ЛД-16 ИН

Federal State Budgetary Educational Institution of Higher Education
«North-Ossetia State Medical Academy»
of the Ministry of Healthcare of the Russian Federation

Department of General Hygiene and Physical Culture

APPROVED BY
Protocol of the meeting of the
Central Coordination Training
and Methodological Council
from March 22, 2022 No. 4

EVALUATION FUND

on discipline **HYGIENE**

the main professional educational program of higher education –
specialty program in the specialty 31.05.01 General Medicine,
approved in March 30, 2022

For students 2-3 courses

on the specialty "31.05.01 General Medicine" (the educational program
is partially implemented in English)

Considered and approved at the meeting of the department
of March 16, 2022, Protocol №.8

Head of the department
Doctor of Medicine, Professor _____ A.R. Kusova

Vladikavkaz 2022

STRUCTURE OF FOS

1. Title page
2. The structure of the EF
3. Review of EF
4. Passport of valuation means
5. *Set of evaluation tools:*
   - ✓ questions for the module,
   - ✓ test tasks
   - ✓ situational tasks
   - ✓ examination tickets,

Федеральное государственное бюджетное образовательное учреждение высшего образования «Северо-Осетинская государственная медицинская академия» Министерства здравоохранения Российской Федерации

РЕЦЕНЗИЯ
на фонд оценочных средств

по дисциплине Гигиена
для студентов 2-3 курсов
по специальности 31.05.01 Лечебное дело **(образовательная программа частично реализуемая на английском языке).**

Фонд оценочных средств составлен на кафедре общей гигиены и физической культуры на основании рабочей программы учебной дисциплины и соответствует требованиям ФГОС ВО 3+ по специальности 31.05.01 Лечебное дело (образовательная программа, частично реализуемая на английском языке).

Фонд оценочных средств включает в себя банк тестовых заданий, ситуационные задачи, экзаменационные билеты.

Банк тестовых заданий включает в себя следующие элементы: тестовые задания, варианты тестовых заданий, шаблоны ответов. Все задания соответствуют рабочей программе дисциплины Гигиена и охватывают все ее разделы. Количество тестовых заданий составляет 250. Сложность заданий варьируется. Количество заданий по каждому разделу дисциплины достаточно для проведения контроля знаний и исключает многократное повторение одного и того же вопроса в различных вариантах. Банк содержит ответы ко всем тестовым заданиям и задачам.

Количество экзаменационных билетов составляет 35, что достаточно для проведения экзамена и исключает неоднократное использование одного и того же билета во время экзамена в одной академической группе в один день. Экзаменационные билеты выполнены на бланках единого образца по стандартной форме, на бумаге одного цвета и качества. Экзаменационный билет включает в себя 3 вопроса. Формулировки вопросов совпадают с формулировками перечня вопросов, выносимых на экзамен. Содержание вопросов одного билета относится к различным разделам программы, позволяющее более полно охватить материал учебной дисциплины.

Представленные ситуационные задачи в количестве 32 позволяют студентам лучше освоить практическую составляющую дисциплины.

Замечаний к рецензируемому фонду оценочных средств нет. В целом, фонд оценочных средств по дисциплине Гигиена способствует качественной оценке уровня владения обучающимися соответствующими профессиональными компетенциями.

Рецензируемый фонд оценочных средств по дисциплине «Гигиена» может быть рекомендован к использованию для промежуточной аттестации студентов в IV-Vсеместрах лечебного факультета.

Рецензент:
Председатель ЦУМК естественнонаучных и математических дисциплин с подкомиссией по экспертизе оценочных средств, доцент Боциева Н.И.

ОТДЕЛ КАДРОВ И ДОКУМЕНТООБОРОТА
ФГБОУ ВО СОГМА Минздрава России

Passport of the Fund for Evaluation Means for Discipline

HYGIENE

№п/п	The name of the controlled section (topic) of the discipline / module	Code of competence (stage) to be formed	Nameofvaluation means
1	2	3	4
Type ofcontrol	**Subtotal**		
1.	The environment, its effect on the body: a) air hygiene b) hygiene of water	OK-4 PK-1 PK-15 PK-16	Test tasks, situational tasks, examination tickets
2.	Nutrition as a factor in maintaining and promoting health	PK-1 PK-15 PK-16	Test tasks, situational tasks, examination tickets
3.	Labor as an integral part of human existence and its positive and negative impact on health	PK-1 PK-15 PK-16	Test tasks, situational tasks, examination tickets
4.	Hygiene of treatment and prophylactic institutions	PK-1 PK-15 PK-16	Test tasks, situational tasks, examination tickets
5.	Hygienic basis for ensuring normal development and high level of health of children	PK-1 PK-15 PK-16	Test tasks, situational tasks, examination tickets

QUESTIONS FOR ENTRANCE CONTROL OF STUDENTS' KNOWLEDGE LEVEL

1. The chemical composition of the air.
2. What is the biosphere?
3. In what units is an atmospheric pressure, temperature, humidity measured?
4. What is the climate?
5. What is adaptation?
6. List the physical properties of an air?
7. Why is it easier to breathe after a rain?
8. The value of water for the human body.
9. What diseases are waterborne?
10. Why can't sea water be used for drinking purposes?
11. What is a the basal exchange? And how is it defined?
12. The methods for determining energy consumption. Units of measurement of energy consumption.
13. The value of proteins is...
14. Importance of the fats...
15. Importance of carbohydrates...
16. Name of the fat- and water-soluble vitamins.
17. What is the difference between communicable and no communicable diseases?
18. Name of the B vitamins.
19. Importance of the vitamin D.
20. Importance of the vitamin C.
21. List macro- and microelements.
22. The iodine deficiency leads to...
23. The insufficiency of Ca leads to...
24. List the opportunistic pathogens.
25. What is botulism?
26. What is hypo-, hyper-, beriberi?
27. What is health?
28. What is prevention?
29. What is etiology?
30. Hygiene is a science of....
31. In what units is it measured: work, work power, energy, muscle strength ?
32. What is the physical inactivity?
33. What is VC? What indicators does it consist of?
34. What is the dynamic work?
35. What is static work?
36. What is the fibrosis?
37. List the formed elements of blood.
38. What is Hb?
39. What hydrocarbons do you know?
40. In what units is the frequency of mechanical vibrations measured?

QUESTIONS FOR THE MODULE №1

1. Hygiene of educational process in educational institutions
2. Environmental factors, their classification and role in the emergence and spread of diseases.
3. Physical properties of air, their hygienic assessment, research methods. Effects on the body.
4. Heat exchange of the body and the mechanism of thermoregulation. Effects on the body high temperature. Prevention and first aid in heat stroke.
5. Hygienic value of air humidity. Methods of assessment of individual species humidity's.
6. Influence on the body of atmospheric pressure. Caisson disease and its measures warnings.
7. Solar radiation and its biological effects. The value of ultraviolet parts of the solar spectrum.
8. The biological significance of ultraviolet radiation. Application artificial UV radiation as a preventive measure.
9. Climate and weather, their hygienic value. The concept of acclimatization.
10. Complex influence of meteorological conditions on the organism.
11. The concept of the microclimate. Hygienic characteristics of the air environment enclosed spaces
12. Hygienic characteristics of the atmosphere. Atmospheric air pollution as the most important hygienic and ecological task. Source of pollution air basin and measures for its protection.
13. Air pollution as the most important hygienic and environmental problem.

QUESTIONS FOR THE MODULE №2

1. Basics of nutrition
2. Nutritional and biological value of food products
3. The main regularities of the food ration construction.
4. Methods of food quality assessment. The concept of "conditionally fit" foods.
5. Fats, their classification and importance for the body. Consumption rates taking into account climatic conditions.
6. Carbohydrates, their classification. Values for the organism and rate of consumption. Products-sources of carbohydrates.
7. The role of proteins for the body, their nutritional and biological value, norms consumption for different population groups.
8. Vitamins and their classification. The role of vitamins in nutrition.
9. Fat-soluble vitamins, their importance for the body. Sources and consumption rate. Indicators of vitamin A deficiency
10. Water-soluble vitamins and their importance for the body. Sources and norms consumptions
11. The value of minerals in human nutrition. Classification, products-sources, consumption rates.
12. Classification of the food poisoning.
13. Food poisoning of microbial etiology and their prevention

14. Food toxicities and their prevention
15. Food poisoning of non-microbial origin, measures of their prevention.
16. Ecological problems of human nutrition. The concept of " alien substances", "food chain" and biologically active substances.
17. A disease caused by the ingestion of unsound food. Classification of food poisoning.

QUESTIONS FOR THE MODULE №3

1. Water as a factor of the biosphere and a necessary condition for the existence of life on the land. Environmental and hygienic problems of the hydrosphere.
2. Hygienic requirements for drinking water quality.
3. The impact of water chemistry on public health.
4. Chemical indicators of organic pollution of drinking water.
5. Methods for improving drinking water quality.
6. Soil as an environmental factor. The main properties of the soil and their hygienic value. Soil pollution and self-cleaning.
7. The role of soil in the occurrence of human diseases. Pollution and self-cleaning soils.

QUESTIONS FOR THE MODULE №4

1. Physiological-hygienic basis of the work process. The concept of gravity and the intensity of work.
2. Classification of working conditions. The main occupational hazards,
3. Recreational activities at industrial enterprises.
4. Occupational hazards and occupational diseases. Basic directions of prevention of occupational diseases.
5. Industrial noise. Effects of noise on the body, measurement methods and assessments. The main directions of prevention of harmful effects.
6. Physical and hygienic assessment of vibration, its impact on the body, the main areas of prevention.
7. Ultrasound, its effect on the body. Measures for the prevention of adverse influences.
8. Non-ionizing electromagnetic radiation and fields, their impact on the body, prevention of adverse effects.
9. Occupational health when working with radioactive substances and sources ionizing radiation. Protection principle.
10. Industrial dust, classification, physical and chemical properties, action on an organism.
11. Specific diseases of the lungs and other organs under the influence of industrial dust. Classification of pneumoconiosis.
12. Silicosis and its prevention in the working environment.
13. Industrial poisons. Classification, routes of entry and excretion of poisons from the body, effects on the body.
14. The influence of heavy metals on the body of workers. Found in production.
15. Mercury, its compounds. Physical and chemical properties, application in industry, medicine. Effects on the body and prevention.
16. Lead, industrial applications, effects on the body and measures prevention of harmful effects.
17. Carbon monoxide, sources of education, effects on the body, prevention poisonings'

QUESTIONS FOR THE MODULE №5

1. Nosocomial infection. Classification, causes, principle of prevention.
2. Hygiene of medical workers ' labor.
3. Infectious diseases departments of the hospital. Requirements for their layout, equipment and operation. Prevention of nosocomial infections

QUESTIONS FOR THE MODULE №6

8. The basic laws of growth and development of the child's body.
9. Physical development of children and adolescents. Methods of study and evaluation.
10. Methods of anthropometric research.
11. Age period. Basic laws of growth and development of children.
12. Factors shaping children's health. Hygienic basis of provision normal growth and development of the child.
13. The role of physical education in ensuring the development of children and teenagers'. Medical control over physical education of schoolchildren.
14. Hardening of children and teenagers. Basic principles, positive and possible adverse effects.
15. Hygiene of educational process in educational institutions.
16. Determination of the child's readiness for school.
17. Hygienic assessment of school furniture.
18. Hygienic requirements for school textbooks.
19. Hygienic requirements for toys.

QUESTIONS FOR THE MODULE №7

1. Ecological and hygienic problems of populated areas.
2. Emergencies and their classification.
3. Man-made emergencies.
4. Risk factors in the event of extreme conditions.
5. Sanitary and hygienic problems of disaster medicine.
6. Hygienic requirements for the placement of people in emergency situations.
7. Sanitary and hygienic requirements for water supply of organized groups in extreme conditions.
8. Medical control over catering in emergency situations.
9. Principles of primary prevention in the elimination of health risk factors in disaster areas.
10. The role of the doctor in solving problems arising in emergencies and disasters.

MODEL A SITUATIONAL PROBLEM

HYGIENE OF THE HUMAN ENVIRONMENT

Federal State Budgetary Educational Institution of
Higher Education "North-Ossetian State Medical Academy"
Ministry of Healthcare of the Russian Federation

Department General hygiene and physical culture
Faculty Medical **Course** III
Discipline Hygiene

Model a situational problem №1.

The following data were obtained in the study of microclimatic conditions in a 3-bed ward with an area of 21 m2 (at a depth of 5.5 m and a height of 3.5 m) of the therapeutic Department of the hospital:

- readings of the thermometer placed on the light-bearing (external) wall were equal to 20.50 S, placed on the opposite (internal) wall 220C, on the inner side wall (at a distance of 3 m from the light - bearing wall) - 21.50 S.all measurements were made at a height of 1 m from the floor.

The vertical temperature difference was 10C per each meter of the chamber height.

Relative humidity, measured by aspiration psychrometer, was 20%, air velocity in the center of the chamber - 0.05 m / s.

Task

Give a hygienic conclusion on the given situation.

Head of the department, Professor **A. R. Kusova**
Date of approval at CCTMS
«22» March 2022 Pr. № 4

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Model a situational problem №2.

Biology room of the secondary school № 10 of Vladikavkaz with an area of 66 m2 is oriented to the South-East. Light coefficient-1: 4, the coefficient of penetration – 2.7: KEO on the last Desk of the extreme range of 1.05%.

Task

Give a hygienic conclusion on the above situation, assessing the conditions of natural light in the biology room.

Head of the department, Professor **A. R. Kusova**
Date of approval at CCTMS
«22» March 2022 Pr. № 4

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Faculty Medical **Course** III
Discipline Hygiene

Model a situational problem №3

Rural settlement, numbering 750 people has no water supply. For drinking and economic needs use water from mine or from tubular wells. In the village there is a dairy farm and private use of individual farms-cows, sheep, goats and poultry. Solid waste is not removed, disposed of by incineration on site, or used cesspools. The results of the analysis of water from wells are as follows:

Indicators	**Unit**	**Typeofwell**		**Requirements SanPiN**
		haft		
Smell	point	No	not>2-3	не>2-3
Taste	point	No	not>2-3	не>2-3
Chromaticity	degree	>30	>30	>30
Turbidity	mg / l	1.3	1,5	1,5
Oxidizability (permanganate)	O2 /l mg	5,2	Five	5
Rigidity	mg-EQ/l	6,2	7 (upto 10)	7 (до 10)
Solids	mg / l	Fourhundredeighty	1000 (upto 1500)	1000 (до 1500)
Sulfates	mg / l	Twohundredten	Fivehundred	500
Chlorides	mg / l	Onehundredninetyeight	Threehundredfifty	350
Iron	mg / l	0,4	0.3 (upto 10)	0,3 (до 10)
Fluorides	mg / l	1,2	1,5	1,5
Ammonia	mg / l	0,02	0,01	0,01
Nitrates (NO3)	mg / l	Fortyeight	Fortyfive	45
Microbialnumber	numberofcolonies	Threehundredsixty	not>100	не>100
Coli-index	the number of E. coli/l	Eighteen	Ten	10

Task

Give a hygienic conclusion on the given situation.

Head of the department, Professor **A. R. Kusova**

Date of approval at CCTMS
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Model a situational problem №4.

Farm workers use water to drink from a mine well located directly on the farm. The well has a cover. Water is raised by an electric pump. Near the well organized watering cattle. The analysis of water showed the following results: color-colorless, smell-no, turbidity-1.8 mg/l, oxidation – 6.8 mg/l, iron – 0.8 mg/l, fluorine – 1.0 mg/l, ammonia – 0.5 mg/l, nitrites – 0.02 mg/l, nitrates(NO3) – 75 mg/l.Coli-index – 250 mg / l. for disinfection purposes, chlorine lime with an active chlorine content of 30% can be used. For disinfection, you can use a stainless steel barrel with a capacity of 200 liters.

Give a hygienic conclusion on the above problem.

Head of the department, Professor **A. R. Kusova**

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Discipline Hygiene

Model a situational problem №5.

The school of the village for students in grades 1-2 need to organize preventive UV irradiation using a lamp EUW-30. Erythemal flow lamp EV-540 mayor. The area of each class is 52 square meters. The height of 3 m. Calculate the required number of erythemal lamps on the basis that children should receive ¼ biodose (to obtain 1 biodosis requires a luminous flux of 5000 m).

TASK

What kind of irradiation plant is necessary in this situation**.**

Head of the department, Professor **A. R. Kusova**

Date of approval at CCTMS
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Discipline Hygiene

Model a situational problem №6.

In the dispensary subway workers need to organize a photo with the lamp PRK-2. 26 people are subject to irradiation. To specify the optimal distance irradiated from the lamp, the required area of votary, the scheme of irradiation and the number of persons irradiated at the same time.

TASK

Tate the rules of the organization of the photo in this situation.

Head of the department, Professor **A. R. Kusova**

Date of approval at CCTMS
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Discipline Hygiene

Model a situational problem №7.

In 1999 in rural settlements of the Gordeevsky district of the Bryansk region which were exposed to radioactive pollution owing to accident on the Chernobyl NPP pollution of objects of environment by radioactive isotope strontium-90 was studied.

In food products of local production, the content of Sr-90 was found: in animal products - 25 Bq/kg; in plant products - 60 Bq/kg; in drinking water-10 Bq/l.the intake of Sr-90 with atmospheric air did not exceed 1% and could not be taken into account. The equivalent of the annual consumption of animal products by an adult is 300 kg of milk, vegetable products-300 kg of potatoes. The value of daily water consumption is 2 kg (l).

TASK

Estimate the level of strontium pollution in this area from the standpoint of its possible annual intake of people with drinking water and food.

Head of the department, Professor **A. R. Kusova**

Date of approval at CCTMS
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Discipline Hygiene

Model a situational problem №8.

On the night of the Chernobyl accident, 600 people from the industrial site received the highest doses of radiation. These people were exposed to relatively uniform external irradiation of the whole body. Of these, 134 people average individual dose was 3.4 SV. All 134 liquidators were diagnosed with acute radiation sickness. In other liquidators in the first days after the accident, the average individual doses were 0.56 SV, in helicopter pilots - 0.26 SV, in the Chernobyl personnel - 0.087 SV.

TASK

Assess the radiation doses received by the liquidators and the tactics of their further employment and treatment.

Head of the department, Professor **A. R. Kusova**
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Discipline Hygiene

Model a situational problem №9.

In the laboratory of the diagnostic Department of the cancer hospital of N. work with beta-emitting isotopes. 250 cm2 of the surface of the floor of the laboratory produced runoff. After radiometric studies have been discovered radioactive contamination flushing is 5.5□105 particles/min.

TASK

Give an opinion on the level of contamination of the floor surface in the laboratory and, if necessary, recommendations for its reduction.

Head of the department, Professor **A. R. Kusova**
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Model a situational problem №10.

In the atmospheric air of Krasnoyarsk average annual concentrations of man-made chemicals were:

- suspended solids-0.75 mg / m3;
- nitrogen dioxide-0.03 mg / m3;
- ammonia-0.024 mg / m3;
- formaldehyde-0.0015 mg / m3;
- freons-0.2 mg / m3;
- carbon disulfide-0.4 mg / m3.

Reference (safe) concentrations of these substances are:

- for suspended solids-0.05 mg / m3;
- for nitrogen dioxide-0.04 mg / m3;
- for ammonia-0.24 mg / m3;
- for formaldehyde-0.003 mg / m3;
- for freons-0.7 mg / m3;
- for carbon disulfide-0.7 mg / m3.

The critical organs most affected by exposure to suspended solids, nitrogen dioxide, ammonia and formaldehyde are the respiratory organs; for freons and carbon disulfide – the Central nervous system.

TASK.

Give a hygienic conclusion on the given situation. Calculate the hazard coefficients for each of the problem presented in the condition of man-made chemicals that pollute the air, and calculate the hazard indices for critical organs.

Identify the critical organs that are most affected by the chemicals presented, and identify the substances that play the most significant role in the formation of human health risks, as well as those that contribute most to the risk of exposure to the relevant critical organ or system.

Head of the department, Professor **A. R. Kusova**

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RATIONAL NUTRITION AND ITS ORGANIZATION

Federal State Budgetary Educational Institution of
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Department General hygiene and physical culture
Faculty Medical **Course** III
Discipline Hygiene

Model a situational problem №1.

The kitchen factory of the machine-building plant has prepared 3 complex meals for the first shift workers during the lunch break:

1. complex-Olivier Salad;
   Borsch Ukrainian;
   Pasta with meat in the Navy;

Compote of apricots;
Wheat bread.

(caloric content of the complex-1548 kcal; protein-36 g; fat-45.7 g; carbohydrates-209.4 g; calcium-153 mg; phosphorus-505 mg; magnesium-68 mg; iron-47 mg; vitamin a-0.05 mg; carotene-7.8 mg; vitamin B1-0.8 mg; vitamin B2-0.9 mg; vitamin PP-11.2 mg; vitamin C-47.2 mg.).

2. complex-squash Caviar;
Pickle with fish;
Chopped steak with egg and potatoes;
Coffee with milk;
Rye bread.

(caloric content of the complex-1088 kcal; protein-57.4 g; fat-43 g; carbohydrates-185 g; calcium-335 mg; phosphorus-913 mg; magnesium-195 mg; iron-8,6 mg; Vit. A-0.4 mg; carotene-3.6 mg; Vit. B1 -0.4 mg; Vit. B2 –1 mg; Vit. RR-8 mg; Vit. C-53 mg).

3. complex-sauerkraut with green onions;
Potato soup with meat;
Sausages with stewed cabbage;
Carrot juice;
Bread Borodinsky.

(caloric content of the complex-1085 kcal; protein-41 g; fat-39 g; carbohydrates-143.6 g; calcium-349 mg; phosphorus-372 mg; magnesium-79 mg; iron-9.3 mg; Vit. A-0.05 mg; carotene-19.5 mg; Vit. B1-0.65 mg; twisted. B2-0.9 mg; Vit. PP-9.9 mg; Vit. C-144 mg.).

TASK

Give the conclusion about possibility of use of these complex Lunches in food of employees of the enterprise if it is known that in the General structure of daily food on caloric content and structure it makes 40%.

Head of the department, Professor **A. R. Kusova**

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Model a situational problem №2.

During the medical examination of industrial workers of the plant of metal structures, held in March, 30% of the surveyed persons complained of increased bleeding gums.

On examination: swelling and loosening of gums. After a small massage of the gums with your finger, scarlet blood appears on the mucosa. When measuring blood pressure at the site of the cuff, spot hemorrhages were noted.

TASK

Assess the situation and indicate the possible cause of complaints made by employees of the enterprise.

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Discipline Hygiene

Model a situational problem №3.

In the laboratory of the Center for sanitary and epidemiological supervision of the South-Western district of Moscow delivered a sample of meat of beef, taken from the dining room of the medical College No. 24, in order to study fines. During visual inspection of the meat's surface is a dry crust of drying. The surface of the meat is slightly moist, not sticky, brown-red color. Fat yellowish, the usual. The cut meat is dense, elastic, formed by pressing the hole quickly disappears. The smell of fresh meat. When cutting in the depth of the tissue, bubbles of oval shape, the size of a wheat grain, were found on close examination. Microscopy indicated the formation characteristic of the Finns bovine tapeworm, inside the bubble is visible in the collapsed head of the parasite. When checking for viability found that the Finns are in a dead state. On a plot of 40 cm2 found 2 Finns.

TASK

Give a sanitary conclusion on the sample of meat on the basis of organoleptic characteristics and microscopy data.

Head of the department, Professor **A. R. Kusova**
Date of approval at CCTMS
«22» March 2022 Pr. № 4

Federal State Budgetary Educational Institution of
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Discipline Hygiene

Model a situational problem №4.

In kindergarten for lunch as a snack was given eggplant caviar (canned industrial production of one of the collective farms canneries of Krasnodar region). After 7 hours, two children developed vomiting, abdominal pain, weakness, difficulty swallowing, uneven pupil dilation. Later, there were symptoms such as drooping eyelids, hoarseness of voice, nasal speech. Body temperature remained normal,with tachycardia. The children were consulted by a neurologist and hospitalized in the neurological Department with diagnoses of bulbar form of polio and diphtheria polyneuritis. Despite the treatment, both children died a day later. For another five children with similar complaints, which appeared after 12-48 hours, a medical Commission was organized, which included an infectious disease doctor, a neurologist and a pediatrician. The Commission was diagnosed with food poisoning of microbial nature. At the same time, it was found that all the sick

children received during lunch eggplant caviar from one can. As a result of the treatment, the last five children were rescued.

TASK

Analyze the described case of food poisoning, using the data of anamnesis and clinic. Justify the diagnosis, indicate what additional laboratory studies are needed to clarify what should be of immediate assistance to those affected and to propose specific measures of prophylaxis of poisoning the etiology.

Head of the department, Professor **A. R. Kusova**

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Model a situational problem №5.

On August 20, 2004, the following food products were delivered to the summer health camp for 450 children:

- milk, packaged in milk plastic bags of 0.5 liters, on the package date: valid until 20.08.04. During the inspection found that the milk white color with a yellowish tinge, smooth consistency;
- fresh-frozen fish (cod) in the form of briquettes Packed in cardboard boxes without external defects and damages;
- chicken eggs Packed in cardboard boxes and Packed in layers in corrugated forms. On boxes there is a date of dredging of eggs-05.08.04;
- meat beef in the form of frozen carcasses of without stigma. On external examination, the meat is red, yellow fat, odorless.

TASK

Conduct a sanitary examination of the received products, specify the terms of their implementation.

Head of the department, Professor **A. R. Kusova**

Date of approval at CCTMS
«22» March 2022 Pr. № 4

HYGIENE OF TREATMENT-AND-PROPHYLACTIC INSTITUTIONS GENERAL MEDICAL PROFILE

Federal State Budgetary Educational Institution of
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Model a situational problem №1.

Complex city hospital for 300 beds will be located near the green area, away from sources of noise and air pollution. The plot will include the following zones: zone gardening (40%), therapeutic area non-communicable buildings, the area of infectious medical corps, pathoanatomical corps area, commercial area. Three entrances will be provided to the territory of the hospital, and one of them is intended for the entrance to the infectious body and the pathology Department.

The hospital has a therapeutic Department consisting of two ward sections. In the set of premises of each chamber section includes a chamber, a place of daily stay of patients, treatment, pantry with a dining room, doctor's office, offices of the head nurse and sisters, mistress, toilet room, ward corridor

TASK.

Give a hygienic conclusion on the given situation.

Head of the department, Professor **A. R. Kusova**

Date of approval at CCTMS
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Model a situational problem №2.

When bacteriological study of the air of the intensive care unit of the city hospital of K. with the help of the device Krotov sucked 250 liters of air. Standard Petri dishes with dense nutrient media were used for sowing. After incubation in the thermostat for 48 hours at a temperature of 36-370C, the colonies were counted with the recalculation of their quantity per 1 m3 of chamber air. The total bacterial contamination of air was 1500 colonies, the number of Staphylococcus aureus-8, Pseudomonas aeruginosa-1.

TASK

Give a hygienic conclusion on bacterial air pollution in the intensive care unit of the hospital.

Head of the department, Professor **A. R. Kusova**

Date of approval at CCTMS
«22» March 2022 Pr. № 4

OCCUPATIONAL HEALTH AND INDUSTRIAL TOXICOLOGY

Federal State Budgetary Educational Institution of
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Model a situational problem №1.

In the stamping shop of the automobile produced noise level measurement device ISHV-1. Resultsobtained:

The overall intensity of noise in dB	Intensity in octave bands with average geometric frequencies, Hz							
	63	125	250	500	1000	2000	4000	8000
94	99	90	80	81	86	84	80	78
Remote control of noise in industries. the room. CH 2.2.4 / 21.8.592 of 1996.	95	87	82	78	75	73	71	69

TASK

Give a hygienic conclusion on the noise situation in this production room.

Head of the department, Professor **A. R. Kusova**

Date of approval at CCTMS
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Model a situational problem №2.

When carrying out regular preventive medical examination of workers of the plant for production of automotive batteries 2 workers complained of frequent headaches dull, aching, fatigue, muscle pain, trembling of the fingers, intermittent involuntary twitching of certain muscles.

From the history it is established that work experience at this enterprise and in this shop makes more than 10 years.

When inspecting installed: the skin is pale with a grayish-green hue, visible mucous membranes pale. On the gums, mainly in the front teeth there is a change in color of the mucous membrane. It is painted in purple in the form of strips. There is a tremor of the fingers.

When palpating the muscles of the hands, pain is noted along the nerves.

TASK

What kind of occupational disease can be discussed and what activities in this case should be provided by the medical unit of the enterprise?

Head of the department, Professor **A. R. Kusova**

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Model a situational problem №3.

In the ore quarry, the excavator, which is engaged in the loading of rock, was taken air samples to determine the concentration of dust, its chemical composition and dispersion of dust particles.

The dust concentration in the air of the working area was 4 mg / m3.

Dust contained 55% free silica (MPC for this type of dust-2 mg / m3).

The dispersion of dust particles is presented in the table.

Distribution of dust particles by dispersion.

Dustparticlesizes	до 1,0 ммк	от 1 до 5 ммк	Более 5 ммк
Content of dust particles in percent	15%	80%	5%

TASK

Evaluate the working conditions in the workplace. Give recommendations for their improvement.

Head of the department, Professor **A. R. Kusova**

Date of approval at CCTMS
«22» March 2022 Pr. № 4

HYGIENE OF CHILDREN AND ADOLESCENTS

Federal State Budgetary Educational Institution of
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Discipline Hygiene

Model a situational problem №1.

Computer class for students of 2-3 courses in higher education has an area of 60 m2, ceiling height-3 m. in the hall there are 15 computers, 7 of which do not have certificates of conformity. Computers in the classroom are placed along the side walls of the room, which leads to cross-irradiation of workplaces. The distance between the desks 1 m and the distance between the side surfaces of the monitors 1 m, workplaces are not isolated from each other, the height of the working tables of 600 mm. the Screens are at a distance of 50 cm from the eye. The duration of the lesson is 2 hours.

Natural lighting is provided through Windows oriented to the South-East. KEO is 0.8%. Artificial lighting is provided by fluorescent lamps. Illumination on the table surface is 150 LUX. The temperature in the room after the first hour of 250, relative humidity 25%, in the room there is no ventilation system.

After the computer class equipment, no measurements of electric and magnetic fields were made.

TASK

Give a hygienic conclusion on the working conditions of students.

Head of the department, Professor **A. R. Kusova**
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«22» March 2022 Pr. № 4

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Model a situational problem №2.

Before entering the school, a medical examination of the pupils of the preparatory group of one of the preschool institutions in Moscow was conducted. Date of survey 26 April 2004.

Kuznetsova Anya (date of birth 23 December 1997) has the following somatometric indicators: body length – 124 cm, body weight – 24.6 kg, chest circumference – 55cm. The muscle strength of the right and left hands is 11 and 8 kg, respectively, the vital capacity of the lungs is 980 ml, the heart rate is 100 beats / min, the maximum and minimum blood pressure is 90/55 mm of mercury.

TASK

Determine the exact age of the child and assess the level and harmony of its physical development by a valuable method.

Head of the department, Professor **A. R. Kusova**

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Model a situational problem №3.

The girl, born on 19 February 1994, underwent a medical and psychophysiological examination (20 March 2000) to determine her readiness for school.

The medical record of the child (form 026) contains records of examinations performed by a pediatrician, orthopedic surgeon, ophthalmologist, neurologist, speech therapist and dentist.

Girl anatomicheskii has the following characteristics: body length - 124 cm, weight - 24, 6 kg, chest circumference - 55 cm Number of permanent teeth - 4. Subjective complaints: there is a rapid fatigue at low loads, frequent headache. During the last calendar year she was ill 4 times (2 times SARS, sore throat, chickenpox).

Test Kern-Jirásek made with a rating of 6 points. Defects of a sound pronunciation it is not revealed.

TASK

Determine the exact age of the child. Evaluate the presented medical (level of biological and physical development, health status, acute morbidity) and psychophysiological (the results of the Core-Irasek test, the quality of sound) criteria for readiness for school. Give a reasoned opinion and the possibility of learning and recommendations for the upcoming summer season.

Head of the department, Professor **A. R. Kusova**

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Model a situational problem №4.

Secondary school № 18 of Vladikavkaz, designed for 464 students, is located in the district within a quarter at a distance of 50 m from the inter-quarter driveways. On the windward side, 100 m from the school, there is an industrial enterprise of the 2nd class.

The land plot is rectangular in shape, the total area is 2.1 hectares. the following zones are

allocated on the site: sports, educational and experimental, recreation area and a zone of the economic yard with a separate entrance from the street. The area of green space is 12000 m2.

The school building has a block layout: there are 3 educational two-storey block (A, B, C) and administrative building.

Classrooms for the younger grades (grade 4) located on the ground floor of block A. the area of the classrooms of 53.5 m2 (7.6 x 7,04 m) window oriented to the South side of the horizon, On the second floor there are classrooms for Junior and senior high school: study of mathematics, literature, Russian language (with an area of 53.5 m2), sketching and drawing (74,8 m2) and military training (62,8 m2 with a clean room and a weapons storage room). The laboratories of physics, chemistry and biology are located on the first floor of the block (area of laboratories is 73-74 m2) with a separate entrance from the corridor. In the third training block (B) the first floor is occupied by a gym measuring 9 x 13 m (117 m2), as well as two dressing rooms with showers and toilets, a shell room and an instructor's room. On the second floor there is a combined metal and wood processing workshop (52.3 m2), a master's room and a tool room.

In addition to the above, the school has facilities for the organization of the extended day, a library, an Assembly hall, a dining room and a medical center.

TASK

Evaluate the presented architectural and planning solution of the school site and the building in accordance with sanitary and hygienic requirements.

Head of the department, Professor **A. R. Kusova**

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Model a situational problem №5.

Preschool-nursery / kindergarten № 93 is located on the border of the district and is located 100 m from the industrial enterprise of the 3rd class. The land plot of the preschool institution has a corner location in the neighborhood. Directly in the immediate vicinity there are residential houses. On the territory of the site there are two entrances: one entrance for children with parents and staff; the second - the entrance to the catering unit.

On the territory of the plot of the nursery garden, designed for 240 children (10 groups) are allocated: group-playgrounds, number 10, equipped with canopies and sandboxes; General sports ground; economic area. Group-playgrounds are separated by green spaces (bushes). The area of green space is 30%.

The nursery garden is located in a typical building, the main facade faces South. Building a 2-storey consists of rooms for toddlers, preschoolers and administrative areas. Premises for children of pre-school age (nursery) and administrative-economic are located on the 1st floor, and premises for children of preschool age on the 2nd floor. Children are divided into 10 groups according to age (nursery and preschool). The premises for toddlers have an external common entrance in the building for 2 groups, and for preschool children for 4 groups.

The structure of the premises for toddlers include: reception, play room, bedroom, pantry, toilet. The structure of premises for preschool children includes: dressing room, group, bedroom,

pantry, toilet. The Windows of the playing and group rooms have a southern orientation.

The light coefficient in the playing and group rooms is 1:5, the penetration coefficient is 1: 2.5.

On the 1st floor of the building there is a music hall with an area of 100 m2; rooms for classes on the development of speech and manual labor; medical center, consisting of a medical room, a treatment room and an insulator. Catering and service rooms are located on the 1st floor isolated from children's groups.

TASK

Give an assessment of the conditions of placement and layout of nurseries / garden № 93.

Head of the department, Professor **A. R. Kusova**

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Model a situational problem №6.

When planning the use of land for kindergarten was analyzed sanitary condition of the soil. The following results were obtained: sanitary number-0.7; coli-titer-0.3; single larvae of flies on 0.25 m2 of soil surface.

A locality intensely developed chemical and Metalworking industries.

TASK

Give a hygienic conclusion on the given situation.

Head of the department, Professor **A. R. Kusova**

Date of approval at CCTMS
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Model a situational problem №7.

In the kindergarten, a group of newly admitted children was formed at the age of 4-5 years, not previously hardened. Children are on the same level of health and physical development. Conditions for carrying out of tempering procedures are.

TASK

Give recommendations on the organization of the hardening process

Head of the department, Professor **A. R. Kusova**
Date of approval at CCTMS
«22» March 2022 Pr. № 4

HYGIENE OF EXTREME SITUATIONS AND DISASTERS

Federal State Budgetary Educational Institution of
Higher Education "North-Ossetian State Medical Academy"
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Discipline Hygiene

Model a situational problem №1.

In the city of P. , Vladimir region, with a population of 100 000 people, there is a plant for the production of medical equipment (thermometers and pressure gauges), as well as warehouses for the storage of bleach (about 50 thousand tons) the Main source of water supply of the city is the river flowing near the industrial zone.

During the spring flood, which was caused by heavy rains and a hurricane, there was flooding of a large part of the city, which led to the destruction of the plant, urban warehouses and sewage. As a result, the discharge of wastewater into the river began without pre-treatment, which created an additional threat to the health of the local population.

As a result of flooding of a significant part of the area affected more than 5 thousand people. Health authorities have registered more than 50 cases of intestinal infectious diseases.

TASK

Give an analysis of the situation in the city of P., and its hygienic assessment.

Head of the department, Professor **A. R. Kusova**

Date of approval at CCTMS
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Discipline Hygiene

Model a situational problem №7.

After the use of nuclear weapons by the enemy, the regimental medical station, located in a sealed shelter with a volume of 650 m3, switched to full isolation. At this time, there were 25 sick people and 5 medical personnel. The management of the medical center contacted by radio with the command and requested data on the tactics of their behavior in the near future. In turn, the command received a request-how long the medical center will be able to hold out in the shelter until the accumulation of carbon dioxide in it to the levels of life-threatening people.

TASK

Give a hygienic conclusion on the given situation. Calculate how much time the medical center can work in the presented situation?

Head of the department, Professor **A. R. Kusova**

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Model a situational problem №7.

The flood almost completely destroyed the settlement of 1500 people. The population is placed in a tent city in tents USB with the possibility of heating (there is a stove). There is a supply of water and food, but the need for water is much greater, so the production of water on the spot: with the help of the military installation MTK-2m (small tubular well) drilled well depth of 10 m.the Analysis of water is not carried out, and, given the flood, we can assume contamination of water by pathogenic microorganisms.

TASK

Give a hygienic conclusion on the given situation.

Head of the department, Professor **A. R. Kusova**
Date of approval at CCTMS
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Federal State Budgetary Educational Institution of Higher Education
«North-Ossetia State Medical Academy»
of the Ministry of Healthcare of the Russian Federation

Department of General Hygiene and Physical Culture

STANDARDS OF TEST TASKS

on discipline **HYGIENE**

the main professional educational program of higher education –
specialty program in the specialty 31.05.01 General Medicine,
approved in March 30, 2022

For students 2-3 courses

on the specialty "31.05.01 General Medicine" (the educational program is partially implemented in English)

Considered and approved at the meeting of the department
of March 16, 2022, Protocol №.8

Head of the department
Doctor of Medicine, Professor _____ A.R. Kusova

Vladikavkaz 2022

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