiency.</p> <ol style="list-style-type: none"> *1). 85% 2). 75% 3). 70% 4). 65% 5). 55%
<p>7. Indicate the optimum value for relative air humidity in the therapeutic ward of medical-preventive establishment.</p> <ol style="list-style-type: none"> 1). 10 - 30 % *2). 40 - 60 % 3). 20 - 50 % 4). 20 - 30 % 5). 20 - 80 % 6). 30 - 70 % 7). 30 - 40 % 	<p>12. During laboratory study of the air of the hospital ward it is found: the general number of microorganisms in air - 2500 per 1 m³, of them 125 – streptococcus hemolytic. What actions must be conducted to disinfect air in the ward?</p> <ol style="list-style-type: none"> *1). UV-irradiation with bactericidal lamps 2). Spraying 0,5% chloramine solution into the air 3). Elektroaeroionization of the air 4). Infrared irradiation of the air 5). Air conditioning
<p>8. Noise level on the territory of the hospital at night time should not exceed, dB</p> <ol style="list-style-type: none"> 1). 10 2). 20 *3). 30 4). 40 5). 50 6). 100 7). 110 8). 120 9). 200 	<p>13. List the leading research methods for origin of filaments of the fabric:</p> <ol style="list-style-type: none"> *1). Boiling with alkali 2). Boiling with acids *3). Xantoprotein reaction 4). Test with rosol acid 5). Test with bromthymol blue 6). Test with Nesler's reagent *7). Processing the fabrics with acetone 8). Test with Lugol's iodine solution 9). Processing of the fabric with methyl methacrylate
<p>9. The area of the ward in the therapeutic department is 28 m². For which maximum number of beds is it intended?</p> <ol style="list-style-type: none"> 1). 5 2). 1 *3). 4 4). 5 5). 6 6). 7 7). 9 8). 10 9). 14 	<p>14. When investigating the outbreak of the nosocomial infection in the children's department, studies of the medical stuff for carriage of staphylococcus infection are organized. It is established that degree of contamination is 100, 250, 500, 750 and 1000 CFU (colony-forming units). Under what amount of CFU personnel is considered to be carrier?</p> <ol style="list-style-type: none"> *1) 1000 CFU 2). 100 CFU 3). 250 CFU 4). 500 CFU 5). 750 CFU
<p>10. Indicate the leading indices of the sanitary condition of hospital and home cloth:</p> <ol style="list-style-type: none"> 1). Length of the fabric *2). Density of the fabric *3). Thickness of the fabric *4). Porosity of the fabric 5). Transparency of the fabric *6). Kapillyarnosti of the fabric 7). Colour of the fabric *8). Heat conductivity of the fabric *9). Origin of the filaments of the fabric 	<p>15. Indicate, which microclimatic conditions should be in a ward for patients with heavy burns?</p> <ol style="list-style-type: none"> 1). Air temperature – 20°C, relative air humidity - 40%, velocity of air movement – 0.1 m/s 2). Air temperature – 18°C, relative air humidity - 50%, velocity of air movement - 1 m/s 3). Air temperature – 15°C relative air humidity - 60%, velocity of air movement - 1 m/s *4). Air temperature 22-25°C, relative air humidity - 55%, velocity of air movement – 0.05-0.1 m/s 5). Air temperature – 28°C, relative air humidity - 65 %, velocity of air movement - 0,5 m/s
<p>11. After the increase of pyo-septic complications after operative treatment, urgent examination of medical staff of the surgical department for staphylococcus carriage is realized. It was revealed that doctor N. has staphylococcus aureus. What action on prophylaxis of pyo-septic complications should be used first of all?</p> <ol style="list-style-type: none"> *1). The doctor should be temporarily dismissed from 	<p>16. The air in the wards of the surgical department, in which there are patients with festering wounds, is polluted with purulent microflora in amounts, which exceed the possible level. To prevent air contamination in operating room, it should have the ventilation:</p> <ol style="list-style-type: none"> *1). Input-extract ventilation with prevalence of the inflow 2). Only input ventilation. 3). Only extract ventilation.

<p>participation in operations</p> <p>2). To charge the doctor to carry the safety mask in the ward department.</p> <p>3). The doctor should use 1% hexachlorophene ointment for nose mucosa.</p> <p>4). The doctor should rinse his throat with 1% alcohol solution of Chlorophylypt three times a day.</p> <p>5). The doctor should be examined by ENT-doctor and dentist.</p>	<p>4). Input-extract ventilation, with equal volumes of the inflow and exhaust.</p> <p>5). Input-extract ventilation with prevalence of the exhaust.</p>
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<p>17. During laboratory study of the quality of air in the hospital ward in summer it was established that bacterial contamination - 4000 cell/m³, streptococcus hemolyticus - 25 CFU /m³, carbon dioxide content - 0,1%. Estimate the degree of air cleanliness.</p> <p>*1). Satisfactorily clean</p> <p>2). Very clean</p> <p>3). Clean</p> <p>4). Polluted</p> <p>5). Badly polluted</p>	<p>19. In one of the surgical departments checking quality to sterilisations surgical toolbox is organized. At action of 1% phenolphthalein solution on the instrument, solution gave rose color. This witnesses that on instrument there is:</p> <p>1). Reminders of blood</p> <p>2). Reminders of medical material</p> <p>3). Reminders of fabric</p> <p>*4). Reminders of detergents</p> <p>5). Reminders of disinfectants</p>
<p>18. During the study of microclimatic conditions of the hospital ward it is established: area - 6 m³, average air temperature – 16°C, relative humidity - 72%, velocity of air movement - 0,35 m/s, coefficient of natural illumination - 0,88%, light factor - 1:5. Give hygienic estimation of microclimate in the hospital ward.</p> <p>*1). Discomfortable, of cooling type</p> <p>2). Comfortable</p> <p>3). Discomfortable, with increased air humidity</p> <p>4). Discomfortable, heating type</p> <p>5). Discomfortable, with significant fluctuations of main parameters.</p>	

Transactions of student independent work

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**Content module 3.
“Hygiene of nutrition”**

Subject 12: Nutrition in preventive medicine. Organization of nutrition at medical-preventive establishments and industrial enterprises.

Date _____ “___”20 __;

Student’s name, year, group _____

Learning objective

Master methods of determination of individual or organized collective actual nutrition and its adequacy to the energy expenditure and nutrient needs.

Basics

You should know:

1. Social-economic and sanitary-hygienic basics of individual and collective nutrition.
2. Calculative, laboratory and other methods of determination of the individual or organized collective nutrition sufficiency.

You should have the following skills:

1. To determine and assess the social-economic and hygienic nutrition indices – balance, budget, questionnaire results, weight and others.
2. To perform the laboratory research of the daily intake and analyze received results and their adequacy to the energy expenditure and nutrient requirements.
3. To study and assess the nutrition of individuals and organized collectives using calculation methods, menu schedule.

Independent Control of Classroom and SIW in test tasks

<p>1. List the basic functions of food:</p> <ol style="list-style-type: none"> 1). General stimulating *2). Plastic *3). Energy 4). Flavouring *5). Adaptation-and immunoregulative *6). Bioregulative and rehabilitation *7). Signal-motivational 8). Biotic and abiotic 9). Preventive 	<p>4. Name main principles of rational nutrition:</p> <ol style="list-style-type: none"> *1). Correct culinary processing 2). High caloric content 3). Vitamin content 4). Cheapness *5). Balance *6). Adequacy 7). Taking into account national-ethnic features *8). Safety from sanitary-and-epidemiologic point of view *9). Optimum regimen of nutrition
<p>2. The basic kinds of nutrition:</p> <ol style="list-style-type: none"> 1). Adequate *2). Rational 3). Alternative 4). Eating raw foods *5). Preventive 6). Medical starvation *7). Medical-dietary 8). Vegetarianism *9). Medical-prophylactic 	<p>5. What are the main criteria of substantiation of the rational regimen of nutrition?</p> <ol style="list-style-type: none"> 1). Time of meal *2). Number of meals 3). Weight and intensity of work *4). Distribution of the diet on meals 5). Duration of meal 6). Individual tastes *7). Intervals between meals 8). National and ethnic features *9). Sequence of dishes
<p>3. Name leading features of biological action of food:</p> <ol style="list-style-type: none"> 1). Vitamin-forming 	<p>6. What factors should be taken into account during development of rational regimen of nutrition?</p>

<ul style="list-style-type: none"> *2). Specific 3). Immunomodulating *4). Nonspecific 5). Sensitizing *6). Protective *7). Pharmacological 8). Biotic 9). Precautionary 	<ul style="list-style-type: none"> 1). Data of the functional condition of the organism 2). Basal metabolism *3). Character of labour activity 4). Data of nutritional energetometry *5). Day regimen *6). Age 7). Climate-weather conditions *8). Local habits *9). Specific features of the organism
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<p>7. Give definition of concept "menu-allocation":</p> <ul style="list-style-type: none"> 1). The list of dishes for daily meals 2). The list of products which are necessary for preparation of dishes 3). Set of necessary food substances in products *4). The list of dishes with weight amount of foods which are necessary for preparation of one portion 5). Distribution of food during a day 6). Set of the basic products which are necessary for cooking 7). Distribution of proteins, fats and carbohydrates in a diet for day 8). Distribution of vitamins and microelements in a diet for a day 9). Names of the main dishes 	<p>9. Name materials which are necessary for determination of caloric content of a daily diet by a calculation method:</p> <ul style="list-style-type: none"> *1). Menu-allocation *2). Calculation tables of chemical composition and nutritional value of foodstuff 3). Data about the occupation, age, sex, growth and body weight 4). Data about health state 5). Data about climatic conditions 6). Garris and Benedict's tables 7). Chronometry sheet 8). Tables of power expenses of different kinds of activity of the person 9). Data about personal-typological features of the organism
<p>8. Give a definition of term "rational nutrition":</p> <ul style="list-style-type: none"> 1). Nutrition which causes emotional and flavouring satisfaction *2). Nutrition which is adequate to energy expenditures of the organism *3). Nutrition which provides penetration of sufficient amount of proteins, fats, carbohydrates, vitamins and mineral substances into the organism 4). Nutrition which provides optimum conditions for realization of information-power opportunities of the human organism 5). Nutrition which answers enzyme opportunities of digestive system 6). Nutrition which answers biological rhythms of the organism 7). Nutrition which provides high professional working capacity and prophylaxis of occupational diseases 8). Nutrition which provides the medical-updated function 9). Nutrition which provides fast adaptation to new unusual and extreme conditions of the environment 	<p>10. What are the most objective and exact methods of estimation of nutrition of the organized collectives:</p> <ul style="list-style-type: none"> 1). Budgetary 2). Balance 3). Biographical 4). Answering-weight *5). Laboratory 6). Calorimetric 7). Energymetric *8). Settlement 9). Bacteriological <p>11. Indicate, consumption of what foods should be limited in nutrition of the employee:</p> <ul style="list-style-type: none"> 1). Milk 2). Vegetables 3). Fruit *4). Fats of animal origin 5). Fish 6). Fats of phytogenesis 7). Canned food 8). Mineral water 9). Berries

Transactions of student independent work

Kind of activity	Result of activity
1 _____ _____ _____ _____	
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Subject 13: Sanitary-and-hygienic control over public catering.

Date _____ “___”20__;

Student's name, year, group _____

Learning objective

1. Extend the students' knowledge on the nutrition peculiarities of different age groups and occupations people, sportsmen, pregnant women and nursing mothers.

Basics***You should know:***

1. Physiological peculiarities of metabolism of children and adolescents, people of elder age group and their health status.

2. Nutrition peculiarities of people involved in mental and physical activity, sportsmen, pregnant women and nursing mothers.

You should have the following skills:

1. To carry out the medical control of the nutrition of different population groups taking into account their physiological and age peculiarities, physical and psycho-emotional stress.

2. To carry out the prophylactic measures concerning the nutrition optimization of the above mentioned groups of population according to the “Norms of the physiological requirements of the Ukrainian population for the essential nutrients and energy” № 272-99.

Independent Control of Classroom and SIW in test tasks	
<p>1. Which are the main principles of medical-dietary nutrition?</p> <p>1). Provision of high caloric content of the daily diet</p> <p>2). Acceleration or slowing down of toxic substances metabolism</p> <p>*3). Ensuring the individual approach to patients</p> <p>4). Assistance in losing weight</p> <p>*5). Provision of stimulating influence upon the organism as a whole and dynamics of nutrition</p> <p>6). Ensuring the sufficient set of the foods</p> <p>*7). Construction in the form of daily diets</p> <p>*8). Provision of dynamic character of nutrition</p> <p>*9). Provision of maximum protection of the diseased organ</p>	<p>4. Cite classification of the products taking into account their medical characteristic:</p> <p>*1). Products, which render protective influence on mucous membrane of gastrointestinal tract</p> <p>*2). Products, which are characterized by low content of fat, sodium or the presence of modified carbohydrate components</p> <p>*3). Products with fillers, which have low energy value</p> <p>*4). Protein-free products</p> <p>*5). Products enriched with microelements and vitamins</p> <p>6). Products with modified flavouring qualities</p> <p>7). Demineralised products</p> <p>8). Spices and aromatizers</p> <p>9). Products-surrogates</p>
<p>2. What is the difference between the diets of medical nutrition and usual food?</p> <p>*1). Set of foods</p> <p>2). Vitamin composition</p> <p>*3). Restriction of separate nutrients</p> <p>4). Quality of cooking</p> <p>*5). Restriction or increase of caloric content</p> <p>6). Appearance of the food</p> <p>*7). Kinds of culinary processing and temperature of the food</p> <p>8). Microelement composition</p> <p>*9). Regimen of nutrition</p>	<p>5. List the main principles of chemical protection during organization of medical-dietary nutrition:</p> <p>1). Shaking of dishes</p> <p>2). Mixing of foods</p> <p>*3). Elimination of dishes, rich in extractive substances</p> <p>4). Chopping and rubbing of foods</p> <p>*5). Restriction of dishes, which have secretagogue action</p> <p>6). Long frying of dishes</p> <p>*7). Steam method of cooking dishes</p> <p>*8). Elimination of spices</p> <p>9). Restriction of protein and carbohydrate</p>
<p>3. Name the main kinds of protection during organization of medical-dietary nutrition:</p> <p>*1). Mechanical protection</p>	<p>6. List the main principles of mechanical protection when organizing medical-dietary nutrition:</p> <p>1). Restriction of the spices</p>

<ul style="list-style-type: none"> 2). Biological protection 3). Energy protection 4). Extractive protection *5). Thermal protection 6). Step-like protection 7). Contrasting protection *8). Chemical protection 9). Discharge protection 	<ul style="list-style-type: none"> *2). Restriction of the cellulose 3). Granulation of foods *4). Exception of nutrients, which are poorly assimilated 5). Exception of bouillons with large fat content *6). Chopping and rubbing of foods 7). Introduction of jellied meat to the diet *8). Nutrition mainly with liquid food 9). Elimination of cooking salt from the diet
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<p>7. List the main principles of organization of medical-preventive nutrition:</p> <ul style="list-style-type: none"> *1). Acceleration of the removal of harmful substances from the organism 2). Increase of energy value of the diet 3). Elimination of the separate products from the diet *4). Delay of penetration of harmful substances into the organism *5). Protection of separate organs and systems from action of harmful substances 6). Reduction of energy value of the diet *7). Acceleration or slowing down of the toxic substance metabolism *8). Increasing general reactivity of the organism 9). Additional inclusion of flavouring substances into diets 	<p>9. List the main features of the diets of medical-dietary nutrition:</p> <ul style="list-style-type: none"> *1). Indications to using and target medical purpose 2). Features of using in extraordinary conditions *3). Energy value and chemical composition 4). Indices to using and target preventive purpose 5). Features of using in different climatic conditions *6). List of allowed and recommended dishes *7). Regimen of nutrition 8). Features of using in different national-ethnic regions *9). Features of the culinary processing
<p>8. Name the food-stuffs, the richest in polyunsaturated fatty acids:</p> <ul style="list-style-type: none"> 1). Butter 2). Beef 3). Ram fat 4). Lard *5). Sunflower oil 6). Dairy products 7). Fruits and vegetables 8). Confectionery 9). Sausages 	

Transactions of student independent work

Kind of activity	Result of activity
1 _____ _____ _____ _____	
2 _____ _____ _____ _____	
3 _____ _____ _____ _____	
4 _____ _____ _____ _____	

Subject 14: Food poisonings as a sanitary-and-hygienic problem. Technique of investigation of food poisonings (SIW).

Date _____ “ ____ ”20 __;

Student’s name, year, group _____

Learning objective

1. Master the knowledge on food poisonings, their etiology, clinic, methods of investigation, general and specific prophylaxis.

Basics

You should know:

1. Definition of “food poisoning” and their classification.
2. The food poisoning etiology, pathogenesis, clinic and prevention.

You should have the following skills:

1. To determine the type of food poisoning, provide the medical help in their cases.
2. To organize, investigate and determine the cause (food product or meal) of food poisoning.
3. To organize preventive measures for the elimination of the food poisoning causes and food poisoning prevention.

Independent Control of Classroom and SIW in test tasks

<p>1. List characteristics of the the outbreak of food poisoning:</p> <ol style="list-style-type: none"> 1). Gradualness 2). Endemic character of the the outbreak *3). Suddenness 4). Slow development of the the outbreak *5). Noncontagious character *6). Mass character 7). A long course of the the outbreak *8). The fast termination of the outbreak after carrying out sanitary actions *9). Consumption of food of poor quality by the population 	<p>4. Name the basic kinds of food poisonings of microbic etiology:</p> <ol style="list-style-type: none"> 1). Biogeochemical endemies *2). Mycotoxicoses 3). Poisonings with partially poisonous products *4). Toxicoinfections 5). Poisonings with poisonous products 6). Poisonings with impurity of poisonous weeds *7). Bacterial toxicoses 8). Poisoning with impurities of chemical substances got to foodstuff 9). Food allergies
<p>2. Name conditions which assist occurrence of the outbreak of food poisoning:</p> <ol style="list-style-type: none"> *1). Crossing of technological lines of ready food and uncooked products *2). Insufficient thermal processing of food 3). Insufficient experience of work of the personnel *4). Non-observance of periods of storage and realization of finished products 5). Big inflow of visitors 6). Insufficient natural illumination in premises of the food block 7). Absence of ventilation in premises of the food block *8). Presence of bacilli carriers among the personnel of the food block *9). Non-observance of rules of washing cooking battery and tableware 	<p>5. Determine tactics of the doctor who was the first to find out food poisoning:</p> <ol style="list-style-type: none"> *1). To render the urgent help to diseased humans *2). To sample the food debris and products for laboratory research and to put in the cold *3). To withdraw the rests of suspicious food from realization 4). To inform about the poisoning in the regional hospital *5). To send the urgent message in the regional SES 6). To hold meeting with workers of easting establishment 7). To sample water from the nearest mine well for laboratory research *8). To sample vomit mass and faeces of patients for laboratory research 9). To send urine and blood of deseased for laboratory research
<p>3. Name conditions which assist occurrence of food poisonings of the bacterial nature:</p> <ol style="list-style-type: none"> *1). Violations of rules of technology of cooking 	<p>6. Give classification of food poisonings:</p> <ol style="list-style-type: none"> 1). Nutritional-toxic illnesses *2). Food poisonings of non-microbic etiology

<p>2). Pollution of foodstuff with radionuclids *3). Microbic contamination 4). Use of home-made canned meat *5). Violation of terms of realization of products 6). An inadequate and unbalanced nutrition *7). Violation of rules for storage of products 8). Use of home-smoked products 9). Pollution of products with toxic substances</p>	<p>3). Biogeochemical endemias 4). Hypovitaminoses 5). Food allergies *6). Food poisonings of unestablished etiology 7). Protein-energy deficiency 8). Bio-and geohelminthoses *9). Food poisonings of microbic etiology</p>
<p>7. Name the basic kinds of food poisonings of non-microbial etiology: 1). Biogeochemical endemias 2). Mycotoxicoses *3). Poisonings with partially poisonous products 4). Toxicoinfections *5). Poisonings with poisonous products *6). Poisonings with impurities of poisonous weeds 7). Bacterial toxicoses *8). Poisonings with impurities of chemical substances got to foodstuff 9). Food allergies</p>	<p>10. Choose infections which can arise owing to consumption of substandard milk and dairy products: *1). Intestinal infections: cholera, typhoid fever, dysentery, paratyphoid A and B *2). Food toxicoinfections 3). Botulism 4). Acute respiratory-viral diseases *5). Staphylococcal food intoxication 6). Parotitis 7). Whooping cough 8). Helminthoses *9). Tuberculosis, foot-and-mouth disease, brucellosis, anthrax</p>
<p>8. Name foodstuff of the plant origin which can cause food poisoning: *1). Grains of barley which have wintered *2). Kernels of apricots, peaches and cherries 3). Wheat *4). Potatoes 5). Calendula *6). Kidney beans 7). Garlic 8). Green peas 9). Buckwheat which has wintered</p>	<p>11. Name diseases which can arise owing to consumption of meat and fish of poor quality: 1). Flu *2). Diphyllbothriasis 3). Acute respiratory-viral infections *4). Trichinellosis 5). Viral hepatitis 6). Fluorosis 7). Fusariosis *8). Opisthorchosis *9). Salmonellosis</p>
<p>9. Name toxic substances which there are in kidney beans, potatoes and fruits and can cause food poisonings: 1). Helvelic acid *2). Solanin 3). Aflatoxin 4). Hemolytic poison *5). Fasin 6). Histamine 7). Histidine *8). Hydrocyanic acid 9). Tetrodoxine</p>	

Transactions of student independent work

Kind of activity	Result of activity
<p>1 _____ _____ _____ _____</p>	
<p>2 _____ _____ _____ _____</p>	
<p>3 _____ _____ _____</p>	

Content module 4.
“Occupational hygiene”

Subject 15: Legislative fundamentals for carrying out sanitary supervision in the field of occupational hygiene.

Date _____ “___”20 __;

Student’s name, year, group _____

Learning objective

1. Learn about general hazards caused by industrial environment and occupational injuries and diseases as their consequences.

2. Learn about methods and techniques for determination of the most common types of occupational hazards and their impact on worker’s organism and health; about legislative, administrative, technical measures for health protection and prevention of occupational diseases.

Basics

You should know:

1. Fundamentals of Ukrainian legislation in the field of hygiene and labour protection.
2. Classification and characteristics of occupational hazards.
3. Physiologic, biochemical and pathophysiological signs and characteristics of organism’s response to occupational hazards.

You should have the following skills:

1. To determine basic agents of industrial environment and work process that may have negative impact on the worker, to reveal and assess signs of such impact on organism.
2. To substantiate and carry out sanitary and hygienic measures regarding safe working conditions.

Independent Control of Classroom and SIW in test tasks

<p>1. Indicate the classes of occupational hazards:</p> <ol style="list-style-type: none"> 1). Unsatisfactory carrying out of vocational career-guidance 2). Epidemiological violations of industrial processes *3). Sanitary violations of industrial processes 4). Unsatisfactory climate-weather conditions 5). Wrong organization of vocational training *6). Incorrect organization of labour process *7). Unsatisfactory external conditions of work 8). Unsatisfactory internal conditions of work 9). Wrong organization of extra-work period 	<p>3. Name kinds of occupational hazards which belong to the class “sanitary violations of industrial process”:</p> <ol style="list-style-type: none"> *1). Adverse influence of mechanical and physical factors 2). Excessive intensity of labour activity 3). Monotony of labour process *4). Adverse influence of chemical factors 5). Unsatisfactory illumination, ventilation and heating *6). Adverse influence of biological factors 7). Excessive duration of the working day 8). Overload of separate organs and systems 9). Long forced position of the body
<p>2. What are the main tasks of occupational hygiene as a science:</p> <ol style="list-style-type: none"> 1). Studying of health state of the person before beginning of work, during labour activity and after its ending *2). Studying labour processes and physiological changes in the organism which they cause *3). Studying the influence of various factors of industrial environment on the organism with the purpose of development of hygienic standards 4). Studying the industrial environment with the purpose to increase labour productivity 5). Studying the role of physical and chemical factors of the industrial environment in occurrence 	<p>4. Sources of the information on disease of workers of the enterprises and its reasons:</p> <ol style="list-style-type: none"> *1). Leaves of invalidity *2). Materials of medical check-ups *3). Results of sanitary supervision of working conditions *4). Materials of treatment-and-prophylactic establishments of area of service working 5). Coupons of attendance of narrow experts 6). The sheet of the account of working hours 7). Results of inspections of working conditions at the enterprise ecological inspection 8). Results of inspections of working conditions at the enterprise fire inspection 9). Results of inspections of working conditions at the

<p>of occupational diseases</p> <p>6). Studying pathogenesis of occupational diseases</p> <p>7). Determination of the degree of pollution of atmospheric air</p> <p>8). Determination of the degree of pollution of sources of water supply</p> <p>9). Determination of cleanliness of ground of the inhabited areas</p>	<p>enterprise veterinary inspection</p>
<p>5. During what time, from the moment of making the primary diagnosis of the acute occupational poisoning, the urgent message should be sent?</p> <p>*1). 1 day</p> <p>2). 2 days</p> <p>3). 3 days</p> <p>4). 4 days</p> <p>5). 5 days</p> <p>6). 6 days</p> <p>7). 7 days</p> <p>8). 10 days</p> <p>9). 2 weeks</p>	<p>9. Who from outstanding ancient scientists listed below was the first to make the description of occupational pathology:</p> <p>1). Aristotel</p> <p>2). Plutarch</p> <p>*3). Hippocrates</p> <p>4). Paracelsus</p> <p>5). Ramacini</p> <p>6). Galen</p> <p>7). Lomonosov</p> <p>8). Herodot</p> <p>9). Avicenna</p>
<p>6. Name kinds of occupational hazards which belong to the class “wrong organization of labour process”:</p> <p>1). Adverse influence of the factors of mechanical and physical nature</p> <p>*2). Excessive intensity of labour activity</p> <p>*3). Monotony of labour process</p> <p>4). Adverse influence of the factors of chemical nature</p> <p>5). Unsatisfactory illumination, ventilation and heating</p> <p>6). Adverse influence of the factors of biological nature</p> <p>*7). Excessive duration of the working day</p> <p>*8). Overload of separate organs and systems</p> <p>*9). Long forced position of the body</p>	<p>10. List the basic preventive measures on prevention of adverse influence of harmful production factors on the human health:</p> <p>*1). Hygienic normalization</p> <p>2). Psychotherapeutic measures</p> <p>*3). Technological measures</p> <p>4). Epidemiological measures</p> <p>*5). Sanitary-engineering measures</p> <p>*6). Architecturally-planning measures</p> <p>*7). Organizational measures</p> <p>*8). Treatment-and-prophylactic measures</p> <p>9). Information measures</p>
<p>7. Indicate the maximum term which is established for investigation of a case of chronic occupational disease (poisoning) from the moment of reception of the urgent message on disease:</p> <p>1). Not more than 10 days</p> <p>*2). Not more than 7 days</p> <p>3). Not more than 6 days</p> <p>4). Not more than 5 days</p> <p>5). Not more than 4 days</p> <p>6). Not more than 3 days</p> <p>7). Not more than 2 days</p> <p>8). Not more than 1 day</p> <p>9). Not more than 6 hours</p>	<p>11. Name kinds of occupational hazards which belong to the class “unsatisfactory external conditions of work”:</p> <p>1). Adverse influence of the factors of mechanical and physical nature</p> <p>2). Excessive intensity of labour activity</p> <p>3). Monotony of labour process</p> <p>4). Adverse influence of the factors of chemical nature</p> <p>*5). Unsatisfactory heating, ventilation, water supply and sewerage</p> <p>6). Adverse influence of the factors of biological nature</p> <p>7). Excessive duration of the working day</p> <p>*8). Insufficient and non-uniform natural or artificial illumination</p> <p>9). Long forced position of the body</p>
<p>8. Give a definition of concept “occupational disease”:</p> <p>1). Disease caused by influence of infectious factors</p> <p>*2). Disease caused by influence of industrial hazards and confirmed in accordance with established procedure</p> <p>3). Disease caused by a high degree of introduction of new information technologies</p> <p>4). Disease caused by insufficient qualification of workers</p> <p>5). Disease caused by a low level of health services at industrial enterprise</p> <p>6). Disease caused by a low degree of mechanization of the enterprise</p> <p>7). Disease caused by influence of adverse social factors of life</p>	<p>12. Give a definition of concept “occupational poisoning”:</p> <p>1). Pathological condition the reason of which is the use of food stuffs which contain bacterial toxins in conditions of enterprise</p> <p>2). Pathological condition the reason of which is the use of food stuffs containing pathogenic microorganisms in conditions of enterprise</p> <p>3). Pathological condition the reason of which is the use of food stuffs containing toxins of plant origin in conditions of enterprise</p> <p>4). Pathological condition the reason of which is the use of food stuffs which contain toxins of animal origin in conditions of enterprise</p> <p>5). Pathological condition the reason of which is the use</p>

<p>8). Disease caused by absence of dietetic therapy at the enterprise</p> <p>9). Disease caused by decrease of immune responsiveness of the organism</p>	<p>of food stuffs which contain mycotoxins in conditions of enterprise</p> <p>7). Pathological condition the reason of which is the use of technical liquids in conditions of enterprise</p> <p>*8). Pathological condition the reason of which is penetration of toxic chemical substances into the organism in conditions of industrial enterprise</p>
<p>13. Give a definition of concept “acute occupational poisoning”:</p> <p>*1). Occupational poisoning which arises in conditions of enterprise after single influence of industrial hazards of chemical origin</p> <p>2). Occupational poisoning which arises in conditions of enterprise after double influence of industrial hazards of chemical origin</p> <p>3). Occupational poisoning which arises in conditions of enterprise after triple influence of industrial hazards of chemical origin</p> <p>4). Occupational poisoning which arises in conditions of enterprise after single influence of industrial hazards of physical origin</p> <p>5). Occupational poisoning which arises in conditions of enterprise after single influence of industrial hazards of biological origin</p> <p>6). Occupational poisoning which arises in conditions of enterprise after repeated and long influence of industrial hazards of chemical origin</p> <p>7). Occupational poisoning which arises owing to long penetration of industrial poisons in the organism with foodstuff</p> <p>8). Occupational poisoning which demands obligatory transfer the worker on 1-2 group of physical inability</p>	<p>17. Give a definition of concept “chronic occupational poisoning”:</p> <p>1). Occupational poisoning which arises in conditions of enterprise after single influence of industrial hazards of chemical origin</p> <p>2). Occupational poisoning which arises in conditions of enterprise after double influence of industrial hazards of chemical origin</p> <p>3). Occupational poisoning which arises in conditions of enterprise after triple influence of industrial hazards of chemical origin</p> <p>4). Occupational poisoning which arises in conditions of enterprise after single influence of industrial hazards of physical origin</p> <p>5). Occupational poisoning which arises in conditions of enterprise after single influence of industrial hazards of biological origin</p> <p>*6). Occupational poisoning which arises in conditions of enterprise after repeated and long influence of industrial hazards of chemical origin</p> <p>7). Occupational poisoning which arises owing to long penetration of industrial poisons in the organism with foodstuff</p> <p>8). Occupational poisoning which demands obligatory transfer the worker on 1-2 group of physical inability</p>
<p>14. The workers are working in standing position, bending under a corner 32° 300 times per shift, simultaneously observing five objects. Duration of working operations – 2-4 seconds. Active actions make 87 % from shift duration. On what parameters, mentioned in the task, it is possible to determine monotony of work?</p> <p>*1). On duration of operations</p> <p>2). On working position</p> <p>3). On percent of active actions (87 %)</p> <p>4). By number of bendings (300 per shift)</p> <p>5). By number of objects of supervision (5)</p>	<p>18. What are the main occupational hazards in the work of machine operators of agriculture?</p> <p>*1). Forced working posture</p> <p>*2). Discomfortable microclimatic conditions</p> <p>3). Increased atmospheric pressure</p> <p>4). Electromagnetic fields</p> <p>5). High air ionization</p> <p>*6). Pollution of the working zone by dust and exhaust gases</p> <p>*7). Contact with toxic chemicals</p> <p>8). Biological factor</p> <p>*9). Noise and vibration</p>
<p>15. On one of the sites of the railway station, where unloading of cars with sand is realized, during physiologic-hygienic research of the loaders’ character of work, who are breaking with a shovel the baked weight and passing it, it is established, that their work belongs to the 3rd degree of weight. Using which of the listed criteria the assessment of works of loaders could be carried out?</p> <p>1). Time of active actions, % to duration of the shift</p> <p>2). Size of static load for shift</p> <p>*3). The maximal weight of the cargo which is moved</p> <p>4). Intellectual intensity</p> <p>5). Time of passive supervision, % to shift duration</p>	<p>19. Indicate the maximum term which is established for investigation of a case of acute occupational disease (poisoning) from the moment of reception of the urgent message on disease:</p> <p>1). Not more than 10 days</p> <p>2). Not more than 7 days</p> <p>3). Not more than 6 days</p> <p>4). Not more than 5 days</p> <p>5). Not more than 4 days</p> <p>6). Not more than 3 days</p> <p>7). Not more than 2 days</p> <p>*8). Not more than 1 day</p> <p>9). Not more than 6 hours</p>
<p>16. There was an acute group poisoning by nitrogen oxides with fatal outcome at a chemical plant. A commission is created for investigation of this case. Who should be the head of the commission on</p>	<p>20. Work of the operator of a machine set demands storing of a plenty of consecutive separate elements of work on a short time interval. What kind of memory characterizes work of the operator?</p>

investigation? *1). Head doctor of sanitary-and-epidemiologic station 2). The expert on occupational pathology controls public health services 3). The representative of the state supervision of a labour safety 4). The proprietor of the enterprise 5). The representative of the trade-union organization	*1). Operative memory 2). Long-term memory 3). Short-term memory 4). Logic memory 5). Forced memory
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Transactions of student independent work

Kind of activity	Result of activity
1 _____ _____ _____ _____	
2 _____ _____ _____ _____	
3 _____ _____ _____ _____	
4 _____ _____ _____ _____	

Theoretical questions to the final module control:

1. Sanitary legislation in the field of labour protection.
2. Preliminary and periodic check-ups of workers, the organization of their carrying out, preparation of the registration and accounting documentation.
3. Main principles and criteria of hygienic normalization of industrial poisons in the air of working zone as bases for prophylaxis of poisonings.
4. Methods and means of occupational pathology prophylaxis and protection of work at industrial enterprises.
5. Characteristic of documents which are necessary during investigation of cases of occupational poisonings or diseases.
6. Safety precautions, industrial sanitary, sanitary education of workers as means for prophylaxis of occupational diseases and poisonings.

Final test control – open base tests

Final grade

Teacher's signature _____

Subject 16: Hygienic assessment of factors of the labour process and industrial environment.

Date _____ “___”20__;

Student's name, year, group _____

Learning objective

1. Master hygienic assessment procedure of work intensity and tension for overwork prevention and increase of working capacity.

Basics

You should know:

1. Fundamentals of physiology of physical and mental work, its classification.
2. Methods of assessment of work intensity and tension.
3. Methods and technique of labour management and overwork prevention improvement.

You should have the following skills:

1. To determine and assess work intensity and tension characteristics and signs of fatigue and overwork.
2. To recommend rational work and rest conditions at physical and mental work according to their intensity and tension.

Independent Control of Classroom and SIW in test tasks	
1. What are the kinds of physical dynamic work? 1). Operator's work *2). General muscular work 3). Work which is directed at keeping the working position 4). Creative work 5). Administrative-supervising work *6). Regional muscular work *7). Local muscular work 8). Work of teachers, pupils and students 9). Work which is directed at maintenance of instruments and subjects of work	4. Indicate the kinds of mental work: *1). Operator's work 2). General muscular work 3). Work which is directed at keeping the working posture *4). Creative work *5). Administrative-supervising work 6). Regional muscular work 7). Local muscular work *8). Work of teachers, pupils and students 9). Work which is directed at support of instruments and subjects of work
2. Indicate the basic forms of labour activity according to physiological classification: *1). Forms of work which demand significant muscular activity *2). Group (conveyor) forms of work 3). Forms of work in which there are no adverse factors 4). Forms of work with changeable and moderate adverse influence *5). Mechanized forms of work *6). Forms of work which are connected with management of production processes and mechanisms 7). Forms of work with a complex of expressed adverse factors *8). Forms of intellectual and brainwork 9). Forms of work with difficult and harmful conditions of labour activity	5. Indicate the basic forms of labour activity according to medical-industrial classification: 1). Forms of work which demand significant muscular activity 2). Group (conveyor) forms of work *3). Forms of work in which there are no adverse factors *4). Forms of work with changeable and moderate adverse influence 5). Mechanized forms of work 6). Forms of work which are connected with management of production processes and mechanisms *7). Forms of work with a complex of expressed adverse factors 8). Forms of intellectual and brainwork *9). Forms of work with difficult and harmful conditions of labour activity
3. Indicate the kinds of physical static work: 1). Operator's work 2). General muscular work *3). Work which is directed at keeping the working posture	6. What classifications of the basic forms of labour activity are used in occupational hygiene? *1). Physiological 2). Pathophysiologic 3). Administrative

<p>4). Creative work 5). Administrative-supervising work 6). Regional muscular work 7). Local muscular work 8). Work of teachers, pupils and students *9). Work which is directed at support of instruments and subjects of work</p>	<p>4). Organizational *5). Psychological 6). Sanitary 7). Epidemiological *8). Medical-industrial *9). Ergonomic</p>
<p>7. List the basic kinds of labour activity: 1). Physical local work 2). Impellent activity *3). Physical dynamic work 4). Physical regional work 5). Analytical work *6). Physical static work *7). Mental work 8). Creative work 9). Administrative work</p>	<p>11. Indicate the main components of biological factor at industrial enterprise: *1). Microorganisms *2). Macroorganisms *3). Products of microbiological synthesis 4). Organic synthetic substances *5). Organic substances of natural origin 6). Inorganic substances of natural origin 7). Chemical substances 8). Insecticides 9). Products of oil and gas</p>
<p>8. Name methods which are used for the estimation of the degree of weight and intensity of work: *1). Physiological 2). Psychological 3). Biochemical 4). Toxicological *5). Ergonomic 6). Physical 7). Chemical 8). Microbiological 9). Epidemiological</p>	<p>12. What methods are used for studying the strength of muscles? *1). Dynamometry 2). Chronoreflexometry 3). Electrotremorometry 4). Electrocardiography 5). Tonometry 6). Spirometry *7). Ergography 8). Spirography 9). Proof-reading test</p>
<p>9. What systems should be studied when estimating weight and intensity of work? *1). CNS, cardiovascular system, muscular system 2). GIT, endocrine system, urinogenital system 3). Hemopoetic system, endocrine system, urinogenital system 4). Internal organs, reticuloendothelial system, endocrine system 5). System of curtailing of blood, reticuloendothelial system, thermoregulation 6). Thermoregulation, buffer system of blood, immune system 7). Immune system, endocrine 8). Endocrine system, buffer system of blood, system of blood coagulation 9). Internal bodies, thermoregulation system, urinogenital system</p>	<p>13. List the basic stages and the periods of physiological curve work capacity: 1). Stage of after-effect *2). Stage of adaptation to activity 3). Stage of low capacity for work *4). Stage of high capacity for work 5). Stage of average capacity for work 6). Stage of decrease of capacity for work, the period of full indemnification *7). Stage of decrease of capacity for work, the period of incomplete compensation *8). Stage of decrease of capacity for work, the period of the final eagerness *9). Stage of decrease of capacity for work, the period of progressive recession of work capacity</p>
<p>10. What method is used to study conditioned-reflex activity? 1). Dynamometry *2). Chronoreflexometry 3). Electrotremorometry 4). Electrocardiography 5). Tonometry 6). Spirometry 7). Ergography 8). Spirography 9). Proof-reading test</p>	<p>14. What method is used for studying attention? *1). Method of finding numbers *2). Proof-reading test 3). Storing of numbers 4). Storing of geometrical figures 5). Chronoreflexometry 6). Electrotremorometry 7). Definition of critical frequency of light blinkings 8). Ergography 9). Spirometry</p>

Subject 17: Occupational hygiene of medical workers at medical-preventive establishments (SIW).

Date _____ “ ____ ”20 __;

Student's name, year, group _____

Learning objective

1. Master the knowledge on the hygienic conditions and harmful factors influencing medical workers' health.
2. Become familiar with the legislative and organizational measures of the provision of the optimal regime, hygienic conditions for the medical workers' labour protection.
3. Master the general scheme and methods of subjective (sanitary inspection) and objective sanitary control of the conditions of medical personnel labour at the hospital.

Basics

You should know:

1. Basic hygienic requirements concerning the planning, equipment, regime, exploitation of the treatment, diagnostic, accessory and consumer subdivision of the in-patient departments.
2. Hygienic standards of microclimate, air, ventilation, natural and artificial lighting of different subdivisions of the medical institution, their importance in the conditions of medical personnel labour.
3. Harmful and dangerous factors of different subdivisions of the medical institution (diagnostic, physiotherapeutic, balneal etc.), their influence on the medical personnel health.

You should have the following skills:

1. To carry out the sanitary inspection and determine the objective figures of the hygienic condition of the medical institution different subdivisions.
- 2 To determine and assess harmful and dangerous factors of different subdivisions of the medical institution and their influence on the medical personnel health.

Independent Control of Classroom and SIW in test tasks	
<p>1. Name the basic components of lasers which are used in medical practice:</p> <ol style="list-style-type: none"> 1). Passive medium 2). Absorbing medium *3). Active medium 4). The interactive medium 5). System of absorption *6). System of pumping 7). System of saturation 8). Detector *9). Resonator 	<p>4. Indicate the basic types of lasers by the degree of danger:</p> <ol style="list-style-type: none"> *1). The first class - safe 2). The second class - excessively dangerous *3). The second class - average danger 4). The sixth class - powerful 5). The fifth class - extremely dangerous *6). The fourth class – of high danger 7). The fifth class - rather dangerous 8). The first class - absolutely dangerous *9). The third class - dangerous
<p>2. Name kinds of electromagnetic radiations which demand hygienic normalization:</p> <ol style="list-style-type: none"> 1). Electromagnetic fields of cosmic radiation 2). Electromagnetic fields of the optical range *3). Electromagnetic fields of radio frequencies 4). Electromagnetic fields of telefrequencies *5). Electric fields of industrial frequency 6). Electric fields of household frequency *7). Impulse electromagnetic fields of low frequency *8). Static electricity 9). Dynamic electricity 	<p>5. Give a classification of electromagnetic radiation by wave length:</p> <ol style="list-style-type: none"> *1). Millimetric (1-10 mm) 2). Ultrashort (1-10 3). Average (100 m - 1 km) *4). Decimeter (10 sm – 1m) *5). Short (10 – 100 m) *6). Centimetric (1-10 sm) *7). Ultrashort (1-10 m) 8). Ultrashort (1-10 dm) 9). Decimeter (1 sm - 1 dm)
<p>3. What are the main criteria of estimation and substantiation of the degree of safety of laser radiation:</p> <ol style="list-style-type: none"> 1). Color of the crystal *2). Wave-length 	<p>6. Name the basic kinds of radiations which arise during work of lasers and are a subject of hygienic normalization:</p> <ol style="list-style-type: none"> 1). Impulse radiation 2). Concentrated radiation

<p>3). Type of laser *4). Duration of impulse *5). Energy of radiation *6). Exposition of radiation 7). Atmospheric pressure 8). Microclimatic conditions 9). The class of danger</p>	<p>3). The return radiation *4). Direct radiation 5). Reflected radiation *6). Specular reflection radiation *7). Diffusing reflection radiation *8). Disseminated 9). Stable</p>
<p>7. What are the main means for prophylaxis of negative influence of laser radiation: *1). Remote control and use of individual means of protection 2). Medical-preventive nutrition *3). Hygienic normalization 4). Means of physiotherapy *5). Use of input-exhaust ventilation 6). Psychotherapy and psychic prophylaxy *7). To screen off the laser zone and to shield the pencil of radiation 8). Means of reflexotherapy *9). Carrying out of preventive medical check-ups</p>	<p>10. Name the basic actions on prophylaxis of negative influence of electromagnetic fields of radio frequencies: *1). Hygienic normalization 2). Maintenance of comfortable microclimate *3). Creation of sanitary-protective zones around the antenna constructions 4). Use of the input-extract ventilation 5). Chemical methods of protection *6). Shielding of workplaces 7). Grounding of electrodevises *8). Carrying out preliminarre and periodic medical check-ups *9). Electrohermetization of equipment of antenna constructions</p>
<p>8. List the main professional factors, which negatively influence upon the organism of medical workers: 1). Unsatisfactory climate-weather condition *2). High nervous-emotional strain *3). Forced working position 4). Seasonal character of work *5). Discomfortable microclimate 6). Low motor activity *7). Harmful chemical substances (medicines, disinfectants) *8). Biological agents *9). Negative physical factors (noise, vibration, ultrasound, lazer and ionizing radiation)</p>	<p>11. By what indices is the classification of lasers, which are applied in medical practice, carried out? 1). Exposition of irradiation *2). Level of danger 3). Way of heating *4). Depending on aggregative state of the active medium *5). Depending on character of generation of radiation 6). Depending on operating mode 7). On the source of power supply *8). Depending on the way of pumping of active substance 9). Way of cooling</p>
<p>9. Indicate, what electromagnetic fields by frequency characteristics are used in physiotherapy: 1). Stable 2). High-frequency *3). UHF-fields 4). Impulse 5). Short-frequency *6). Microwave-fields 7). Under-threshold 8). Low-frequency 9). Nonstable</p>	

Transactions of student independent work

Kind of activity	Result of activity
1 _____ _____ _____ _____	
2 _____ _____ _____ _____	
3 _____ _____ _____	

Subject 18: Physical development as an important criterion for assessing children and teenagers’ health.

Date _____ “___”20__;

Student’s name, year, group _____

Learning objective

1. Strengthen theoretical knowledge about factors and conditions of environment which influence the formation of children’s health, general patterns of the child and adolescent organism growth and development, main criteria and indices of the children and adolescents health.
2. Master methods of complex assessment of the children and adolescents health and physical development.

Basics

You should know:

1. Principal factors of environment and social conditions of life, which influence health of children and adolescents.
2. Main patterns of growth, development and peculiarities of morphological and functional state of the child and adolescent organism.
3. Methods of assessment of the children and adolescents health and physical development and criteria of allocation by health groups.

You should have the following skills:

1. To determine the health groups, somatometric, somatoscopic and physiometric indices of the children’s and adolescents’ physical development.
2. To assess of the children’s and adolescents’ physical development.

Independent Control of Classroom and SIW in test tasks

<p>1. Name the main factors which form children and teenagers’ health:</p> <ul style="list-style-type: none"> *1). Environment 2). Internal environment 3). Sociopolitical preconditions 4). Organization of the rehabilitation help 5). Social-ecological factors *6). Way of life *7). Organization of medical service *8). Genetic preconditions 9). Information factors 	<p>3. Name the main criteria of the complex estimation of health state of children and teenagers:</p> <ul style="list-style-type: none"> 1). Level of biological development *2). Absence or presence of chronic diseases 3). Functional readiness for studying at school *4). Level of attained physical development and a degree of its harmonicity *5). Level of resistivity of the organism to influence of unfavorable environmental factors 6). Features of nervous-emotional state *7). Level of a functional condition of the basic systems of an organism 8). Level of physical readiness 9). Level of physical capacity for work
<p>2. Give a definition of concept “pathological lesion”:</p> <ul style="list-style-type: none"> 1). Number of acute diseases of children for the certain period 2). Number of chronic diseases of children for the certain period 4). Relative density of children who were sick 4 and more times for previous year *5). Prevalence of chronic diseases and various functional deviations in children’s health state 6). The ratio of acute diseases to chronic diseases 	<p>4. List the groups of health of children and teenagers:</p> <ul style="list-style-type: none"> *1). The first (practically healthy children) 2). The first (presence of functional deviations; children who are sick often and for a long time) *3). The second (presence of functional deviations; children who are sick often and for a long time) 4). The second (presence of diseases in the stage of subcompensation) *5). The third (presence of chronic diseases in the stage of compensation)

<p>7). The ratio of chronic diseases to acute diseases</p> <p>8). Relative density of children who were not sick during previous year</p> <p>9). Prevalence of infectious diseases in a children's population</p>	<p>6). The third (presence of chronic diseases in the stage of decompensation)</p> <p>*7). The fourth (presence of diseases in the stage of subcompensation)</p> <p>8). The fourth (practically healthy children)</p> <p>*9). The fifth (presence of chronic diseases in the stage of decompensation)</p>
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<p>5. Indicate categories of children and teenagers which should be referred to the 1st group of health:</p> <p>*1). Children who have no deviations in the functional condition of the basic organs and systems of the organism</p> <p>*2). Children who have normal physical and psychological development corresponding to age</p> <p>3). Children who have functional deviations in the state of the main organs and systems</p> <p>4). Children who are frequently sick and sick for a long time</p> <p>*5). Children who have no chronic diseases</p> <p>6). Children who have chronic diseases in the stage of compensation</p> <p>7). Children who have chronic diseases in the stage of subcompensation</p> <p>8). Children who have chronic diseases in the stage of decompensation</p> <p>9). Children who have low physical readiness</p>	<p>8. Indicate categories of children and teenagers which should be carried to IV group of health:</p> <p>1). Persons who have no deviations in a functional condition of the basic bodies and systems To organism</p> <p>2). Persons who have normal physical and psychological development which Answers century</p> <p>3). Persons who have functional deviations in a condition of the basic bodies and systems To organism</p> <p>4). Persons who are frequently sick and sick for a long time</p> <p>5). Persons who have no chronic diseases</p> <p>6). Persons who have chronic diseases in the stage of compensation</p> <p>*7). Persons who have chronic diseases in the stage of subcompensation</p> <p>8). Persons who have chronic diseases in the stage of decompensation</p> <p>9). Persons who have low physical readiness</p>
<p>6. Indicate categories of children and teenagers which should be referred to the 2nd group of health:</p> <p>1). Persons who have no deviations in a functional condition of the basic organs and systems Of the organism</p> <p>2). Persons who have normal physical and psychological development corresponding to age</p> <p>*3). Persons who have functional deviations in a condition of the basic organs and systems</p> <p>*4). Persons who are frequently sick and sick for a long time</p> <p>*5). Persons who have no chronic diseases</p> <p>6). Persons who have chronic diseases in the stage of compensation</p> <p>7). Persons who have chronic diseases in the stage of subcompensation</p> <p>8). Persons who have chronic diseases in the stage of decompensation</p> <p>9). Persons who have low physical readiness</p>	<p>9. Indicate categories of children and teenagers which should be referred to the 5th group of health:</p> <p>1). Persons who have no deviations in the functional condition of the main organs and systems</p> <p>2). Persons who have normal physical and psychological development which</p> <p>3). Persons who have functional deviations in a condition of the main organs and systems</p> <p>4). Persons who often and for a long time are sick</p> <p>5). Persons who have no chronic diseases</p> <p>6). Persons who have chronic diseases in the stage of compensation</p> <p>7). Persons who have chronic diseases in the stage of subcompensation</p> <p>*8). Persons who have chronic diseases in the stage of decompensation</p> <p>9). Persons who have low physical readiness</p>
<p>7. Indicate categories of children and teenagers which should be carried to the 3rd group of health:</p> <p>1). Persons who have no deviations in the functional condition of the basic organs and systems of the organism</p> <p>2). Persons who have normal physical and psychological development corresponding to age</p> <p>3). Persons who have functional deviations in a condition of the basic bodies and systems</p> <p>4). Persons who often and for a long time are ill {sick}</p> <p>5). Persons who have no chronic diseases</p> <p>*6). Persons who have chronic diseases in the stage of compensation</p> <p>7). Persons who have chronic diseases in the stage of subcompensation</p>	<p>10. Give a definition of concept “ physical development ” of a child:</p> <p>1). Rates of growth and development of different organs and systems</p> <p>*2). Set of morphological and functional features of the organism, which characterizes its growth and development during the concrete period of life</p> <p>3). Degree of development of muscular system and its functional features during the different periods of life</p> <p>4). Set of measures on improvement of physical condition of children and teenagers</p> <p>6). Subjective criterion of estimation of health condition and sanitary condition of the population</p> <p>7). Set of parameters of the functional condition of the organism</p>

8). Persons who have chronic diseases in the stage of decompensation 9). Persons who have low physical readiness	8). Degree of puberty 9). Physical condition of the organism
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11. Name methods of dynamic supervision over physical development of children and teenagers: 1). Somatometric 2). Physiometric *3). Generalised *4). Individualized 5). Regressioon 6). Somatoscopic 7). Claster 8). Factorial 9). Epidemiological	14. Name devices and equipment ,necessary for definition of the height of children and teenagers: *1). Wooden heightmeter 2). Tape-measure *3). Metal anthropometer 4). Centimetric tape 5). Dynamometer 6). Spirometer 7). Medical scales
12. Name leading anthopometrical parameters of physical development of children and teenagers: 1). Biorhythmologic *2). Somatometric 3). Genetic *4). Somatoscopic 5). Anthropological 6). Hygienic 7). Sociological *8). Physiometric 9). Somatotypologic	15. Name devices and equipment, necessary for determination of body weight of children and teenagers: 1). Wooden heightmeter 2). Tape-measure 3). Metal anthropometer 4). Centimetric tape 5). Dynamometer 6). Spirometer *7). Medical scales
13. List the main somatometric parameters of physical development of children and teenagers: 1). Degree of adiposity 2). Muscular force *3). Length of the body 4). Vital capacity of the lungs 5). Signs of puberty *6). Body weight *7). Chest circumference 8). Condition of the skin and mucous membranes 9). Class force	16. Name devices and equipment, necessary for definition of chest circumference of the body of children and teenagers: 1). Wooden heightmeter 2). Tape-measure 3). Metal anthropometer *4). Centimetric tape 5). Dynamometer 6). Spirometer 7). Medical scales

Transactions of student independent work

Kind of activity	Result of activity
1 _____ _____ _____ _____	
2 _____ _____ _____ _____	
3 _____ _____ _____ _____	
4 _____ _____ _____ _____	

Subject 19: Hygienic requirements to planning, accomplishment and equipment of children's establishments.

Date _____ "____"20 __;

Student's name, year, group _____

Learning objective

1. Strengthen theoretical knowledge about significance of optimal hygienic conditions maintenance during organization of training and education for preservation and strengthening of schoolchildren health, prevention of "school diseases" appearance.
2. Become familiar with methods of hygienic assessment of land plot and building of educational establishment, its main premises (school class), inspection of conditions for schoolchildren in educational establishment, working out and substantiation of hygienic recommendations for improvement of the training and education organization.
3. Master method of hygienic assessment of school furniture.

Basics

You should know:

1. Peculiarities of main environmental factors and conditions, training and education, which influence the children and adolescents health.
2. Health disorders and diseases caused by influence of environmental conditions, training and education.
3. Hygienic requirements to land plot and building, planning, sanitary and technical infrastructure (microclimate parameters, illumination, ventilation, water-supply etc.) of main premises of training and educational establishments.
4. Hygienic requirements to construction and certain parameters of school furniture.

You should have the following skills:

1. To draw up the plan of inspection of training premise and fill appropriate papers (sanitary description, sanitary inspection act, hygienic conclusion).
2. To research temperature regime, humidity and air movement, illumination, calculate required and actual ventilation volume and rate (air exchange rate).
3. To determine main parameters of school furniture, carry out the school desk marking and pupils seating.
4. To work out and substantiate preventive recommendations concerning improvement of sanitary and hygienic conditions of pupils stay in schoolhouse.

Independent Control of Classroom and SIW in test tasks	
<p>1. List the main requirements to school furniture:</p> <ul style="list-style-type: none"> *1). Provision of suitable and correct seat 2). Provision of dynamics of school process *3). Optimum dyeing 4). Ensuring the individual character of the school process *5). Safety from epidemiological point of view and accessibility for cleaning and disinfection *6). Economy in enterprise and use *7). Correspondence to the character of school process and absence of traumatism 8). Correspondence to the pupil's health state 9). Correspondence to the pupils' psychological features 	<p>3. List the main zones of ground area of the general school:</p> <ul style="list-style-type: none"> *1). Didactic-exploratory and sports zones 2). Group grounds *3). Zone of rest 4). Recreation zone *5). Zone of green plantings 6). Residential zone 7). Rehabilitation zone *8). Constructed zone *9). Economic zone
<p>2. Name "school diseases" stipulated by inappropriate furniture:</p> <ul style="list-style-type: none"> *1). Premature (early) fatigue, overfatigue, formation of neurotic phenomena 2). Headache and dizziness *3). Disorders of posture 4). Acute respiratory-viral infections 5). Anemia 	<p>4. List the main types of the premises of the general school:</p> <ul style="list-style-type: none"> *1). Educational sections for primary classes 2). Group premises *3). Classrooms and laboratories *4). Premises for labor education *5). Didactic-sports premises and premises of cultural-mass purpose

*6). Myopia and hypermetropia 7). Tonsillitis 8). Conjunctivitis and keratitis 9). Decrease of hearing	6). Laundry 7). Premises for pupils and teachers' rest *8). Canteen, administrative-economic and auxiliary premises 9). Dwelling premises
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5. Indicate the main principles of construction and accomplishment of the children's preschool establishments: 1). Ensuring the differentiated approach in school process *2). Provision of group isolation 3). Provision of functional zonation of the territory *4). Ensuring the conditions for children's motor activity 5). Provision of rational extracurricular activity *6). Creation of favourable air-heat regimen *7). Ensuring the sufficient illumination and insolation *8). Making the conditions for organization of rational nutrition 9). Making the conditions for organization of rational rest	8. List the main hygienic requirements to illumination of the classroom of the general school: *1). Light factor - 1:4 2). Light factor - 1:8 *3). Coefficient of natural illumination – 1.5% 4). Coefficient of natural illumination - 1% *5). Illumination of the work place - 150 lx (incandescent lamps) 6). Illumination of the work place - 300 lx (incandescent lamps) *7). Illumination of the work place - 300 lx (fluorescent lamps) 8). Illumination of the work place - 150 lx (fluorescent lamps) *9). Factor of deepening - 1:2
6. Name the main principles of construction and improvement of the general schools: 1). Ensuring the differentiated approach in educational process 2). Provision of group isolation *3). Provision of functional zonation of territory *4). Ensuring the conditions for children's motor activity 5). Provision of rational extracurricular activity *6). Creation of favorable air-heat regimen *7). Ensuring the sufficient illumination and insolation *8). Making the conditions for organization of rational nutrition 9). Making the conditions for organization of rational rest	9. List hygienic requirement to microclimate parameters of the classroom of the general school: 1). Average air temperature 15-18°C *2). Average air temperature 20-22°C 3). Average air temperature 22-26°C 4). Relative air humidity 20-40% *5). Relative air humidity 40-60% 6). Relative air humidity 60-80% 7). Velocity of air movement 0-0.1 m/s 8). Velocity of air movement 0.1-0.2 m/s *9). Velocity of air movement 0.2-0.3 m/s
7. List the main hygienic requirement to the classroom of the general school: *1). Area of the classroom - 50 m ² 2). Area of the classroom - 40 m ² 3). Area of the classroom per 1 pupil – 1.0 m ² *4). Area of the classroom per 1 pupil – 1.25 m ² 5). Area of the classroom per 1 pupil – 1.5 m ² *6). Volume of the classroom - 150 m ³ 7). Volume of the classroom - 100 m ³ 8). Volume of the classroom per 1 pupil – 3.0 m ³ *9). Volume of the classroom per 1 pupil – 3.75 m ³	

Transactions of student independent work

Kind of activity	Result of activity
1 _____ _____ _____ _____	
2 _____ _____ _____	

Subject 20: Hygienic principles of rational organization of physical education and labour training of children and teenagers. Scientific fundamentals for carrying out medical-professional consultation (SIW).

Date “___” _____ 20 __;

Student’s name, year, group _____

Learning objective

1. Master theoretic knowledge on hygienic basics of rational organization of physical and labour training, occupational orientation of schoolchildren in modern conditions.
2. Become familiar with methods of hygienic assessment of organization of physical and labour training for children and adolescents.
- 1.3. Master methods of medical and occupational consultations, occupational selection and prognosis of the level of pupils’ occupational activity success.

Basics

2.1. You should know:

2.1.1. Hygienic basics of rational organization of physical and labour training of children and adolescents.

2.1.2. Hygienic requirements to organization of physical and labour training in modern general educational establishments.

2.1.3. Main stages and hygienic principles of occupational orientation, medical and occupational consultations and occupational selection of pupils.

2.2. You should have the following skills:

2.2.1. To carry out the hygienic assessment of organization of physical and labour training for children and adolescents.

2.2.2. To carry out the occupational selection and prognosis of pupils’ occupational activity success.

Independent Control of Classroom and SIW in test tasks	
<p>1. Name the main stages of carrying out professional orientation and professional selection:</p> <ul style="list-style-type: none"> *1). Study of health state and adaptation resource of the organism 2). Determination of physical preparedness *3). Determination of the key professional-significant functions *4). Carrying out the expert estimation of professional value of criterial function 5). Carrying out opinion poll *6). Taking into account motivation directivities and individual-typological peculiarities 7). Carrying out the conference on problems of the professional selection *8). Comparison of obtained results with requirements of profессиogram and scientifically motivated forecasting of success in professional activity 9). Determination of physical capacity for work 	<p>3. What schoolchildren belong to the preparatory group of physical education?</p> <ul style="list-style-type: none"> 1). Persons, who have no deviations of health state 2). Persons, who have insignificant deviations of health state under sufficient physical development *3). Persons, who have insignificant deviations of health state under insufficient physical development 4). Persons, who have deviations of health state of the constant nature, which require the restriction of physical load 5). Persons, who have deviations of health state of the temporary character, which require the restriction of physical load 6). Persons, who are insufficiently trained 7). Persons, who suffer from rheumatism in inactive form 8). Persons, who have low physical capacity for work 9). Persons, who have a high physical capacity for work
<p>2. Name the groups of physical education of children of school age:</p> <ul style="list-style-type: none"> 1). Rehabilitation 2). Correction *3). Main 4). Auxiliary 5). Training *6). Preparatory 	<p>4. List the parts of the lesson on physical education:</p> <ul style="list-style-type: none"> 1). Main part (forming mental abilities) 2). Main part (forming motivation direction) *3). Introductory part 4). Auxiliary part *5). Preparatory part 6). General part *7). Main part (forming motor habits and active game)

7). Additional *8). Special 9). Reserve	*8). Final part 9). Special part
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<p>5. Indicate the main types of the physical education of children and teenagers:</p> <ol style="list-style-type: none"> 1). School classroom lessons *2). Main *3). Additional 4). School extracurricular *5). Optional 6). Extra-school *7). Independent 8). Individual 9). Collective 	<p>9. Indicate the main forms of physical education of children and teenagers:</p> <ol style="list-style-type: none"> 1). Main *2). School classroom lessons 3). Additional 4). Optional *5). School extracurricular 6). Independent 7). Individual *8). Extra-school 9). Collective
<p>6. What schoolchildren belong to the special group of physical education:</p> <ol style="list-style-type: none"> 1). Persons, who have no deviations of health state 2). Persons, who have insignificant deviations of health state under sufficient physical development 3). Persons, who have insignificant deviations of health state under insufficient physical development *4). Persons, who have deviations of health state of the constant nature, which require the restriction of the physical loading *5). Persons, who have deviations of health state of the temporality, which require the restriction of the physical loading 6). Persons, who are insufficiently trained 7). Persons, who suffer from rheumatism in inactive form 8). Persons, who have low physical capacity work 9). Persons, who have high physical capacity for work 	<p>10. What schoolchildren belong to the main group of physical education?</p> <ol style="list-style-type: none"> *1). Persons, who have no deviations in health state *2). Persons, who have insignificant deviations of health state under sufficient physical development 3). Persons, who have insignificant deviations of health state under insufficient physical development 4). Persons, who have deviations of health state of the constant nature, which require restriction of physical load 5). Persons, who have deviations of health state of the temporary character, which require restriction of physical load 6). Persons, who are insufficiently trained 7). Persons, who suffer from rheumatism in inactive form 8). Persons, who have a low physical capacity for work 9). Persons, who have a high physical capacity for work
<p>7. List hygienic principles of organization of labor education:</p> <ol style="list-style-type: none"> *1). Correspondence of the character of labor activity to age-sex features 2). Taking into account physical endurance 3). Taking into account the features of physical development 4). Uneven character of the increase of loads, which have training influence 5). Taking into account biological age *6). Gradual and step-like nature of the increase of loads, which have training influence 7). Provision of rehabilitation direction *8). Provision of favourable sanitary-hygenic conditions 9). Provision of high motor activity 	<p>11. List leading hygienic principles of organization of physical education of children and teenagers:</p> <ol style="list-style-type: none"> 1). Provision of professional direction *2). Presence of the optimum motor regimen 3). Using the method of the circular training 4). Provision of psycho-correction direction *5). Differentiated using of different types, forms and methods of physical education 6). Individual character of using different types, forms and methods of physical education 7). Provision of rehabilitation direction 8). Creation of favourable sanitary-hygenic conditions *9). Sistematic, gradual and complex character of studies
<p>8. Name the methods, which allow to determine the degree of hardening of the organism:</p> <ol style="list-style-type: none"> *1). Determination of the skin temperature 2). Determination of pulse frequency 3). Determination of blood pressure 4). Determination of subjective heat and cold general state *5). Determination of phagocyte activity of leukocytes 6). Determination of energy expenditures 7). Determination of motor activity level 	

3. Physiologic-hygienic bases of estimation of the lesson of physical training. Hygienic requirements to places of conducting lessons on physical training.
4. Medical control over the organization of lessons on physical training and hygienic aspects of medical provision of children and teenagers' physical training.
5. Physiologic-hygienic bases of hardening of the children and teenagers' organism. The basic kinds, principles and ways of the organization of hardening.
6. Hygienic principles of rational organization of labour and polytechnical training of children and teenagers.
7. Physiologic-hygienic bases of monitoring procedure for labour training of schoolchildren.
8. Hygienic requirements to the content, regimen and conditions of the organization and carrying out of labour training in conditions of different types of modern educational institutions.
9. Vocational counselling as a hygienic problem. Psycho-physiological aspects of professional self-determination. Professiography.
10. Modern system of vocational counselling, its functions and leading components.
11. Scientific bases of carrying out of medical-professional consultation. Concept about professional selection. Techniques of professional success forecasting.

Final test control – open base tests

Final grade

Teacher's signature _____

**Content module 6.
“Radiation hygiene”**

Subject 21: Regularities of radiation exposure formation of the person in places of residing, its hygienic assessment and ways of decrease. Radiation safety and antiradiation protection at objects with radiation-nuclear technologies.

Date _____ “___”20__;

Student’s name, year, group _____

Learning objective

1. Consolidate, extend and methodize knowledge about radiation hazard of population, and the personnel at work with radioactive nuclides and other sources of ionizing radiation.
2. Master methods and means of measurement of radiation levels and concentration of radioactive nuclides in the air, water, food substances, of radioactive pollution of the work surfaces, individual doses of irradiation of those working with sources of ionizing radiation, to assess their results.

Basics

You should know:

1. Qualitative and quantitative properties of ionizing radiation.
2. Sources of ionizing radiation, their occurrence in the environment.
3. Usage of radioactive nuclides and other sources of ionizing radiation in industry, medicine, scientific researches.
4. Biological effect of ionizing radiation and conditions it depends on.
5. Essence of radiation hazard at work with radioactive nuclides and other sources of ionizing radiation in different branches of industry.
6. Foundations of hygienic control of radiation safety and regulations of radiation safety and Primary sanitary regulations of work with active materials and other sources of ionizing radiation.
7. Classification of types and devices of radiation control, principles of work of those devices.

You should have the following skills:

1. To prepare of devices of radiation control for work, conduct measurements, read devices, assess results.

Independent Control of Classroom and SIW in test tasks	
<p>1. Indicate key rules of the safety precautions and personal hygiene during work with radioactive substances:</p> <ul style="list-style-type: none"> *1). It is forbidden to keep foods and personal things in a working premise 2). It is forbidden to work during time off 3). It is forbidden to carry out deactivation of clothes and equipment 4). It is necessary to use radioprotectors 5). It is forbidden to work more than 6 hours *6). It is forbidden to keep food in a working premise *7). It is forbidden to touch radioactive substances with hands *8). It is forbidden to bend over radioactive substances 	<p>3. Name measures of protection against internal irradiation:</p> <ul style="list-style-type: none"> *1). Hermetization of devices with radioactive substances 2). Increase in distance between sources of radiation and the worker 3). Reduction of working time with radioactive substances 4). Use of filters 5). Reduction of the number of radioactive devices *6). Performance of safety precautions regulations during work with radioactive substances *7). Duly deactivation of radioactive pollution *8). Elimination of direct contact to radioactive substances
<p>2. Name sources of artificial radiation:</p> <ul style="list-style-type: none"> *1). Sources of radiation which are used in science, technics and medicine: 2). Solar wind 3). Space rays 	<p>4. List methods of protection of the personnel from ionizing radiation:</p> <ul style="list-style-type: none"> *1). Protection by distance 2). Decontamination 3). Sanitary processing

<p>4). Magnetic storms 5). Laser radiation *6). Radioactive deposits *7). Atomic engineering 8). Breeze 9). Cyclones</p>	<p>4). Deactivation 5). Desintoxication *6). Protection by amount *7). Protection by time *8). Using screens *9). Chemical methods of protection</p>
<p>5. Name sources of natural radiation: *1). Internal irradiation of terrestrial origin 2). Radiation field 3). Magnetic storms 4). Cyclones 5). Solar wind *6). External irradiation of terrestrial origin *7). External irradiation of space origin *8). Internal irradiation of space origin 9). Helimeteotropic reactions</p>	<p>8. Give the classification of devices for carrying out radiation control: *1). Dosimetric devices (collective and individual) 2). Radiosignalling devices 3). Actinometers and piranometers 4). Catathermometers and psychrometers 5). Photointensimeters and photoexpositors *6). Radiometric devices *7). Spectrometer installations *8). Portable devices</p>
<p>6. Indicate the annual doze of irradiation of the population which is supposed by the concept of residing the population in territories with the increased levels of radioactive pollution as a result of accident at the Chernobyl atomic power station: *1). 1 mSv (0,1 Rem) 2). 0,1 mSv (0,01 Rem) 3). 10 mSv (1 Rem) 4). 100 mSv (10 Rem) 5). 10 R</p>	<p>9. Name the basic kinds of the radiation control: *1). Dosimetric 2). Radiological 3). Individual 4). Portable 5). Collective *6). Personal-dosimetric *7). Radiometric *8). Spectrometer 9). Total</p>
<p>7. Determine categories of persons who are subjected to irradiation, according to "Norms of Radiation Safety": *1). Category A - personnel who directly contacts to a source of radiation 2). Category B - average and junior personnel of radiological establishments 3). Category C - patients who undergo the course of radiotherapy 4). Category A - workers of nuclear stations 5). Category B- workers of atomic power stations *6). Category B - persons who do not work directly with a source of radiation, but can be subjected to irradiation in connection with conditions of residing or professional work *7). Category C - the rest of the population of the region 8). Category B – the members of the workers' families</p>	<p>10. Indicate the main groups of individual means of protection against ionizing radiation: *1). Isolating suits 2). Filters 3). Remote tools 4). Means of protection for organ of sight 5). Medicamentous radioprotectors *6). Means of protection for organs of respiration *7). Working shoes</p>

Transactions of student independent work

Kind of activity	Result of activity
1 _____ _____ _____ _____	
2 _____ _____ _____ _____	
3 _____ _____ _____ _____	

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Theoretical questions to the final module control:

1. Radiation hygiene as area of hygienic science and sanitary practice, its purpose and task.
2. Ionizing radiation which are used in industry, science, medicine, their sources.
3. Qualitative and quantitative characteristics of radionuclides as sources of ionizing radiation, units of their measurement.
4. Qualitative and quantitative characteristics of ionizing radiation. Kinds of dozes, units of their measurement. Doze rates.
5. Ionizing radiation as industrial harm, conditions which determine radiation danger during work with them.
6. Basic kinds of radiation injuries of the organism and conditions of their occurrence.
7. Acute and chronic radiation sickness, conditions of occurrence, stages of the course, the basic symptomatology.
8. Remote consequences of radiation damages, local damages.
9. Norms of radiation safety (NRSU-97) and the Basic sanitary rules (BSR-01) of work with radioactive substances and other sources of ionizing radiation, principles of hygienic normalization.
10. Methods and means of the radiation and medical control over work with sources of ionizing radiation.
11. Radiometric research methods which are applied in radiation hygiene.
12. Methods of determination of air radio-activity. Ways of sampling air for estimation of specific radio-activity aerosols and gases. Determination of specific activity of air concerning radon and its daughter products of disintegration.
13. Methods for determination of water radioactivity in reservoirs.
14. Methods for studying of radio-activity of foodstuff.
15. Research methods for pollution of working surfaces, the equipment, workers' hands and body. with radioactive substances
16. Methods of radiation control. Devices and installations for measurement of ionizing radiation. Individual radiation control.
17. Structure, tasks and functions of bodies and organizations of sanitary-epidemiological service from section « Radiation hygiene ».
18. The general tasks of sanitary-and-epidemiologic service in the field of radiation hygiene.
19. Preliminary and current sanitary supervision, their structure.
20. Features of work of experts of sanitary-and-epidemiologic station in territories exposed to radioactive pollution.
21. Documentation of sanitary-and-epidemiologic station from section " Radiation hygiene ": the general registration-accounting documentation, the documentation concerning preliminary sanitary supervision, the documentation concerning current sanitary supervision.

Final test control – open base tests

Final grade

Teacher's signature _____

Subject 22: Hygienic assessment of antiradiation protection of personnel and radiation safety of patients when radionuclides and other sources of ionizing radiation are used at medical-preventive establishments.

Date _____ “ ____ ”20 __;

Student's name, year, group _____

Learning objective

1. Extend, methodize and strengthen knowledge on radiation hazard for personnel and patients of patient care institutions during usage of radioactive nuclides and other sources of ionizing radiations in diagnostic and treatment purposes, on principles and ways of radiation protection.
2. Master methods and ways of radiation control of labour conditions of personnel and protection of patients in X-ray and radiological departments of hospitals.

Basics

You should know:

1. Ways of use of radioactive nuclides and other sources of ionizing radiations in hospitals with diagnostic and treatment purpose.
2. Peculiarities of biological effects of ionizing radiation.
3. Essence of radiation hazard during working with radionuclides and other sources of ionizing radiation.

You should have the following skills:

1. To measure and assess parameters which characterize radiation environment in work and adjacent premises and individual doses of personnel during work with radionuclides and other sources of ionizing radiation.
2. To carry out sanitary inspection of radiological and X-ray departments of hospitals.

Independent Control of Classroom and SIW in test tasks

<p>1. Antiradiation protection is:</p> <p>*1). Complex of measures directed at the prevention of harmful effect of ionizing radiation.</p> <p>2). Complex of measures directed at the prevention or decrease of harmful effect of laser radiation</p> <p>3). Complex of measures directed at the prevention or decrease of harmful action of ultra-violet and infra-red radiation</p> <p>4). Protection of interests</p> <p>5). Protection of views</p> <p>*6). Complex of measures directed at significant weakening of harmful effect of ionizing radiation</p> <p>*7). Complex of measures directed at prevention or decrease of harmful effect of ionizing radiation</p> <p>8). Protection of plants</p>	<p>3. In what hospital departments are roentgenotherapeutic installations used for treatment?</p> <p>*1). In departments of remote radiotherapy of oncologic dispensaries</p> <p>2). In any department</p> <p>3). It is desirable to use it in one of departments of a polyclinic</p> <p>4). Better in the casualty ward of the hospital</p> <p>5). Under the order of the head physician</p> <p>*6). In radiological departments of oncologic dispensaries</p> <p>*7). In premises of radiological departments which correspond to “Building Norms and Rules” and to “Sanitary Rules and Norms”</p>
<p>2. Who from employees of radiological department of oncologic dispensary belong to the category personnel:</p> <p>*1). Set of persons who by a sort of the professional work constantly or temporarily work directly with sources of ionizing radiation</p> <p>2). Employees of account department of oncologic dispensary</p> <p>3). Workers boiler-houses of oncologic dispensary</p> <p>4). Security guards of territory of oncologic dispensary</p> <p>5). Workers of the polyclinic's computer center</p> <p>*6). Doctors, nurses and support personnel which directly is in radiological departments for treatment by the open</p>	<p>4. In what stationary departments of hospitals is remote radiotherapy used?</p> <p>*1). In stationary departments of remote radiotherapy of oncologic dispensaries</p> <p>2). It is possible at any stationary department of the hospital</p> <p>3). It is possible at all hospitals except for children's ones</p> <p>4). It is better to use remote radiotherapy in polyclinics</p> <p>5). In rooms for electrocardiography</p> <p>*6). In specialized radiological departments of versatile hospitals</p>

and closed sources of ionizing radiation *7). Engineering-technical staff that provides operation and repair of equipment and systems with use of sources of ionizing radiation	*7). In corresponding specialized departments of oncological clinics or versatile hospitals under condition of their conformity to building and medical norms
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<p>5.Radiation hygiene studies:</p> <p>*1). Effect of radioactive substances on the human</p> <p>2). Dietary nutrition</p> <p>3). Problems of prophylaxis of food poisonings</p> <p>4). Problem of myopia prophylaxis</p> <p>5). Efficiency of ventilation of hospital premises</p> <p>*6). Effect of sources of ionizing radiation on the human organism</p> <p>*7). Effect of radioactive substances on people who work with them</p>	<p>8.What is radionuclids?</p> <p>*1). This is the general name of any radioactive atoms</p> <p>2). It is a parameter of sensitivity of radiometric devices</p> <p>3). It is the indicator of bacteriological air pollution</p> <p>4). It is a parameter of air freshness</p> <p>5). It is a parameter of milk falsification</p> <p>*6). It is radioactive atom with the certain mass number and charge (nuclear number)</p> <p>*7). It is any radioactive atom with certain nuclear number, mass number and charge</p>
<p>6.List the main premises of radiodiagnosis room:</p> <p>*1). Treatment room</p> <p>2). Room of psychological unloading</p> <p>3). Bathroom</p> <p>4). Reception</p> <p>*5). Cloak-room</p> <p>*6). Toilet for patients</p> <p>*7). Photolaboratory</p> <p>*8). Doctor's room</p> <p>*9). Control panel room</p>	<p>9.List the basic premises of radiological department:</p> <p>*1). Teeth roentgenography room</p> <p>2). Operating room</p> <p>3). Photoroentgenography room</p> <p>4). Cystography room</p> <p>5). Telecurie therapy room</p> <p>*6). Arteriovenography room</p> <p>*7). Cystoscopy room</p> <p>*8). Bronchoscopy room</p> <p>*9). Radiodiagnosis room</p>
<p>7.Ionizing radiation is:</p> <p>*1). Any radiation, which interaction with the medium results in formation of electric charges of different signs</p> <p>2). Any rays</p> <p>3). Artificial illumination</p> <p>4). Combined illumination</p> <p>5). Sun rays</p> <p>*6). Radiation, which interaction with medium results in ionization with formation of electric charges of different signs</p> <p>*7). The process of ionization and excitation of atoms and molecules which predetermine development of radiation injuries of biological structures, formation of electric charges of different signs</p>	<p>10.List the main premises of the department of telecurie therapy:</p> <p>*1). Room for control panel</p> <p>2). Pantry</p> <p>3). Room of rest</p> <p>4). Operating room</p> <p>5). Toilet</p> <p>*6). Treatment room</p> <p>*7). Doctor's room</p>

Transactions of student independent work

Kind of activity	Result of activity
1 _____ _____ _____ _____	
2 _____ _____ _____ _____	
3 _____ _____ _____	

Subject 23: Hygienic aspects of residing of population in territories with increased levels of radioactive pollution as a result of the Chernobyl accident. (SIW).

Date _____ “ ____ ”20 __;

Student's name, year, group _____

Learning objective

1. Master calculation methods for estimation of radiation danger and parameters of protection from external irradiation when working with sources of β -, γ - and X-radiation.

Basics

You should know:

1. Physical fundamentals of radiation.
2. Action of ionizing radiation upon living organisms.
3. Methods of antiradiation protection, based upon physical laws of weakening of ionizing radiation.
4. Fundamentals of legislation on radiation hygiene.

You should have the following skills:

1. Carry out mathematical calculations, using calculators or personal computers.
2. Use normative materials.

Independent Control of Classroom and SIW in test tasks	
<p>1. What ionizing radiation is characterized by the greatest ionizing ability?</p> <p>*1). α- radiation 2). β-radiation 3). γ-radiation 4). Neutron radiation 5). X-ray radiation 6). Stream of electrons 7). Stream of positrons</p>	<p>5. What units are used in radiation hygiene for measurement of equivalent doze:</p> <p>*1). Ber 2). Beckerel 3). Mg-eq. radium 4). Roentgen/s 5). Culon/kg *6). Sivert 7). Curie</p>
<p>2. What units are used in radiation hygiene for measurement of exposition doze:</p> <p>*1). Roentgen 2). Beckerel 3). Mg-eq. radium 4). Curie 5). Grey/s 6). Sivert 7). Culon/kg</p>	<p>6. What units are used in radiation hygiene for measurement of density of stream of particles:</p> <p>*1). Part. in sm^2/s 2). Beckerel 3). Curie 4). Culon/kg 5). Rad/s *6). Beckerel/sm^2 7). Sivert/s</p>
<p>3. Name units which are used in radiating hygiene for measurement of the absorbed doze:</p> <p>*1). Rad 2). Беккерель 3). Mg-eq. radium 4). Roentgen/s 5). Culon/kg *6). Grey 7). Sivert</p>	<p>7. Name the basic kinds of somatic radiation lesions:</p> <p>*1). Chronic radiation sickness 2). Dominant genic mutations 3). Cataract 4). Diseases of blood 5). Recessive genic mutations *6). Acute radiation sickness *7). Local radiation lesions</p>
<p>4. Name the basic kinds of radiation lesions:</p> <p>*1). Somatic 2). Functional 3). Endocellular 4). Morphological 5). Ionizing</p>	<p>8. Name the basic kinds of somatic-stochastic radiation lesions:</p> <p>*1). Reduction of duration of life 2). Anemias 3). Myopia 4). Marasmus</p>

*6). Somatic-stochastic *7). Genetic 8). Toxic 9). Desadaptation	5). Hypertonic illness *6). Leukoses *7). Neoplasms of different organs 8). Gastritis and gastroduodenitis
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9. What is dose limit per year for population of B category, Sv? 1). 1 mSv *2). 2 mSv 3). 10 mSv 4). 5 mSv 5). 15 mSv 6). 30 mSv 7). 100 mSv 8). 0,5 mSv 9). 250 mSv	13. What is dose limit per year for population of C category, Sv? 1). 0,5 mSv *2). 1 mSv 3). 0,05 mSv 4). 10 mSv 5). 0,025 mSv 6). 0,2 mSv 7). 0,15 mSv 8). 0,005 mSv 9). 0,01 mSv
10. Name the basic groups of "critical" organs during irradiation depending on radiosensitivity: *1). I group - all body, gonads, red bone marrow 2). II group - shins, the upper extremities, gastrointestinal tract 3). III group - skin, cartilage tissue 4). I group - a red bone brain 5). II group - muscles, internal bodies *6). II group - thyroid gland, muscular and fatty tissue, kidneys, GIT organs *7). III group – skin, bone tissue, palms and forearms, feet and shins	14. List hygienic principles of antiradiation protection: *1). Preliminary and current sanitary supervision 2). Definition of character of distribution of energy of radiation in time 3). Definition of natural radiation background 4). Studying of climate-geographical conditions of the district 5). Inservice training of the personnel *6). Sanitary education *7). Hygienic normalization *8). Radiation control *9). Medical control
11. List materials which are used for manufacturing protective screens during work with sources of β - radiation: *1). Plexiglas 2). Barite 3). Lead glass 4). Barito-concrete 5). Lead *6). Plastic 7). Concrete *8). Aluminium 9). Rubber	15. List materials which are used for manufacturing protective screens during work with sources of γ - radiation: 1). Plexiglas 2). Barite 3). Lead glass *4). Cast iron *5). Lead 6). Plastic *7). Concrete 8). Aluminium 9). Rubber
12. Name the basic kinds of genetic radiation lesions: *1). Dominant genic mutations 2). Acute radiation sickness 3). Diseases of blood 4). Local radiation lesions 5). Reduction of duration of life *6). Chromosomal aberrations *7). Recessive genic mutations 8). Tumours of different organs and systems	

Solve situational task No.

Stages of solution of the situational task	Results
1. Give hygienic estimation of the situation	
2. Determine risk factors for health	

3. Make prognosis of consequences of risk factors on health	
4. Elaborate and substantiate hygienic, preventive, health-improving measures	
5. Indicate normative provision of the specialist's activity (documents)	

Theoretical questions to the final module control:

1. Ionizing radiation as industrial harm for the personnel of medical establishments.
2. Ionizing radiation as a risk factor for patients of medical establishments when carrying out roentgenologic-radiologic diagnostic and medical procedures.
3. Structure of radiological department of the hospital. Features of radiation danger and antiradiation protection in each structural sub-unit.
4. Principles and means of antiradiation protection.
5. Kinds of antiradiation protection.
6. Characteristic of radiation danger in the X-ray diagnostic room and conditions on which it depends. Requirements to the X-ray unit planning.
7. Rules of radiation safety and privileges for the personnel of medical establishments and patients.
8. Ways of decrease of radiation exposure of the personnel and patients of medical establishments. Sanitary-engineering equipment of roentgenological and radiological departments.
9. Methods of collection and neutralization of radioactive waste during work with the open sources of ionizing radiation.
10. Methods and means of sanitary and radiation control during work with sources of ionizing radiation in medical institutions.
11. Ways of pollution of foods with radionuclides. The role of foods in the increase of internal irradiation of the population.
12. Principles of estimation of results when measuring radio-activity of environmental objects and foodstuff.
13. Principles and criteria of division of territories subjected to radioactive pollution as a result of Chernobyl accident.
14. Regulations of radiation safety.

Final test control – open base tests

Final grade

Teacher's signature _____

Subject 24: Organization of hygienic provision during elimination of extreme situation consequences. Features in temporary accommodation of the affected population and rescue formations.

Date _____ “___”20__;

Student’s name, year, group _____

Learning objective

1. Get familiar with types and characteristic of field location rescue units in the emergency situations.
2. Learn the units’ filed location hygienic requirements, duties of the officials of the units for their provision.
3. Master methods of medical control of unit personnel (and affected population) location during emergencies in the field basic and extempore accommodation, dug-outs, shelters and other constructions deepened into the ground.

Basics

You should know:

1. Hygienic requirements for the areas, where units will be located and to the planning of these areas.
2. Hygienic requirements for sanitary improvement of land areas for location (water supply, collection, sewage disposal, solid and liquid waste treatment etc.).
3. Microclimate and air chemical compound peculiarities of the field habitation and constructions, deepened into the ground.

You should have the following skills:

1. To consider design materials (situational plan, general layout, planning schemes and sectional views of premises etc.), to make up expert’s decisions based on these materials.
2. To perform sanitary inspection of the stationing area, premises and services of different function, measure microclimate, air chemicals pollution parameters in such premises.
3. To draw up conclusions and make recommendations based on examination results of design materials or locations.

Independent Control of Classroom and SIW in test tasks	
<p>1. Name norms of volume of a military refuge of field type (m³ per 1 fighter):</p> <ol style="list-style-type: none"> 1). 10-36 *2). 2,5-3,0 3). 10-15 4). 4-8 5). 1-2 6). 8-10 	<p>4. Name maximum permissible concentration of CO₂ (%) in air of a military refuge of field type during its exploitation in the filter-ventilation mode:</p> <ol style="list-style-type: none"> 1). 0,1 2). 0,5 3). 1,0 *4). 2,0 5). 3,0 6). 10,0
<p>2. Name kinds of temporary accommodation of armies in field conditions:</p> <ol style="list-style-type: none"> *1) Camp accommodation 2) In barracks 3) In the wood *4) In flats *5) On fighting positions *6) Mixed 7) Same 8) In fortification constructions *9) In the educational centres 	<p>5. Name systems of active ventilation in closed fortification constructions:</p> <ol style="list-style-type: none"> *1). Filter-ventilation complexes 2). Window leaves 3). Heaters of air 4). Dampeners of air *5). Installations for air regeneration 6). Cooling installations 7). Transoms 8). Damp cleaning 9). Airing
<p>3. Give classification of fortification constructions:</p> <ol style="list-style-type: none"> *1). By use 2). By capacity *3). By the degree of security 	<p>6. Name kinds of tight refuges:</p> <ol style="list-style-type: none"> *1). Non-ventilated 2). Local 3). Underground

<p>*4). By destination 5). By volume 6). By ventilation 7). By the degree of accomplishment 8). By the area</p>	<p>*4). With air regeneration 5). Ground 6). Open 7). Closed 8). Special</p>
<p>7. Name maximum permissible concentration of carbonic gas (%) in air of special refuges which work in full isolation mode: 1). 6,0 2). 1,0 3). 1,5 *4). 2,0 5). 0,5 6). 0,4 7). 10,0 8). 12,0 9). 0,25</p>	<p>13. List the basic mobile and collapsible premises for military, civil formations and builders outside settlement: *1). The cylindrical unified blocks (CUBs) on wheels 2). Fortification constructions 3). Dugouts *4). Pneumoframe (frame-inflatable) premises 5). The closed protective constructions 6). Pneumoframe tent *7). Sliding container premises 8). The cylindrical sliding block (CSB) *9). Extensible buildings</p>
<p>8. Name norms of the area of a military refuge of field type (m² per 1 fighter): 1). 4-5 2). 3-4 3). 2-3 *4). 0,8-2,0 5). 0,5-0,8 6). 0,5-1,0 7). 10 8). 1,5</p>	<p>14. Name typical premises for camp accommodation of staff of military and civil formations: 1). Stationary tent 2). Fortification tent *3). Camp tent 4). Mobile tent 5). Groundsheet *6). Barrack-type tent 7). Military-civil tent (MCT) *8). Hospital tent</p>
<p>9. List the basic premises of a refuge: *1). Premise for accommodation of people 2). Hairdressing salon *3). Premise for the filter-ventilating unit *4). Toilet premises 5). Room of rest *6). Premise for stocks of water and foodstuffs 7). A dining room of the closed type *8). Entrances: the basic, spare, emergency manhole 9). Room of psychological rehabilitation</p>	<p>15. Indicate the basic types of perspective field habitation: 1). The dugout *2). The cylindrical universal block 3). Tent *4). The modular-panelboard house *5). The arch house *6). The frame-panelboard small house *7). Integral-concrete- panelboard house 8). Radial house *9). Frame house with an awning</p>
<p>10. Give classification of closed fortification constructions by destination: *1). Long-term special refuges 2). Tents *3). Military 4). Military unspecialised refuges 5). Short-term specialised refuges *6). Refuges of civil defense 7). Average-term specialised refuges 8). Dugouts 9). Premises of civil protection</p>	<p>16. List the main harm in the closed protective constructions: *1). Physical factors 2). Radiation pollution *3). Chemical factors 4). Meteorological factors 5). Ionising radiation *6). Psycho-emotional pressure 7). Radiating heat *8). Hypodynamia 9). High velocity of air movement</p>
<p>11. Give general classification of refuges: *1). By character (ground, underground) 2). By volume (big, average, small) *3). By the degree of security (hermetic, non-hermetic) *4). By tightness (non-ventilated, with air regeneration) 5). By the condition of security (non-ventilated, ventilated) 6). By character of structure (external, internal) 7). By tightness (block, cylindrical) 8). By the area (big, average, small)</p>	<p>17. List defensive fortification constructions intended for accommodation of military and civil formations: *1). Fiery - closed and open 2). Civil *3). Command 4). Closed protective constructions 5). Stationary protective constructions *6). Communication constructions 7). Military constructions *8). Actually protective</p>
<p>12. Name classification of refuges by the way of their construction: 1). Underwater type</p>	<p>18. List modes of ventilation of a refuge: *1). Mode 1 - pure ventilation 2). Mode 2 - active ventilation</p>

*2). Ditch type 3). Trench type *4). Mine type 5). Tent type 6). Bulk type *7). Cave type	3). Mode 3 - partial ventilation *4). Mode 2 - filter-ventilation 5). Mode 3 - mixed ventilation 6). Mode 1 - passive ventilation *7). Mode 3 - full isolation 8). Mode 1 - partial ventilation
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Transactions of student independent work

Kind of activity	Result of activity
1 _____ _____ _____ _____	
2 _____ _____ _____ _____	
3 _____ _____ _____ _____	
4 _____ _____ _____ _____	

Theoretical questions to the final module control:

1. Definition and classifications of extreme situations.
2. Natural cataclysms, their influence on sanitary-hygienic conditions for temporary compact residing the population and working conditions of military, civil formations - participants of liquidation of accidents.
3. Technogenic accidents, their influence on sanitary-hygienic conditions of temporary compact residing of the population and working conditions of rescue formations.

4. Social cataclysms, their influence on sanitary-hygienic conditions of temporary compact residing of the population, military formations and civil defence formations.
5. International and national organizational structures on liquidation and medical provision of consequences of natural, technogenic, social disasters.
6. Organizational-regular structure and laboratory-technical equipping medical service of armies on sanitary-hygienic and anti-epidemic provision of the staff in field conditions. Field laboratory complete sets and devices for hygienic researches.
7. Sanitary-hygienic measures on the organization of accommodation of people in conditions of accidents. Hygienic characteristic of temporary habitations in conditions of extreme situations.
8. Hygienic requirements to temporary compact accommodation of military, civil formations, rescue parties and the suffered population during extreme situations depending on climatic-weather and seasonal conditions.
9. Hygienic characteristic of camp tents, wireframe-inflatable, collapsible, container and other field habitations, adverse factors when residing in them and their prophylaxis.
10. Sanitary-hygienic features of accommodation of military, civil formations and the suffered population in underground constructions-dugouts, storehouses.
11. Rules of equipping and exploitation of underground fortification constructions - dugouts, not ventilated storehouses, mode of ventilation of storehouses. Admissible CO₂ concentrations for them.

Final test control – open base tests

Final grade

Teacher's signature _____

Subject 25: Organization of sanitary supervision over nutrition and water supply in conditions of catastrophes.

Date _____ “ ____ ”20 __;

Student's name, year, group _____

Learning objective

1. Describe physiological and hygienic as well as moral and psychological importance of rational food for the units in field conditions during elimination of consequences of emergencies.

2. Acquire the technique of medical control of the food adequacy and safety for the units under field conditions during emergencies.

Basics

You should know:

1. Concept of “rational nutrition”, conditions of its provision.

2. Health disorders and diseases, which may occur under non-observance of any of the conditions of rational nutrition.

3. Methods of prophylaxis of alimentary, infectious diseases, helminthiasis, food poisonings, morbid affections through food by poisonous substances (PS), radioactive substances (RS), bacterial substances (BS).

You should have the following skills:

1. To assess ration for personnel of the units using different methods:

- by calculation methods, according to apportionment of foodstuffs (menu-schedule);

- by means of study of foodstuff assortment for a daily ration, foodstuff storage conditions, food cooking and realization;

- by method of check-weighing (by weighing of foodstuffs when loading them into a cauldron, by weighing of ready meals);

- by means of study of food state of human organism of personnel of the units (according to somatoscopic, somatometric, physiometric, biochemical, clinical indices);

- by express method (using devices) and by means of laboratory analysis of foodstuffs and ready meals.

2. To organize and carry out medical control of adequacy of food for personnel of the units (and for affected population) and to take necessary prophylactic measures to provide adequacy of food.

. To take medical measures in case of the beginning of alimentary, infectious intestinal diseases, helminthiasis, food poisonings, morbid affections through food by strong effect poisonous substances (SEPS), radioactive substances (RS); to investigate causes of their beginning, to take preventive measures. 3

Independent Control of Classroom and SIW in test tasks

<p>1. Name products in the army ration which are defined as essential:</p> <p>*1). Meat 2). Cottage cheese *3). Fish *4). Butter 5). Combined fat *6). Vegetable oil *7). Vegetables *8). Eggs, milk 9). Milk, grouts</p>	<p>3. Name the basic carriers of vitamin C in the set of vegetables of the army ration:</p> <p>1). Tomato-paste *2). Potatoes *3). Onions *4). Cabbage 5). Carrots 6). Grouts 7). Macaroni 8). Apples 9). Dried fruits</p>
<p>2 Name parameters of adequacy of nutrition of the staff:</p> <p>1). Presence of necessary food stuffs *2). The food status 3). Presence of diseases of cardiovascular system 4). Presence of kidney diseases</p>	<p>4. Indicate, at what values of dark adaptation period (in seconds) which is determined with help of adaptometer, it is possible to confirm presence of hypovitaminosis A in the army staff:</p> <p>*1). 60 2). 50</p>

5). Daily energy expenditures	3). 40
*6). Presence of alimentary diseases	4). 30
7). Regimen of nutrition	5). 20
*8). Conformity of daily energy expenditures to caloric content of a daily diet	6). 5
9). Character of appetite	7). 90
	8). 25
	9). 120

<p>5. List the equipment of the battalion food point (BFP):</p> <ul style="list-style-type: none"> *1). 4 mobile kitchens 2). Packing of tablets "Pantocid" 3). Distillator *4). Boiler PNK-2 5). The complete set of army rations 6). 2 cars *7). 4 cars *8). Frame tent 9). 2 mobile kitchens 	<p>10. Name caloric content of " survival ration":</p> <ul style="list-style-type: none"> 1). 80 kcal 2). 1200 kcal *3). 800-1000 kcal 4). 850-950 kcal 5). 1000-1200 kcal 6). 100 kcal 7). 1100-1500 kcal 8). 80-100 kcal 9). 1000-2000 kcal
<p>6. List features of nutrition of armies in field conditions:</p> <ul style="list-style-type: none"> *1). Probable violations of the regimen of nutrition *2). Wide use of canned food and concentrates 3). Absence of fish canned food *4). Use of the trophy foodstuffs 5). Restriction of bread *6). An opportunity of occurrence of food poisonings 7). Insufficient content of salt in food *8). The problem of catering services in especially difficult conditions *9). Probable quantitative insufficiency of nutrition 	<p>11. Indicate kinds of catering services of armies in field conditions:</p> <ul style="list-style-type: none"> *1). Boiler nutrition 2). Nutrition in refuges *3). Individually-group nutrition 4). Isolated nutrition *5). Mixed nutrition 6). Public nutrition 7). Individual nutrition 8). Nutrition in field kitchens 9). Nutrition on fighting positions
<p>7. List the violations of health connected with full value and a poor quality of nutrition in conditions of extreme situations:</p> <ul style="list-style-type: none"> *1). The diseases connected with quantitative and qualitative undereating *2). The diseases connected with overeating *3). The diseases connected with violation of regimen of nutrition 4). The diseases connected with psychological loading *5). The diseases connected with violation of culinary processing of products 6). Skin illnesses *7). Food poisonings *8). Intestinal bacterial, viral, zoonosis infections *9). Lesion with the products polluted with radioactive substances and poisonous gases 	<p>12. List indirect methods of determination of staff provision with vitamins A and C:</p> <ul style="list-style-type: none"> *1). Determination of permeability of skin capillaries (Nesterov's device) 2). Determination of the contents of vitamin C in urine 3). Determination of vitamin C urinary excretion *4). Determination of dark adaptation time (Kravkov-Vishnevskiy ward) *5). Lingual test 6). Determination of vitamin A in blood 7). Thimol test 8). Anomaloscopy 9). Determination of vitamin A in urine
<p>8. Name objects of medico-sanitary supervision of nutrition of the staff of formations:</p> <ul style="list-style-type: none"> *1). Points of nutrition of rescue crews 2). Mobile medical chemical laboratory *3). Battalion points of nutrition in armies *4). Stationary and mobile food warehouses *5). The stationary and mobile food enterprises *6). Transport for transportation of the foodstuffs *7). Points of nutrition of stages of medical evacuation *8). Health state of persons which serve food objects 9). Medical techniques of points of nutrition 	<p>13. List methods of estimation of nutrition of staff of formations:</p> <ul style="list-style-type: none"> *1). Calculation under the menu-allocation *2). Studying of a set of products in a daily diet *3). Control-weight 4). Statistical *5). Studying of the organism's food status 6). Analytical method *7). Express and laboratory analyses of foodstuffs and ready food 8). Laboratory analysis of meat
<p>9. List the tasks of medical service in prevention of A and C vitamin deficiency of staff:</p> <ul style="list-style-type: none"> *1). Observance of rules of vegetables and fruit storage 2). Medical control over the weight output of ready dishes *3). Observance of rules of culinary processing of foods *4). Use of early kitchen garden greens 	<p>14. Offer optimum variants of catering services of armies in field conditions during application of the weapon of mass defeat:</p> <ul style="list-style-type: none"> 1). Provision with hot food on battalion points of nutrition 2). Group nutrition with use of food concentrates

Theoretical questions to the final module control:

1. Rational Nutrition, conditions of its provision. Physiological norms of Nutrition as a basis of its full value and adequacy to needs of the organism.
2. Organization of Nutrition of military and civil formations in field conditions during extreme situations and during war, its form. Battalion points of Nutrition, types of field kitchens, other means.
3. Military rations, rations of formations of the civil defence, their hygienic characteristic.
4. Nutrition in conditions of contamination of district and objects with hard poisonous substances, radioactive substances, bacterial substances in conditions of application of the weapon of mass destruction.
5. Food concentrates, dry rations, diets of survival as means of Nutrition for the staff of formations during acute period of accidents, operations, other extreme situations.
6. Duties of medical service, methods and means of the hygienic control over full value and safety of Nutrition of staff of formations and the suffered population in field conditions during extreme situations, in conditions of operations.
7. Methods for estimation of the organism food status.
8. Health disorders, diseases, connected with quantitative and qualitative inadequacy of a daily diet, with violation of regimen of Nutrition, with variance of quality of foods and dishes to fermental resources of digestive system.
9. Infectious diseases with the alimentary mechanism of transfer, helminthoses, food poisonings, methods of their investigation and prophylaxis in field conditions during extreme situations and during war.
10. Hygienic characteristic of the basic foodstuff, canned food, food concentrates.
11. Parameters which characterize freshness, commercial qualities of foodstuff, signs of spoiling, epidemiological and toxicological danger.
12. Sources, factors and mechanisms which determine contamination of products with poisoning, radioactive substances and bacterial substances.
13. Elements of medical service of formations which duties include carrying out of medical examination of the foodstuffs.
14. Organic means (laboratory complete sets and devices), intended for carrying out of medical examination of the foodstuffs in field conditions.
15. Stages of medical examination of the foodstuffs and probable variants of expert conclusions at different stages of this examination.

Final test control – open base tests

Final grade

Teacher's signature _____

Subject 26: Organization and carrying out of sanitary supervision over working conditions of disaster fighters in extreme situations. (SIW).

Date _____ “ ____ ”20 __;

Student’s name, year, group _____

Learning objective

1. Describe peculiarities of working conditions of personnel of the civil rescue units taking part in elimination of consequences of emergency situations and catastrophes.
2. Acquire familiarity with means and technique of medical service of the rescue and civil units for hygienic provision of working conditions of the rescuers who eliminate consequences of catastrophes.
3. Acquire methods and devices of medical inspection of the level of health and efficiency of the rescuers, who eliminate consequences of catastrophes.

Basics

You should know:

1. Importance of hygienic provision of working conditions of the rescue and civil units during elimination of consequences of emergency situations.
2. Characteristic features of working conditions during elimination of consequences of emergency situations depending on their origin.
3. Dangerous and hazardous factors, which accompany emergency situations, influence of these factors on the health level and working capacity of the rescuers who eliminate consequences of catastrophes and of suffered population.
4. Clinical and psychophysiologic methods of evaluation of working capacity, fatigue, health level of the rescuers who eliminate consequences of catastrophes.

You should have the following skills:

1. To reveal dangerous and hazardous factors that occur during the emergency situations of different type and may influence on health level and working capacity of the participants of elimination of consequences of these emergency situations .
2. To reveal clinical and psychophysiologic signs of decrease of working capacity, health impairment of the participants of elimination of consequences of catastrophes.
3. To instruct personnel in methods and means of their health and working capacity maintenance during elimination of consequences of catastrophes, in application of personal protective equipment (such as respirators, gas masks, protective clothing), dopes, psychotropic agents and etc.
4. To master the available and appropriate under the conditions of catastrophes methods and devices of medical control of hardness and intensity of performed work, psychophysiologic, physical state of the rescuers who eliminate consequences of catastrophes and affected population.

Independent Control of Classroom and SIW in test tasks	
<p>1. What are components of filtering gas mask:</p> <ul style="list-style-type: none"> *1). An obverse part *2). Filtering-absorbing box 3). Reducer *4). Walve box *5). Tubes *6). Bag of a gas mask 7). Absorbing block 8). Filtering block 9). Final block 	<p>3. What maximal time can a rescuer be in insulating clothing:</p> <ul style="list-style-type: none"> 1). 3 hours 2). 4 hours *3). 5 hours 4). 1 hour 5). 6 hours 6). 7 hours 7). 0,5 hour 8). 9 hours 9). 1,5 hours
<p>2. What means of protection are used for skin protection:</p> <ul style="list-style-type: none"> 1). Gas masks 2). Protective spectacles 	<p>4. Organic medical means of individual protection:</p> <ul style="list-style-type: none"> *1). The first-aid individual set IS-2 *2). The universal first-aid set household for the population

<ul style="list-style-type: none"> *3). Protective overalls 4). Respirators *5). Protective overalls and footwear *6). Protective gloves *7). Gummed shoe covers *8). Gummed raincoat with a hood *9). Protective helmet 	<ul style="list-style-type: none"> *3). Individual anti-gas packages ИПП-8, ИПП-10 *4). Package dressing medical ППМ 5). Filtering gas masks 6). Protective overalls 7). Radioprotective first-aid set 8). Respirator 9). Protective overalls and footwear
<p>5. What groups of preparations belong to medical means of protection:</p> <ul style="list-style-type: none"> *1). Radioprotective *2). Anesthetizing *3). Antibacterial 4). Antiallergic 5). Antihypertensive *6). Medical compoundings from action of poison gases *7). Dressing means 8). Antiviral 9). Neuroleptics 	<p>10. What types of gas masks by the mechanism of protective action are used by rescuers who eliminate consequences of extreme situations:</p> <ul style="list-style-type: none"> *1). Isolating 2). Restrictive *3). Filtering 4). The general *5). Hose 6). Concentrating 7). Chemical 8). Physical 9). Technological
<p>6. Name means of protection for respiratory organs and mucous membranes:</p> <ul style="list-style-type: none"> *1). Gas masks *2). Protective spectacles 3). Protective overalls *4). Respirators 5). Protective overalls and special footwear 6). Protective gloves 7). Gummed shoe covers 8). Gummed raincoat with a hood 9). Protective helmet 	<p>10. What is a principle of operation of vapours and gases absorption in filtering gas masks:</p> <ul style="list-style-type: none"> *1). Adsorption *2). Chemosorption *3). Catalysis 4). Filtration 5). Convection 6). Absorption 7). Neutralisation 8). Decontamination 9). Isolation
<p>7. What preparations are used as radioprotective ones:</p> <ul style="list-style-type: none"> *1). Radioprotectors *2). Compexones *3). Adaptogens *4). Adsorbents *5). Antihemorrhagic *6). CNS stimulators 7). Antiallergic 8). Anesthetizing 9). Antibacterial 	<p>11. What is the principle of action for absorption of smokes and aerosols in filtering gas masks:</p> <ul style="list-style-type: none"> 1). Adsorption 2). Chemosorption 3). Catalysis *4). Filtration 5). Convection 6). Absorption 7). Neutralization 8). Decontamination 9). Isolation
<p>8. What are the features of work of rescuers who eliminate consequences in the centre of extreme situations:</p> <ul style="list-style-type: none"> *1). Physical activities *2). Increase of traumatism *3). Insufficient provision with overalls and means of individual protection *4). Psychological overload *5). Absence of conditions of high-grade rest *6). Poor quality of water supply *7). Decrease {reduction} in quality and availability of nutrition *8). Complication of the arrangement of people 9). Satisfactory parameters of microclimate 	<p>12. What individual means of body protection can be used during liquidation of consequences of accidents and other extreme situations:</p> <ul style="list-style-type: none"> *1). Troop protective complete set *2). Protective overalls for work with rocket fuel *3). Protective overalls of armoured troops 4). Protective overalls of air armies *5). Film protective overalls *6). Shoe covers, rubber boots, gloves *7). Protective overalls and footwear intended for use in different areas of industrial production *8). Protective complete sets of firemen *9). Protective complete sets of skin-divers
<p>9. What method is used to struggle against overheating of the organism of the person who works in an isolating protective suit:</p> <ul style="list-style-type: none"> 1). Heating screen 2). Cooling screen 3). Use of special clothes 	

8. Features of regimen and working conditions, its weight, intensity, duration and tensity during liquidation of consequences of accidents and other extreme situations, methods of their revealing and estimation in conditions of accidents.

Final test control – open base tests

Final grade

Teacher's signature _____

Literature

Content module 1. “General aspects of hygiene and ecology”

Subject 1

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Subject 7

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Content module 4. “Occupational hygiene”

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Content module 5. “Paediatric hygiene”

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