

**No. STOM-21**

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

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**Department of General Hygiene and Physical Culture**

**APPROVED**  
minutes of the meeting  
Central coordination  
educational and methodological  
council " 23 " may 2023 No. 5

**ASSESSMENT MATERIALS**

in the discipline "**HYGIENE**"

the main professional educational program of higher education - specialty programs in  
the specialty 31.05.03 Dentistry ( educational program, partially implemented in  
English ), approved on may 24, 2023

**for** 3rd year students (5th semester)

**specialty** 31.05.03 Dentistry

**Reviewed and approved at a department meeting**

From "18" May 2023 (protocol No.10)

**Head department of general hygiene and  
physical culture, doctor of medical sciences prof.  
Kusova A.R.**



**Vladikavkaz, 2023**

## STRUCTURE OF ASSESSMENT MATERIALS

1. Title page
2. Structure of assessment materials
3. Reviews of evaluation materials
4. Passport of evaluation materials
5. Set of assessment materials:
  - questions for the module
  - questions for testing
  - bank of situational tasks/business games
  - standards of test tasks (with title page and table of contents)
  - tickets for competition

**ФЕДЕРАЛЬНОЕ ГОСУДАРСТВЕННОЕ БЮДЖЕТНОЕ ОБРАЗОВАТЕЛЬНОЕ  
УЧРЕЖДЕНИЕ ВЫСШЕГО ОБРАЗОВАНИЯ «СЕВЕРО-ОСЕТИНСКАЯ  
ГОСУДАРСТВЕННАЯ МЕДИЦИНСКАЯ АКАДЕМИЯ» МИНИСТЕРСТВА  
ЗДРАВООХРАНЕНИЯ РОССИЙСКОЙ ФЕДЕРАЦИИ**

**РЕЦЕНЗИЯ  
на оценочные материалы**

<b>по дисциплине</b>	<b><u>Гигиена</u></b>
<b>для студентов</b>	<b><u>3 курса</u></b>
<b>по специальности</b>	<b><u>31.05.03 Стоматология</u></b> (образовательная программа, частично реализуемая на английском языке)

Оценочные материалы составлены на кафедре общей гигиены и физической культуры на основании рабочей программы дисциплины «Гигиена», утвержденной 24 мая 2023 г., протокол № 8 и соответствуют требованиям ФГОС ВО 3++ по специальности 31.05.03 Стоматология (образовательная программа, частично реализуемая на английском языке).

Оценочные материалы включают в себя:

- вопросы к модулю,
- вопросы к зачету,
- банк ситуационных задач,
- эталоны тестовых заданий (с титульным листом и оглавлением),
- экзаменационные билеты к зачету

Банк ситуационных задач включает в себя сами задания и шаблоны ответов. Все задания соответствуют рабочей программе дисциплины «Гигиена», формируемым при ее изучении компетенциям, и охватывают все её разделы. Банк содержит ответы ко всем ситуационным задачам.

Эталоны тестовых заданий включают в себя следующие элементы: тестовые задания, шаблоны ответов. Все задания соответствуют рабочей программе дисциплины «Гигиена», формируемым при ее изучении компетенциям, и охватывают все её разделы. 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. Эталоны содержат ответы ко всем тестовым заданиям.

Количество экзаменационных билетов достаточно для проведения зачета и исключает неоднократное использование одного и того же билета во время зачета в течение одного дня. Экзаменационные билеты выполнены на бланках единого образца по стандартной форме, на бумаге одного цвета и качества. Экзаменационный билет к зачету включает в себя 3 вопроса. Формулировки вопросов совпадают с формулировками перечня вопросов, выносимых на зачет. Содержание вопросов одного билета относится к различным разделам рабочей программы дисциплины, позволяющее более полно охватить материал дисциплины.

Дополнительно к теоретическим вопросам предлагается банк ситуационных задач. Ситуационные задачи дают возможность объективно оценить уровень усвоения обучающимся теоретического материала при текущем контроле успеваемости и промежуточной аттестации. Сложность вопросов в экзаменационных билетах распределена равномерно.

Замечаний к рецензируемым оценочным материалам нет.

В целом, оценочные материалы по дисциплине «Гигиена», способствуют качественной оценке уровня владения обучающимися универсальными, общепрофессиональными, профессиональными компетенциями.

Рецензируемые оценочные материалы по дисциплине «Гигиена», могут быть рекомендованы к использованию для текущего контроля успеваемости и промежуточной аттестации по специальности 31.05.03 Стоматология (образовательная программа, частично реализуемая на английском языке) у обучающихся 3 курса (5 семестр).

Рецензент:

Председатель ЦУМК  
естественно-научных и математических дисциплин  
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20.05.2023 г.



## Passport of assessment materials for the discipline

### "HYGIENE"

No. __	Name controlled section (topics) of the discipline/module	Code of the competence (stage) being formed	Name of assessment material
1	2	3	4
<b>Type of control</b>	<b>Incoming knowledge control</b>		Test tasks
<b>Type of control</b>	<b>Current progress monitoring</b>		
1.	Environment, its influence on the body : - air hygiene; - hygiene of water and water supply.	UC-1	Test tasks, questions for the module, situational tasks
2.	Nutrition as a factor in maintaining and strengthening public health.	PC-4 OPC-4	Test tasks, questions for the module, situational tasks
3.	Labor as an integral part existence of man and his positive and negative impact on health. Hygiene of medical and preventive dental organizations	PC-4 PC-5	Test tasks, questions for the module, situational tasks
4.	Hygienic principles for ensuring normal development and high level of health of the child population.	PC-5	Test tasks
<b>Type of control</b>	<b>Interim certification</b>		
1.	Environment, its influence on on the body : - air hygiene; - hygiene of water and water supply.	UC-1	Questions for testing , tickets for competition, bank of situational problems
2.	Nutrition as a conservation factor and promoting public health.	PC-4 OPC-4	Questions for testing , tickets for competition, bank of situational problems
3.	Labor as an integral part existence of man and his positive and negative impact on health. Hygiene of medical and preventive dental organizations	PC-4 PC-5	Questions for testing , tickets for competition, bank of situational problems
4.	Hygienic principles for ensuring normal development and high level of health of the child population.	PC-5	Questions for testing , tickets for competition, bank of situational problems

**QUESTIONS FOR MODULE No. 1**  
**"Environment and its influence on the body.**  
**Air hygiene"**

1. Hygiene and sanitation, content, tasks. Methods of hygienic research. The importance of hygienic knowledge for dentists.
2. Environmental factors, their classification and role in the occurrence and spread of diseases.
3. Hygienic characteristics of the atmosphere. Sources of air pollution and measures for its protection.
4. Physical properties of air, their hygienic assessment and methods of determination.
5. Thermoregulation mechanism. Paths of heat transfer and their dependence on the physical properties of air.
6. Atmospheric pressure, its effect on the body. Caisson disease and preventive measures.
7. Hygienic value of air humidity. Methods for assessing certain types of humidity.
8. The concept of microclimate. Hygienic characteristics of the indoor air environment.
9. Meteorological conditions and their effect on the body.
10. Hygienic significance and biological effect of various parts of the solar spectrum. Prevention of UV deficiency .
11. Climate and weather, their hygienic significance. The concept of acclimatization.
12. Natural and anthropogenic changes in the environment.
13. Hygienic and environmental problems of a modern city

**QUESTIONS FOR MODULE No. 2**  
**"Environment and its influence on the body.**  
**Hygiene of water and water supply"**

1. Water as a factor in the biosphere and a necessary condition for the existence of life on earth. Ecological and hygienic problems of the hydrosphere.
2. Physiological and hygienic importance of water for humans.
3. Hygienic characteristics of physical water supply sources ( saprobity indicators ).
4. Water supply systems and their features.
5. Hygienic requirements for drinking water quality.
6. Chemical indicators of water pollution, their hygienic assessment.
7. The influence of the chemical composition of water on public health (endemic and toxicological significance of water).
8. Water as a cause of infectious diseases. Classification of methods for improving the quality of drinking water.
9. Methods of water purification and their characteristics.
10. Methods for disinfecting drinking water.
11. Chlorination of water, types of chlorination. Chlorination with a "normal dose of chlorine".
12. Ozonation. Advantages and disadvantages.
13. Additional (special) methods for improving the quality of drinking water.

**QUESTIONS FOR MODULE No. 3**  
**"Nutrition as a factor in maintaining and promoting health"**

1. Nutrition as a factor in maintaining and promoting health.
2. Basic principles of constructing a food diet.
3. The importance of rational nutrition for various population groups.
4. Nutritional and biological value of food products.
5. Methods for assessing population nutrition. Rules for creating menu layouts for various population groups.

6. The role of proteins for the body, their nutritional and biological value. Consumption standards for various population groups.
7. Food fats, their classification and significance for the body. Consumption standards for the population taking into account climatic conditions.
8. Carbohydrates, their classification. Importance for the body and consumption rates.
9. Microelements and their classification. The importance of the mineral composition of food, the role of calcium and phosphorus, consumption rates.
10. Biological significance of iodine and fluorine for the body. Dental caries, fluorosis, endemic goiter and their prevention.
11. Hypo- and avitaminosis . The causes of their occurrence and preventive measures.
12. Water-soluble vitamins, their importance for the body, sources and consumption rates.
13. Fat-soluble vitamins, their importance for the body, sources and consumption rates.
14. Vitamins and their classification. The role of vitamins in the prevention of dental diseases.
15. Biological role of B vitamins , sources, daily requirement.
16. Biological role of vitamin C , forms of vitamin C deficiency, daily requirement.
17. Biological role of vitamin D , sources, daily requirement for vitamin D.
18. The importance of vitamin A for the body. Norms, sources, prevention of A- vitamin insufficiency.
19. Sanitary and hygienic examination of food products of animal origin. Methods for determining poor quality and falsification.
20. Food poisoning of microbial etiology. Basic principles of their investigation and prevention.
21. Food intoxication and its prevention.
22. Food mycotoxicoses and their prevention.
23. Food poisoning of non-microbial etiology and their prevention.
24. Dietary and therapeutic nutrition. Therapeutic and preventive nutrition at work and its importance for the body.

#### **QUESTIONS FOR MODULE No. 4**

#### **"Labor as an integral part of human existence and his positive and negative effects on health. Hygiene of medical and preventive dental organizations"**

1. Basic health measures at industrial enterprises.
2. The effect of vibration on the body. Vibration disease.
3. The impact of industrial noise on the body. Prevention of adverse effects.
4. Ultrasound, its sources, application, effect on the body.
5. Infrasound, effects on the body, preventive measures.
6. Principles of protection when working with radioactive substances and sources of ionizing radiation.
7. Industrial dust, classification, physicochemical properties, effect on the body.
8. Specific diseases of the lungs and other organs under the influence of industrial dust. Pneumoconiosis, classification, features of the course, preventive measures.
9. Nonspecific diseases arising under the influence of industrial dust.
10. General patterns of the effects of industrial poisons on the body, measures to prevent occupational intoxication.
11. Lead, zinc and their compounds. Effect on the body and preventive measures.
12. Carbon monoxide and sulfur dioxide, sources of formation, toxicological characteristics, prevention of poisoning.
13. Mercury and its compounds, use in industry and medicine, effects on the body and preventive measures.
14. Hygienic requirements for working with amalgam.

15. Types of buildings of medical organizations and hygienic requirements for their design.
16. Hygienic requirements for the design and placement of dental clinic premises.
17. Hygienic requirements for natural and artificial lighting in dental clinics.
18. The concept of ventilation, its meaning and classification. Air conditioning.
19. Hygienic requirements for microclimate, heating, ventilation of dental clinics.
20. Hygienic requirements for the microclimate in dental clinics.
21. Safety rules and industrial sanitation in dental clinics.
22. Hygienic requirements for sterilization of dental instruments, dressings, utensils, etc.
23. Hygienic requirements for pre-sterilization treatment of dental equipment and instruments.
24. Hygienic requirements for the design of interior premises of dental clinics.
25. Hygienic requirements for the equipment of dental offices and premises of ZTL.
26. Sanitary and anti-epidemic regime and cleaning of dental clinics.
27. Personal hygiene rules for dental clinic personnel.
28. Occupational hygiene of dentists.
29. The concept of occupational hazards and occupational diseases among dentists.



## Questions for testing

1. Hygiene and sanitation, content, tasks. Methods of hygienic research. The importance of hygienic knowledge for dentists.
2. Environmental factors, their classification and role in the occurrence and spread of diseases.
3. Hygienic characteristics of the atmosphere. Sources of air pollution and measures for its protection.
4. Physical properties of air, their hygienic assessment and methods of determination.
5. Thermoregulation mechanism. Paths of heat transfer and their dependence on the physical properties of air.
6. Atmospheric pressure, its effect on the body. Caisson disease and preventive measures.
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8. The concept of microclimate. Hygienic characteristics of the indoor air environment.
9. Meteorological conditions and their effect on the body.
10. Hygienic significance and biological effect of various parts of the solar spectrum. Prevention of UV deficiency .
11. Climate and weather, their hygienic significance. The concept of acclimatization.
12. Physiological and sanitary-hygienic significance of water. Hygienic requirements for the quality of drinking water.
13. Chemical indicators of water pollution and their hygienic assessment.
14. Methods for purifying water disinfection in stationary and emergency conditions.
15. Basic properties of soil, hygienic significance. Measures for sanitary soil protection.
16. Nutrition as a factor in maintaining and promoting health.
17. Basic principles of constructing a food diet.
18. The importance of rational nutrition for various population groups.
19. Nutritional and biological value of food products.
20. Methods for assessing population nutrition. Rules for creating menu layouts for various population groups.
21. The role of proteins for the body, their nutritional and biological value. Consumption standards for various population groups.
22. Food fats, their classification and significance for the body. Consumption standards for the population taking into account climatic conditions.
23. Carbohydrates, their classification. Importance for the body and consumption rates.
24. Microelements and their classification. The importance of the mineral composition of food, the role of calcium and phosphorus, consumption rates.
25. Biological significance of iodine and fluorine for the body. Dental caries, fluorosis, endemic goiter and their prevention.
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27. Water-soluble vitamins, their importance for the body, sources and consumption rates.
28. Fat-soluble vitamins, their importance for the body, sources and consumption rates.
29. Vitamins and their classification. The role of vitamins in the prevention of dental diseases.
30. Biological role of B vitamins , sources, daily requirement.
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32. Biological role of vitamin D , sources, daily requirement for vitamin D.
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35. Food poisoning of microbial etiology. Basic principles of their investigation and prevention.
36. Food intoxication and its prevention.
37. Food mycotoxicoses and their prevention.
38. Food poisoning of non-microbial etiology and its prevention.
39. Dietary and therapeutic nutrition. Therapeutic and preventive nutrition at work and its importance for the body.
40. Types of buildings of medical institutions and hygienic requirements for their design.
41. Hygienic requirements for the design and placement of dental clinic premises.
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51. Specific diseases of the lungs and other organs under the influence of industrial dust. Pneumoconiosis, classification, features of the course, preventive measures.
52. Nonspecific diseases arising under the influence of industrial dust.
53. General patterns of the effects of industrial poisons on the body, measures to prevent occupational intoxication.
54. The concept of occupational hazards and occupational diseases among dentists.
55. Lead, zinc and their compounds. Effect on the body and preventive measures.
56. Carbon monoxide and sulfur dioxide, sources of formation, toxicological characteristics, prevention of poisoning.
57. Mercury and its compounds, use in industry and medicine, effects on the body and preventive measures.
58. Hygienic requirements for working with amalgam.
59. Basic health measures at industrial enterprises.
60. Hygienic requirements for the microclimate in dental clinics.
61. Safety rules and industrial sanitation in dental clinics.
62. Hygienic requirements for sterilization of dental instruments, dressings, utensils, etc.
63. Hygienic requirements for pre-sterilization treatment of dental equipment and instruments.
64. Hygienic requirements for the design of interior premises of dental clinics.
65. Hygienic requirements for the equipment of dental offices and premises of ZTL.
66. Sanitary and anti-epidemic regime and cleaning of dental clinics.

67. Personal hygiene rules for dental clinic personnel.
68. Occupational hygiene of dentists.
69. Patterns of growth and development of the child's body.
70. Methods for studying and assessing the physical development of children and adolescents.
71. Hygienic issues of accommodating people in emergency situations.
72. Medical control over nutrition and water supply of organized population groups in extreme conditions.

## **BANK OF SITUATIONAL PROBLEMS**

**Federal State Budgetary Educational Institution higher education  
"North Ossetian State Medical Academy"  
of the Ministry of Health of the Russian Federation**

**Department** of General Hygiene and Physical Culture  
**Faculty** of Dental  
**Discipline** Hygiene

**Course** III

### **Situational task No. 1**

When studying microclimatic conditions in a 3-bed ward with an area of  $21 \text{ m}^2$  (at a depth of 5.5 m and a height of 3.5 m) in the therapeutic department of the hospital, the following data were obtained:

- the readings of the thermometer placed on the light-carrying (outer) wall were  $20.5^\circ \text{C}$ , those placed on the opposite (inner) wall were  $22^\circ \text{C}$ , on the inner side wall (at a distance of 3 m from the light-carrying wall) -  $21.5^\circ \text{C}$ . All measurements were made at a height of 1 m from the floor.

The vertical temperature differences were  $1^\circ \text{C}$  for each meter of chamber height.

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

#### **Exercise**

Give a hygienic conclusion on the given situation.

### **Situational task No.2**

Determine air mobility and evaluate the type of microclimate in the children's ward, if the air temperature in it is  $21^\circ \text{C}$ , humidity is 50%, the cooling time of the catathermometer is 150 s (device factor is  $615 \text{ } \mu\text{cal} / \text{cm}^2$ ).

#### **Exercise**

1. Determine the speed of air movement.
2. Assess the type of microclimate in the children's ward.
3. What instruments are used to determine the speed of air movement?

### **Situational task No. 3**

A school classroom with an area of  $50 \text{ m}^2$  is illuminated by 3 rows of diffused-light ceiling fluorescent lamps LPO12  $2 \times 40$ , with a total of 18 pcs. The lamps use 2 white light fluorescent lamps (BS-40) with a power of 40 watts each.

#### **Exercise**

1. Assess the lighting in the classroom.
2. Give recommendations for optimizing lighting.
3. Indicate the difference between standardization of illumination with incandescent lamps and fluorescent lamps.

### **Situational task No.4**

In a school in a locality, it is necessary to organize preventive UV irradiation for students in grades 1-2 using EUV-30 lamps. The erythema flux of the EUV lamp is 540 mW/m<sup>2</sup>. The area of each classroom is 52 square meters. Height 3 m. Calculate the required number of erythema lamps on the basis that children should receive  $\frac{1}{4}$  bi-dose (to receive 1 bi-dose, a luminous flux of 5000 m is required).

#### **Exercise**

What irradiation facility is needed in this situation ?

### Situational task No.5

The rural settlement of 750 people has no running water. For drinking and household needs, water is used from mine or tube wells. The village has a livestock dairy farm and private farms with cows, sheep, goats and poultry. Solid waste is not removed and disposed of by burning on site, or cesspools are used. The results of the analysis of water from wells are as follows:

Indicators	Units	Type of well		SanPiN requirements
		mine	tubular	
Smell	point	No	No	not>2-3
Taste	point	No	No	not>2-3
Chroma	degree	>30	>30	>30
Turbidity	mg/l	1.3	0.5	1.5
Oxidability (permanganate )	mg O <sub>2</sub> /l	5.2	2.8	5
Rigidity	mg- eq /l	6.2	8.2	7 (up to 10)
Dry residue	mg/l	480	62.	1000 (up to 1500)
Sulfates	mg/l	210	280	500
Chlorides	mg/l	198	115	350
Iron	mg/l	0.4	1.2	0.3 (up to 10)
Fluorides	mg/l	1.2	2.0	1.5
Ammonia	mg/l	0.02	No	0.01
Nitrates (NO <sub>3</sub> )	mg/l	48	28	45
Microbial number	number of colonies	360	86	not>100
Coli index	number of E. coli /l	18	6	10

### Exercise

Give a hygienic conclusion on the given situation.

### Situational task No.6

Criteria for assessing water quality	Indicators
<b>Water analysis:</b>	
Color, deg	35°
Water temperature at intake, ° C	17°
Sediment	amorphous Brown
Turbidity, mg/l	2.2
Odor at 20°, points	musty 4
Taste at 20, points	salty 3
Dry residue, mg/l	720
Chlorides, mg/l	470
Sulfates, mg/l	610
Iron, mg/l	1.2
Total hardness, mmol /l	6.5
Ammonium salts, mg/l	2.1
Nitrites, mg/l	0.8
Nitrates, mg/l (based on NO <sub>3</sub> )	70
Oxidability, mg/l	6.7
Fluorine, mg/l	0.6
Thermotolerant coliform bacteria in 100 ml	3.0
Total microbial count in 1 ml	130
Spores of sulfite-reducing clostridia in 20 ml	2.0
Total α-radioactivity, Bq/l	0.17

### Exercise

1. Compare water quality indicators with hygienic standards.
2. What source is the water taken from?
3. What sanitary and chemical indicators indicate water contamination?
4. What is the nature of the pollution – recent, old, permanent?
5. Indicate methods for improving water quality.

### Situational task No.7

Criteria for assessing water quality	Indicators
<b>Water analysis:</b>	
Color, deg	50
Water temperature at intake, ° C	19
Sediment	amorphous brown
Turbidity, mg/l	20.0
Odor at 20°, points	4, swamp
Taste at 20, points	4, muddy
Dry residue, mg/l	640.0
Chlorides, mg/l	10
Sulfates, mg/l	8.0
Iron, mg/l	0.4
Total hardness, mmol /l	6.0
Ammonium salts, mg/l	0.2
Nitrites, mg/l	0.04
Nitrates, mg/l (based on NO <sub>3</sub> )	40.0
Oxidability, mg/l	14.0
Fluorine, mg/l	0.1
Common coliform bacteria in 100 ml	10
Total microbial count in 1 ml	12800
Total α-radioactivity, Bq/l	0.12

#### Exercise

1. Compare water quality indicators with hygienic standards.
2. What source is the water taken from?
3. What sanitary and chemical indicators indicate water contamination?
4. What is the nature of the pollution – recent, old, permanent?
5. Indicate methods for improving water quality.

### Situational task No.8

Criteria for assessing water quality	Indicators
<b>Water analysis:</b>	
Color, deg	35
Water temperature at intake, ° C	18
Sediment	absent
Turbidity, mg/l	2.0
Odor at 20°, points	1
Taste at 20, points	1
Dry residue, mg/l	122.0
Chlorides, mg/l	2.0
Sulfates, mg/l	40.0
Iron, mg/l	0.2
Total hardness, mmol /l	2.2
Ammonium salts, mg/l	0.5
Nitrites, mg/l	0.002
Nitrates, mg/l (based on NO <sub>3</sub> )	6
Oxidability, mg/l	6.6
Fluorine, mg/l	0.3
Common coliform bacteria in 100 ml	4
Total microbial count in 1 ml	400
Total α-radioactivity, Bq/l	0.15

#### Exercise

1. Compare water quality indicators with hygienic standards.
2. What source is the water taken from?
3. What sanitary and chemical indicators indicate water contamination?
4. What is the nature of the pollution – recent, old, permanent?
5. Indicate methods for improving water quality.

### Situational task No. 9

Criteria for assessing water quality	Indicators
<b>Water analysis:</b>	
Color, deg	15
Water temperature at intake, ° C	8
Sediment	absent
Turbidity, mg/l	1.2
Odor at 20°, points	1
Taste at 20, points	0
Dry residue, mg/l	600.0
Chlorides, mg/l	200.0
Sulfates, mg/l	108.0
Iron, mg/l	0.8
Total hardness, mmol /l	6.8
Ammonium salts, mg/l	0.02
Nitrites, mg/l	0.001
Nitrates, mg/l (based on NO <sub>3</sub> )	28.2
Oxidability, mg/l	4.8
Fluorine, mg/l	1.5
Common coliform bacteria in 100 ml	0
Total microbial count in 1 ml	42
Total α-radioactivity, Bq/l	0.1

#### Exercise

1. Compare water quality indicators with hygienic standards.
2. What source is the water taken from?
3. What sanitary and chemical indicators indicate water contamination?  
organic compounds.
4. What is the nature of the pollution – recent, old, permanent?
5. Indicate methods for improving water quality.

### Situational task No.10

To provide medical services to the village, it is planned to expand the existing hospital to 150 beds. An artesian well will be used to supply water. The depth of the well is 56 m. There is no sanitary protection zone and its creation is impossible due to the lack of free adjacent territory. Well flow rate is 15 m<sup>3</sup>/ day . The quality of well water is constant. Water properties: coliform bacteria – absent; total microbial number – 45 per ml; total mineralization – 760 mg/l; pH – 8.1; total hardness – 7 mg eq./l ; iron – 2.5 mg/l (MPC – 0.3 mg/l); fluorine – 1.2 mg/l (MPC – 1.0 mg/l); smell – 2 points; taste – 3 points, metallic; turbidity – 2 mg/l; color – 20 degrees.

#### Exercise

1. Give an opinion about the quality of water.
2. Justify the need for water treatment.
3. Give an opinion on the possibility of using the source for water supply.

### Situational task No.11

Criteria for assessing water quality	Indicators
<b>River water</b>	
Water temperature at intake, ° C	14
Color, deg	37
Smell and taste, points	2
Turbidity, mg/l	3.3
pH	6.8
Total hardness, mmol /l	7.5
Ammonium salts, mg/l	0.1
Nitrites, mg/l	No
Nitrates, mg/l (based on NO <sub>3</sub> )	No
Iron, mg/l	0.2
Oxidability, mg/l	9.0
Chlorides, mg/l	5.0
Sulfates, mg/l	8.0
Dense residue, mg/l	864.0
Fluorine, mg/l	0.2
Lead, mg/l	0.09
Strontium, mg/l	8.0
Arsenic, mg/l	0.06
Zinc, mg/l	6.0
Copper, mg/l	No
Saprobity	oligosaprobies
Common coliform bacteria in 100 ml	4
Total microbial count in 1 ml	80.0

#### Exercise

1. Compare water quality indicators with hygienic standards.
2. From what source is the water taken?
3. What sanitary and chemical indicators indicate water contamination?  
organic compounds.
4. What is the nature of the pollution - recent, old, permanent?
5. Indicate methods for improving water quality.

### Situational task No.12

When analyzing the menu layout for a male builder (41 years old), it was found that the energy value of his diet corresponds to daily energy expenditure and is 4200 kcal; amount of proteins – 120 g, of which animal origin – 60 g; fats – 130 g, of which vegetable origin – 30 g, carbohydrates – 500 g; vitamin C – 80 mg.

#### Exercise

1. Assess the builder's diet based on the following indicators:
  - compliance with the norm of the amount of nutrients in the diet, vitamin C;
  - compliance with the standard proportion of proteins of animal origin relative to their general quantity of vegetable fats relative to their total quantities;
  - the ratio of proteins, fats, carbohydrates.
2. Give a conclusion regarding the balance of the diet.

### Situational task No.13

A 30-year-old woman, basal metabolic rate (BMR) – 1350 kcal/ day , physical activity factor (PFA) – 1.4.

According to the menu layout, the composition of the diet: proteins – 65 g, of which animal – 35 g, fats – 95 g, of which vegetable – 45 g, carbohydrates – 295 g. Three meals a day, distribution of the energy volume of food during the day 25% – 25% – 50%.

#### Exercise

Assess nutritional adequacy women.



### **Situational task No.14**

In the gastroenterology department of the Central District Hospital, patients of two neighboring wards on Monday morning felt a deterioration in their condition, accompanied by an increase in temperature to 37.5 °C, dyspeptic symptoms, bloating, as well as disturbances in vision, chewing and swallowing.

During the survey, it turned out that relatives came to one of the patients on the weekend and were given home-canned products in the form of stew and squash caviar. One patient from the next ward was given home-made alcoholic beverages by his relatives. In the absence of control by medical personnel, the donated food and alcoholic beverages were consumed by patients in both wards. Patients in other wards were not injured.

#### **Exercise**

1. Suggest a probable mechanism of the disease and epidemic diagnosis. Who is responsible for organizing transfers in hospitals of medical organizations and how they are carried out transfers?
2. Suggest measures for cessation and prevention.

### **Situational task No.15**

A sample of beef meat, taken from the canteen of medical school No. 24 for the purpose of testing for finnosis, was delivered to the laboratory of the Center for Sanitary and Epidemiological Surveillance of the South-Western District of Moscow. Upon external examination, the meat has a dry crust on the surface. The surface of the meat is slightly moist, not sticky, and brown-red in color. The fat is yellowish and normal. When cut, the meat is dense, elastic, and the hole formed when pressed quickly flattens out. The smell of fresh meat. When cutting deep into the tissue, careful examination revealed oval-shaped bubbles, the size of a grain of wheat. Under microscopy, a formation characteristic of the Finnish bovine tapeworm is noted; the collapsed head of the parasite is visible inside the vesicle. When checking for viability, it was determined that the Finns were in a dead state. <sup>2 Finns were found</sup> on an area of 40 cm<sup>2</sup>.

#### **Exercise**

Give a sanitary and hygienic conclusion on the meat sample based on organoleptic indicators and microscopy data.

### **Situational task No.16**

In kindergarten, for lunch, eggplant caviar (canned industrial food from one of the collective farm canneries in the Krasnodar Territory) was given as a snack. After 7 hours, two children developed vomiting, abdominal pain, weakness, difficulty swallowing, and uneven dilation of the pupils. Later, symptoms such as drooping eyelids, hoarseness, and nasal speech appeared. Body temperature remained normal, but tachycardia was noted. The children were consulted by a neurologist and hospitalized in the neurological department with diagnoses of bulbar poliomyelitis and diphtheria polyneuritis. Despite the treatment, both children died within 24 hours. For five more children with similar complaints that appeared after 12-48 hours, a medical commission was organized, which included an infectious disease specialist, a neurologist and a pediatrician. The commission made a diagnosis of microbial food poisoning. It was found that all the sick children received eggplant caviar from the same can during lunch. As a result of the treatment, the last five children were saved.

#### **Exercise**

Analyze the described case of food poisoning using medical history and clinical data. Justify the diagnosis, indicate what additional laboratory tests are needed to clarify it, what immediate assistance should be for the victims, and suggest specific measures to prevent poisoning of this etiology.

### **Situational task No.17**

At the beginning of summer, a case of food poisoning was reported in one family in the village. In total, 8 people fell ill, including 3 children. Upon examination of the tonsils and the posterior wall of the pharynx, the local doctor diagnosed “septic tonsillitis”; the tonsillitis proceeded without fever. The fact that the whole family fell ill at the same time alerted the local doctor, on the basis of which he notified the district sanitary service about this disease.

Upon further investigation, a list of products was revealed that the family consumed for 2 weeks - meat, eggs, milk and dairy products from their farm, vegetables grown in their garden. The bread was baked at home. Flour was ground from last year's grain, which was stored in a cold outbuilding. After 4 days from the onset of the disease, the patients' condition worsened, the temperature began to rise, and pinpoint hemorrhages appeared on the skin in various parts of the body, including small bloody blisters on the mucous membrane of the mouth and tongue. The whole family was hospitalized. In the hospital, leukopenia, thrombocytopenia, and hypochromic anemia were detected. Despite the protracted course of the disease, no deaths were observed.

#### **Exercise**

1. Determine:
  - the group of food poisoning to which this poisoning belongs;
  - a product that may have caused poisoning.
2. Indicate preventive measures.

### **Situational task No.18**

During the regular preventive medical examination of workers in a workshop for the production of automobile batteries, 2 workers complained of frequent headaches of a dull, aching nature, rapid fatigue, muscle pain, trembling of the fingers, and periodic involuntary twitching of individual muscles.

From the anamnesis it was established that the work experience at this enterprise and in this workshop is more than 10 years. Upon examination it was established: the skin is pale with a grayish-earthy tint, the visible mucous membranes are pale. On the gums, mainly near the front teeth, there is a change in the color of the mucous membrane. It is painted purple in the form of stripes. There is tremor of the fingers. When palpating the arm muscles, pain is noted along the nerves.

#### **Exercise**

What kind of occupational disease can we talk about and what measures in this case should be provided by the medical unit of the enterprise?

### **Situational task No.19**

A noise study was carried out at the milling operator's workplace. Noise is generated during machine operation constantly and affects the worker for 6 hours per shift. The overall equivalent sound level is 85 dBA (maximum level is 90 dBA ).

At the same time, the maximum values in modes with time corrections I (impulse) and S (slow),  $L_{p,AI_{max}}$  and  $L_{p,AS_{max}}$ , respectively, are 75 and 95 dBA, in addition, pronounced tonal noise is detected at a frequency of 8000 Hz with a level of 30 dB.

#### **Exercise**

1. Assess the safety of the workplace.
2. Determine the nature of the noise.
3. Suggest measures to reduce its impact.

### **Situational task No. 20**

Before starting work in the aseptic dressing room of the surgical department, the CFU was 450 per 1 m<sup>3</sup> of air

#### **Exercise**

Assess microbial air pollution in the dressing room .

### Situational task No.21

In one of the workshops of the glass factory, air samples were taken for dust content. Sampling conditions: air flow rate 20 l/min, sampling time – 25 min, barometric pressure 760 mmHg. Art., air temperature – 20°C. After determination, 6 mg of dust was found in the sample.

#### Exercise

Give a hygienic assessment of the dust content in the workshop air if it is known that the dust contains more than 70% free silicon dioxide.

### Situational task No.22

When determining the dust content of air in a closed production room using the aspiration weighing method, the weight of the filter before taking an air sample was 26 mg; after aspiration of 53 liters of air produced under normal conditions, the weight became 43 mg. The maximum permissible concentration for this type of dust is 20 mg/m<sup>3</sup>.

#### Exercise

1. Calculate the actual concentration of dust in the air in mg/m<sup>3</sup>.
2. Assess the working conditions.
3. Name the main preventive measures aimed at improving working conditions.

### Situational task No.23

In the workshop for packaging potassium chloride into small containers, an air sample was taken with an electric aspirator and the main microclimate parameters were measured. Room temperature – 24 °C, relative humidity – 30%, air mobility – 0.6 m/sec; the content of potassium chloride in the air is 20 mg/m<sup>3</sup>.

Technological features of production organization: Work in terms of energy consumption intensity belongs to category II b (201–250 kcal/h). Packaging is carried out using special dosing devices in polyethylene containers. After the bags are accumulated from the dosing cup, they are conveyed along a conveyor belt to the sealing machine. The dosing machines are not equipped with ventilation devices; the workshop has general ventilation. When filling bags and transporting them, product spills occur. The premises are cleaned regularly using wet and dry methods.

Workers work in overalls without gloves or respirators. Some workers indicate occasional skin itching and redness of exposed parts of the body, dry skin of the hands and forearms.

#### Exercise

1. Assess the working conditions.
2. Mark the main harmful production factor.
3. Suggest measures to optimize working conditions.

### Situational task No.24

In an ore mining quarry, air samples were taken from an excavator loading rock to determine the concentration of dust, its chemical composition and the dispersion of dust particles.

The dust concentration in the air of the working area was 4 mg/m<sup>3</sup>. The dust contained 55% free silicon dioxide (MPC for this type of dust is 2 mg/m<sup>3</sup>). The dispersion of dust particles is presented in the table.

*Distribution of dust particles by dispersion.*

Dust particle sizes	up to 1.0 mmk	from 1 to 5 mmk	More than 5 mmk
Dust particle content in percent	15%	80%	5%

#### Exercise

Assess the working conditions at this workplace. Give recommendations for their improvement.

### **Situational task No.25**

After aspiration of air, before starting work with the Krotov operating apparatus, 5 minutes at a rate of 10 liters per minute, 15 colonies of microorganisms grew on a Petri dish.

#### **Exercise**

Assess the total microbial number of air in the operating room.

### **Situational task No.26**

The laboratory uses a radiation source with an activity of 100 mg/ eq.Ra, the operator's workplace is located at a distance of 0.5 m from him.

#### **Exercise**

Determine the permissible time of stay at the specified distance.

### **Situational task No.27**

The source of gamma radiation is cobalt-60 with an average quantum energy of 1.25 MeV.

#### **Exercise**

Determine the thickness of the lead screen required to reduce the radiation dose rate from 60 to 0.76  $\mu\text{R/s}$ .

### **Situational task No.28**

A nurse in the radiology department works 36 hours a week with radium preparations with an activity of 5 mg/eq.

#### **Exercise**

Determine the permissible distance at which the nurse can stay for the specified time.

### **Situational task No. 29**

Calculate the time during which you can work without a protective screen with a gamma radiation source with an activity of 15 mg/ eq. Ra at a distance of 0.5 m.

### **Situational task No.30**

Dental therapists work in an office with an area of 48 m<sup>2</sup>, the height of the room is 2.8 m, where there are 4 dental chairs. The lighting is fluorescent. The level of general illumination is 300 lux, the type of fluorescent lamps is LD. Local lighting is available in dental units. Natural air exchange is carried out due to the existing transoms, the area of which is 0.84 m<sup>2</sup>. The office has general supply and exhaust ventilation with an air exchange rate of +3 -2. The CO<sub>2</sub> content in the air is 0.15%. The position of dentists is sitting 40-50%, standing – 50-60%. The noise level in the workplace is 70 dB. At the end of their shift, dentists complain of headaches, increased fatigue, irritability, weakness, drowsiness, and redness of the mucous membranes of the eyes. In the air of the working area, it was determined that the maximum permissible concentration of the chemical substance was exceeded at a concentration of 15 mg/m<sup>3</sup>.

#### **Exercise**

1. Assess the layout of the dental office.
2. Name the main unfavorable factors when working as a dental therapist and their impact on health.
3. Assess artificial lighting. What types of fluorescent lamps should be in lamps?
4. Calculate the spacecraft and air exchange rate and give an assessment.
5. Offer recreational activities to improve health.

### Situational task No.31

A dental clinic (SP category V ) is expected to be built in one of the new districts of a city near Moscow near a green area at a sufficient distance from sources of noise and air pollution. The area of the selected plot is 0.3 hectares, the aspect ratio is 2:1, and there are convenient access routes. The following zones are provided on the site: landscaping (40%), clinic zone and utility zone. The clinic building will be located at a distance of 15 m from the red line; in front of the main entrance there will be a site for visitors with an area of 45 sq.m. 2 entrances to the territory are planned - to the clinic building and to the utility yard area (for garbage removal and waste from the joint venture).

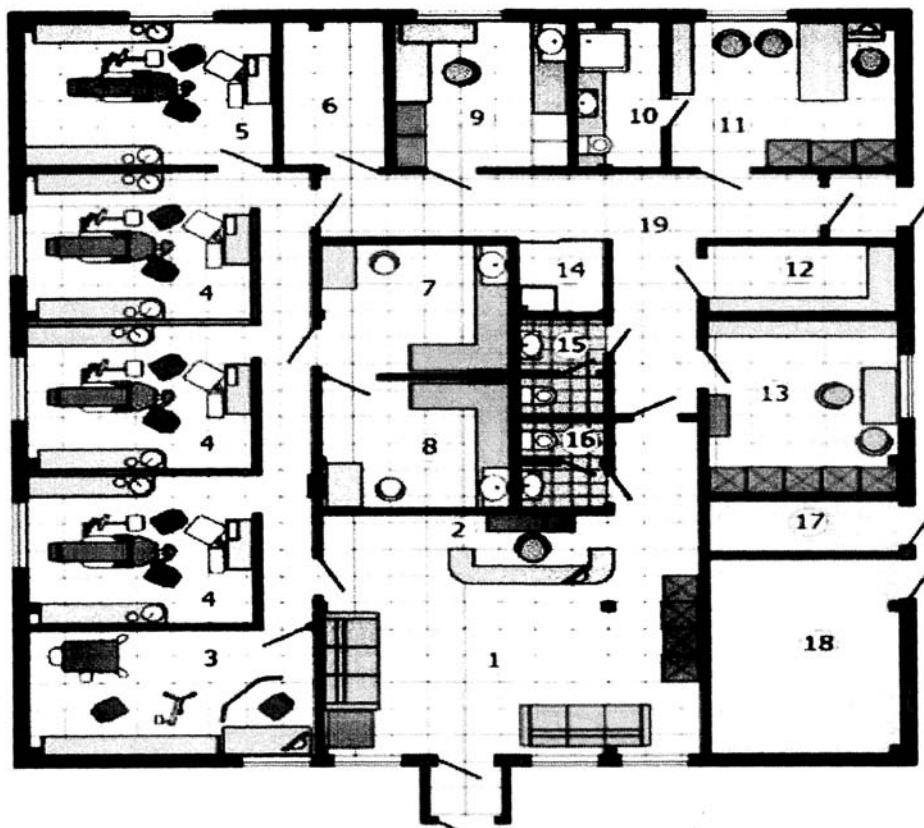
The clinic includes: a waiting room with a registration desk and a wardrobe for visitors' clothes, dental therapy rooms, a dental surgery room for pre-sterilization and sterilization, an X-ray room, staff rooms (a doctor's office, a nurse's room, a nursing room), storerooms, toilets for staff and patients, technical rooms.

The figure shows an explication of the clinic premises, their dimensions and equipment.

<i>Lobby-waiting room – 42 m<sup>2</sup></i>	<i>Personal hygiene room – 5.5 m<sup>2</sup></i>
<i>Registration with archive – 4 m<sup>2</sup></i>	<i>Doctor's office – 14 m<sup>2</sup></i>
<i>Corridor width – 2.5 m<sup>2</sup></i>	<i>Clean linen storage room – 6 m<sup>2</sup></i>
<i>Dental surgery room – 16.5 m<sup>2</sup></i>	<i>Room for nursing staff – 15 m<sup>2</sup></i>
<i>Dental office - 15 m<sup>2</sup></i>	<i>Cleaning equipment storage room – 2.4 m<sup>2</sup></i>
<i>Compressor room – 7 m<sup>2</sup></i>	<i>Staff bathroom with airlock – 3.75 + 5.5 m<sup>2</sup></i>
<i>Pre-sterilization room – 11 m<sup>2</sup></i>	<i>Patients' bathroom with airlock – 3.75 + 4.25 m<sup>2</sup></i>
<i>Sterilization room – 11 m<sup>2</sup></i>	<i>X-ray diagnostic room – 16.8 m<sup>2</sup></i>
<i>Hostess's sister's room – 11 m</i>	<i>Technical room – 17 m<sup>2</sup></i>
<i>Electrical control room – 4.5 m<sup>2</sup></i>	

### Exercise

Conduct a hygienic assessment of the submitted project and draw up a conclusion.



### Situational task No.32

The Central District Hospital includes children's and adult dental departments, located in a separate standard building. The children's department is not connected to the adult department; it has a separate entrance, wardrobe, waiting room and bathroom. The therapeutic dentistry department includes 4 rooms.

Each dental office has 3 chairs with universal dental units, the chairs are located in one row along the light-bearing wall. Between the chairs there are opaque partitions 1.5 m high. The walls up to the height of the doors are painted with light gray oil paint; the walls and ceilings above the panels are plastered. The floors are covered with linoleum with welded seams. The doors and windows are painted with white enamel. The height of the cabinets is 2.8 m, the depth is 5 m, the length is 7.3 m.

The windows of the offices are oriented to the north-west, their glazed surface area is 6.5 m<sup>2</sup>. For sterilization of instruments and preparation of amalgam there is a common room with a fume hood. The size of the working opening of the cabinet is 30 by 60 cm, exhaust ventilation provides an air speed of 0.6 m/s. The bottom of the cabinet is covered with linoleum, there is a trench and an enamel bowl for collecting mercury. General supply and exhaust ventilation. The CO<sub>2</sub> content in the air is 0.1%.

#### Exercise

1. Give a hygienic assessment of the clinic's layout, structure, equipment and interior decoration.
2. Indicate harmful production factors in the work of a dental therapist. Name measures to prevent possible occupational pathology.

### Situational task No.33

During an X-ray examination of the patient's lower jaw using the "Status - X" panoramic apparatus, the following organs received the highest equivalent radiation doses:

red bone marrow – 110  $\mu$ Sv

lungs – 240  $\mu$ Sv

mammary glands – 400  $\mu$ Sv

Weighting coefficients (W<sub>t</sub>) for the listed bodies are:

red bone marrow – 0.12

light – 0.12

mammary glands – 0.05

#### Exercise

Provide an assessment of the effective radiation dose received by the patient and, if necessary, recommendations for reducing the patient's radiation exposure.

### Situational task No.34

The presented figure shows the posture of a dentist during examination and treatment of a patient.

#### Exercise

Give a hygienic assessment of the doctor's working posture and name the possible adverse consequences of working in such a posture.



## SAMPLE CONDUCT

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### *business game "Investigation of a case of food poisoning"*

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Student A – patient  
Student B – emergency medical doctor  
Student B and G are members of the patient's family  
Student D – general practitioner at the clinic  
Students E and J – doctor and nurse at the clinic's day hospital  
Student Z is an expert giving an opinion on the situation

1. Student B comes to call students A, B and D. Student B examines the patient, finds out complaints, anamnesis and epidemiological anamnesis.
2. Students A, B and D answer the doctor's questions. It turns out that the patient, along with all family members, ate beef cutlets and boiled potatoes during lunch, and after 6 hours he felt nausea and weakness, and gastrointestinal discomfort.
3. Students C and D answer that they feel fine.
4. Student B finds out that some of the prepared lunch is still left and asks Students C and D to put potatoes and cutlets in a container for research in the appropriate laboratory.
5. As a result of the examination, the emergency doctor advises the patient to perform gastric lavage and refrain from eating until visiting the clinic.
6. The next day in the morning the patient comes to see the local therapist at the clinic. His health has improved somewhat. Student D examines student A, finds out complaints, anamnesis and epidemiological anamnesis, makes an entry in the outpatient card and sends the patient to the clinic laboratory for clinical tests. In addition, student A is sent by student D to the day hospital of the clinic.
7. Student E prescribes to student A: hemodez 400.0 ml, ascorbic acid - 5% 2.0 IV drops. Student F fulfills the specified assignments.
8. Towards the end of the next day after the poisoning incident, student A comes to the clinic to see student D and notes that nothing bothers him. Student D recommends student A to follow a diet until the end of the week (do not eat spicy, fried, salty, fatty foods, refrain from strong coffee, chocolate, carbonated drinks and juices).
9. Student D, having received a conclusion from the laboratory, makes a final diagnosis.
10. Student Z makes a remark to the emergency doctor: an emergency notification about the case of food poisoning was not sent to the appropriate department of Rospotrebnadzor. He has no comments about the therapist at the clinic.

## SAMPLE CONDUCT

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### *business game "Case Investigation" occupational disease"*

Student A – lead workshop worker

Student B – shop general practitioner

Student B – gastroenterologist

Student G – occupational pathologist

Student D – hospital doctor

Student E is an expert giving an opinion on the situation

1. Student A comes to student B for an appointment. Student B finds out the patient's complaints: general weakness, frequent headaches, decreased performance, frequent increases in blood pressure, pain in the right hypochondrium, dry mouth. Next, he examines the patient and writes him a referral for laboratory and instrumental examinations: general blood test, general urinalysis, lead content in urine, ultrasound of the abdominal organs. In this case, the doctor asks the patient to take tests the next day in the morning and come for an appointment 2 days later.
2. Student A comes back for an examination. Student B informs the patient about the results of the examination: the presence of lead intoxication is not confirmed, the lead content in the urine is normal. It is recommended to consult a gastroenterologist based on abdominal ultrasound data.
3. Student A visits a gastroenterologist, who, after reviewing the examination results, advises the patient to consult an occupational pathologist. Student A returns to Student B in order to receive an appropriate referral.
4. Student A comes to see student D. Student D listens carefully to student A, studies the results of his examinations and then clarifies how the urine sample was prepared to determine the lead content. It turns out that the patient passed his morning urine sample. Student G writes out a second referral to determine the lead content in urine and warns the patient that it is necessary to collect urine during the day and isolate 100-120 ml from the total amount for research. Student D also writes out a referral for student A to determine indicators characterizing liver function and asks to come back for an appointment 2 days after the tests.
5. When visiting the doctor again, student A learns that he has chronic lead poisoning and again comes to his shop therapist with the results of the examination.
6. Student B receives student A and gives him a referral to the hospital.
7. After being treated in a hospital, student A receives an extract from the medical history with a referral for rehabilitation treatment at a sanatorium-preventorium and recommendations for the management of the enterprise about his temporary transfer to a job that does not involve exposure to lead.
8. Student E comments on the tactics of students B, C, D, D and finds out who made mistakes and at what stage of this investigation.



**No. STOM-21**

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

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**Department of General Hygiene and Physical Culture**

**STANDARDS OF TEST TASKS**

in the discipline "**HYGIENE**"

the main professional educational program of higher education - specialty programs  
in the specialty 31.05.03 Dentistry ( educational program , partially implemented in English),  
approved on may 24, 2023.

**for** 3rd year students (5th semester)

**specialty** 31.05.03 Dentistry

Vladikavkaz, 2023

## Table of contents

No.	Name of the controlled section (topic) of the discipline/module	Code competence being formed (stage)	Number of tests (total)	p. from __ to __
1	2	3	4	5
<b>View control</b>	<b>Incoming knowledge control</b>	–	<b>71</b>	<b>From 27 to 33</b>
<b>View control</b>	<b>Current progress monitoring</b>			
1.	Environment, its influence on the body: a) air hygiene environment	UC-1	<b>57</b>	<b>from 34 to 40</b>
2.	b) water hygiene and water supply	UC-1	<b>40</b>	<b>from 41 to 45</b>
3.	Nutrition as a factor in maintaining and promoting health	PC-4 OPC-4	<b>71</b>	<b>from 46 to 53</b>
4.	Labor as an integral part of human existence and its positive and negative impact on health. Hygiene of medical and preventive organizations dental profile	PC-4 PC-5	<b>87</b>	<b>from 54 to 65</b>
			<b>52</b>	<b>from 66 to 72</b>
5.	Hygienic principles for ensuring normal development and high level of health of the child population.	PC-5	<b>27</b>	<b>from 73 to 76</b>

## Incoming control

1. **The greenhouse effect is associated with an increase in concentration in the atmosphere:**
  - a. sulfur oxides;
  - б. nitrogen oxides;
  - в. carbon dioxide;
  - г. ozone
2. **Optimal relative air humidity in a residential area in %:**
  - a. 15 – 20%;
  - б. 20–30%;
  - в. 40 – 60%;
  - г. 80 – 90%
3. **Part of the solar spectrum that has a bactericidal effect:**
  - a. visible light;
  - б. infrared rays;
  - в. ultra-violet rays;
  - г. all of the above are true
4. **Instrument used for continuous recording of air temperature:**
  - a. barograph;
  - б. thermograph;
  - в. psychrometer;
  - г. hygrograph
5. **Getting contaminated soil into a human wound can cause the development of:**
  - a. cholera;
  - б. salmonellosis;
  - в. botulism;
  - г. gas gangrene
6. **Find the correct conclusions: hard water has the following properties:**
  - a. may lead to swelling;
  - б. increases appetite;
  - в. speeds up cooking;
  - г. slows down cooking
7. **Death is caused by the body losing the amount of water in %:**
  - a. 3 – 5%;
  - б. 7–10%;
  - в. 15–20%;
  - г. 25–30%
8. **Daily human need for protein (in grams):**
  - a. 15–20;
  - б. 30–40;
  - в. 50–70;
  - г. 80–100
9. **Daily human need for fat (in grams):**
  - a. 30–40;
  - б. 50–70;
  - в. 80–100;
  - г. 100–120
10. **Daily human need for carbohydrates (in grams):**
  - a. 50 – 80;
  - б. 150–200;
  - в. 400–500;
  - г. 500–700

**11. Vitamin "C" is found most in :**

- a. cabbage;
- б. carrots;
- в. black currant;
- г. rosehip

**12. Lack of vitamin A in the body causes:**

- a. decreased bone strength;
- б. "night blindness";
- в. reduces blood clotting;
- г. reduces capillary permeability

**13. Check the correct statement:**

- a. botulism occurs when eating fried mushrooms;
- б. botulism occurs when consuming canned mushrooms;
- в. botulism occurs when eating fresh mushrooms;
- г. botulism occurs when eating cooked mushrooms

**14. The main routes by which poisons enter the body at work are:**

- a. gastrointestinal tract;
- б. airways;
- в. skin;
- г. mucous membranes of the mouth, eyes.

**15. From a hygienic point of view, the optimal heating system for residential premises is:**

- a. air;
- б. panel;
- в. water;
- г. steam

**16. Ions that cause water hardness:**

- a. iron, chlorine;
- б. calcium, magnesium;
- в. sodium, calcium;
- г. copper, magnesium

**17. The main functional role of proteins as nutrients:**

- a. energy;
- б. plastic;
- в. lytic;
- г. catalytic

**18. The main sources of phosphorus are the following products:**

- a. dried apricots;
- б. peas;
- в. beef liver;
- г. cottage cheese

**19. Check the correct statement:**

- a. staphylococcal poisoning often occurs with a normal temperature;
- б. staphylococcal poisoning often occurs with low-grade fever;
- в. staphylococcal poisoning often occurs with high fever;
- г. staphylococcal poisoning often occurs with high blood pressure

**20. Acid rain is caused by elevated concentrations in the atmosphere. substances:**

- a. sulfur oxides;
- б. ozone;
- в. oxygen;
- г. nitrogen

**21. Soil factor of transmission of infectious diseases:**

- a. tuberculosis;
- б. flu;
- в. cholera;
- г. anthrax

**22. The main functional role of water-soluble vitamins:**

- a. caloric;
- б. catalytic;
- в. plastic;
- г. energy

**23. Chemical compounds that cause destruction of the ozone layer:**

- a. sulfur oxides;
- б. freons;
- в. carbon oxides;
- г. iron oxides

**24. The following have an antirachitic effect:**

- a. infrared rays;
- б. blue rays;
- в. ultra-violet rays;
- г. red rays

**25. Dental caries is caused by the absence or small amount of microelements:**

- a. lead;
- а. selenia;
- б. zinc;
- в. fluoride

**26. Endemic goiter causes a lack of microelements in water:**

- a. zinc;
- б. copper;
- в. arsenic;
- г. iodine

**27. The appearance of cracks in the skin and mucous membranes is a sign of hypovitaminosis:**

- a. vitamin "B2" ;
- б. vitamin "A" ;
- в. vitamin "PP";
- г. vitamin "E"

**28. The greatest source of vitamin A in food is:**

- a. fish;
- б. bread;
- в. vegetable oil;
- г. fish liver

**29. Optimal distribution of caloric content of food in% with 3 meals a day:**

- a. 30–45–25;
- б. 15–50–35;
- в. 20–60–20;
- г. 25–50–25

**30. Duration of active attention in children 7-10 years old:**

- a. 10 minutes;
- б. 15 minutes;
- в. 20 minutes;
- г. 30 minutes

**31. "School" diseases include:**

- a. strabismus;
- б. nephropathy;
- в. scoliosis;
- г. color blindness

- 32. The main danger for medical personnel during x-ray examinations:**
- external irradiation;
  - blinding effect of the x-ray beam;
  - internal irradiation;
  - unfavorable microclimate
- 33. Optimal standards for the microclimate of dwellings, in contrast to acceptable ones :**
- do not depend on age and climatic region;
  - do not depend on age and depend on the climatic region;
  - depend on age and do not depend on the climatic region;
  - depend on age and depend on the climatic region.
- 34. In what disease does the bread crumb darken, become sticky and viscous, with an odor? valerian:**
- bread pigmentation;
  - chalk disease;
  - potato disease;
  - molding .
- 35. Average loss of vitamin C during cooking (in%):**
- 10–15;
  - 30;
  - 40;
  - 50.
- 36. The ratio of proteins, fats and carbohydrates in the diet of people doing heavy lifting physical labor should be:**
- 1–0.8–3;
  - 1–1.3–6;
  - 1–1–4;
  - 1–1–5.
- 37. What should be the ratio of proteins, fats and carbohydrates in the diet of people engaged in mental work:**
- 1–1–5;
  - 1–1–4;
  - 1–0.8–3;
  - 1–1,3–6.
- 38. Aquatic organisms living in natural layers and the thickness of the bottom of reservoirs are:**
- plankton;
  - benthos;
  - nekton;
  - periphyton.
- 39. Aquatic organisms living in the water column and capable of actively moving regardless of currents are:**
- benthos;
  - periphyton;
  - nekton;
  - plankton.
- 40. Decompression sickness occurs as a result of changes in blood concentration :**
- nitrogen;
  - carbon monoxide;
  - sulfur compounds;
  - oxygen.

- 41. A chemical compound in high concentrations that causes pulmonary edema:**
- a. hydrogen sulfide;
  - б. nitrogen oxides;
  - в. photooxidants ;
  - г. carbon dioxide.
- 42. Instrument used for continuous recording of air temperature:**
- a. barograph;
  - б. thermograph;
  - в. psychrometer;
  - г. hygrograph
- 43. The infectious diseases department of a hospital should be located:**
- a. in the main building;
  - б. on the upper floors of the medical building;
  - в. in a separate building;
  - г. in a separate wing of the medical building.
- 44. Recommended orientation of operating room windows:**
- a. southern;
  - б. northern;
  - в. eastern;
  - г. western
- 45. Optimal distribution of caloric content of food in% with 3 meals a day:**
- a. 30–45–25;
  - б. 15–50–35;
  - в. 20–60–20;
  - г. 25–50–25
- 46. Check the correct statement:**
- a. staphylococcal poisoning often occurs with a normal temperature;
  - б. staphylococcal poisoning often occurs with low-grade fever;
  - в. staphylococcal poisoning often occurs with high fever;
  - г. staphylococcal poisoning often occurs with high blood pressure.
- 47. From a hygienic point of view, the optimal heating system for residential premises is:**
- a. air;
  - б. panel;
  - в. water;
  - г. steam
- 48. Beri disease - Beri occurs when there is a lack of vitamin in the body:**
- a. B1;
  - б. PP;
  - в. Д;
  - г. К
- 49. Daily human need for carbohydrates (in grams):**
- a. 50–80;
  - б. 150–200;
  - в. 400–500;
  - г. 500–700
- 50. Lethal outcome is caused by the body losing the amount of water in %:**
- a. 3–5%;
  - б. 7–10%;
  - в. 15–20%;
  - г. 25–30%

- 51. Excess of a microelement causing dental fluorosis and other bone changes:**
- a. copper;
  - б. arsenic;
  - в. fluorine;
  - г. iodine
- 52. The greatest danger of developing silicosis is in:**
- a. explosives;
  - б. drivers;
  - в. locksmiths;
  - г. city of sandblasters.
- 53. Aquatic organisms living in natural layers and the thickness of the bottom of reservoirs are:**
- a. plankton;
  - б. benthos;
  - в. nekton;
  - г. periphyton.
- 54. Permissible water hardness:**
- a. 3.5 mg/l;
  - б. 7.0 mg/l;
  - в. 10 mg/l;
  - г. 14 mg/l.
- 55. Chemical substance - used as a coagulant in water treatment:**
- a. chlorine;
  - б. sodium hypochloride ;
  - в. aluminum sulfate;
  - г. manganese
- 56. Which of the following chemical compounds of water cause dyspepsia:**
- a. fluorides;
  - б. sulfates;
  - в. nitrates;
  - г. chlorides
- 57. Increased content of nitrates in the soil with a low amount of chlorides testifies:**
- a. about long-standing soil contamination;
  - б. about constant soil pollution;
  - в. about recent soil contamination;
  - г. about periodic soil pollution
- 58. The cause of the development of methemoglobinemia in humans may be the introduction into the soil of:**
- a. potash fertilizers;
  - б. nitrogen fertilizers;
  - в. phosphate fertilizers;
  - г. pesticides.
- 59. The outer shell of the earth, in which all its living matter is concentrated:**
- a. lithosphere;
  - б. noosphere;
  - в. biosphere;
  - г. stratosphere
- 60. Relative air humidity is measured in:**
- a. in mm.r t.st.;
  - б. in degrees;
  - в. in nanometers;
  - г. in percentages



**61. Indicate the physiological significance of carbon dioxide:**

- a. organic matter oxidizer;
- б. oxygen diluent;
- в. stimulation of the respiratory center;
- г. ventilation efficiency indicator

**62. The action of gastric juice enzymes is carried out in:**

- a. neutral environment;
- б. acidic environment;
- в. alkaline environment;
- г. does not depend on the acidity of the environment

**63. Colon bacteria are necessary for the digestion of:**

- a. nucleotides;
- б. glycogen;
- в. fat;
- г. fiber

**64. Digestion of most nutrients occurs in:**

- a. oral cavity;
- б. stomach;
- в. small intestine;
- г. large intestine

**65. Digestion is possible already in the oral cavity:**

- a. proteins;
- б. fat;
- в. carbohydrates;
- г. nucleotides

**66. An early manifestation of vitamin A deficiency is:**

- a. rickets;
- б. diabetes;
- в. night blindness;
- г. kwashiorkor

**67. Infrasound is:**

- a. electrical vibrations with a frequency higher than sound;
- б. mechanical vibrations and waves with a frequency of less than 16 Hz;
- в. mechanical vibrations and waves with a frequency of more than 20 kHz.

**68. The human hearing organ perceives the range of vibrations:**

- a. below 16 Hz;
- б. above 20,000 Hz;
- в. from 16 to 20,000 Hz

**69. Vibration is:**

- a. mechanical vibrations with different frequencies and amplitudes;
- б. mechanical vibrations with different frequencies;
- в. mechanical vibrations with different amplitudes

**70. Fatigue is:**

- a. physiological state of the human body that occurs during physical or mental work;
- б. the state of the body is close to pathological;
- в. pathological condition of the body

**71. Human adaptation by its nature can be:**

- a. genotypic, phenotypic;
- б. genotypic, genetic;
- в. phenotypic, genetic

## **"The environment and its influence on the body. Air hygiene"**

- 1. Acclimatization is:**
  - a. the process of adaptation to climatic factors;
  - б. the process of adaptation to weather conditions;
  - в. changes in the body during the adaptation process;
  - г. meteosensory reaction;
  - д. meteorological disease.
- 2. Composition of atmospheric air:**
  - a. nitrogen – 81%, oxygen – 18%, carbon dioxide – 1%;
  - б. nitrogen – 75%, oxygen – 21%, carbon dioxide – 4%;
  - в. nitrogen – 78%, oxygen – 21%, carbon dioxide – 1%;
  - г. nitrogen – 78%, oxygen – 21%, carbon dioxide – 0.03%;
  - д. nitrogen – 79%, oxygen – 19%, carbon dioxide – 0.04%.
- 3. The occurrence of meteosensory reactions in humans is associated with changes in:**
  - a. weather conditions;
  - б. climate;
  - в. indoor microclimate.
- 4. The body function most sensitive to changes in microclimatic conditions is:**
  - a. thermoregulation;
  - б. breathing;
  - в. digestion;
  - г. activity of the cardiovascular system.
- 5. Diseases that occur in humans during sudden decompression:**
  - a. altitude sickness;
  - б. decompression sickness;
  - в. altitude sickness.
- 6. High air temperatures are easier to tolerate:**
  - a. at high humidity;
  - б. at low humidity.
- 7. The permissible horizontal air temperature difference in a living room is:**
  - a. 1 °C ;
  - б. 2 °C ;
  - в. 3 °C ;
  - г. 4°C.
- 8. Dew point is:**
  - a. the elasticity of water vapor currently in the air;
  - б. the elasticity of water vapor in a state of complete saturation of the air with it;
  - в. the temperature at which absolute humidity becomes maximum.
- 9. The concept of relative air humidity:**
  - a. the ratio of absolute humidity to maximum, expressed in %;
  - б. difference between maximum and absolute humidity;
  - в. the elasticity of water vapor currently in the air.

- 10. To directly measure relative humidity, the following device is used:**
- a. hygrometer;
  - б. psychrometer;
  - в. hygrograph;
  - г. barometer;
  - д. thermometer.
- 11. Which part of the solar spectrum causes sunstroke:**
- a. ultraviolet;
  - б. visible ;
  - в. shortwave infrared;
  - г. long wave infrared.
- 12. Relative humidity standards in residential and public buildings:**
- a. 20-40%;
  - б. 30-40%;
  - в. 30-60%;
  - г. 50-60%;
  - д. 50-70%.
- 13. Instruments for measuring radiant heat:**
- a. thermometers;
  - б. actinometers;
  - в. catathermometers;
  - г. hygrometers.
- 14. When the air temperature is higher than the temperature of human skin, heat transfer occurs mainly through:**
- a. thermal radiation;
  - б. evaporation;
  - в. heat conduction (convection).
- 15. Saturation deficit is:**
- a. the difference between maximum and absolute air humidity;
  - б. the difference between the maximum humidity at a temperature of 37 ° C and absolute
  - в. humidity.
- 16. Infrared rays have greater penetrating power:**
- a. shortwave;
  - б. long wave.
- 17. Air humidity is normalized:**
- a. absolute;
  - б. minimal;
  - в. relative.
- 18. Fluctuations in the average daily air temperature in the room should not exceed:**
- a. 1 °C ;
  - б. 2 °C ;
  - в. 3 °C ;
  - г. 4°C.

- 19. The normal air speed in residential premises is:**
- a. 0.4-0.6 m/sec;
  - б. 0.1-0.3 m/sec;
  - в. 0.02-0.04 m/sec;
  - г. 0.05-0.1 m/sec;
  - д. 1-1.5 m/sec.
- 20. Carbon dioxide from atmospheric air is involved in :**
- a. stimulation of the respiratory center;
  - б. heat transfer ;
  - в. digestion ;
  - г. energy metabolism ;
  - д. dilution .
- 21. At an air temperature of 15-20 °C, heat transfer from the surface of the skin occurs mainly through:**
- a. thermal radiation;
  - б. evaporation;
  - в. heat conduction (convection).
- 22. In a state of thermal comfort, heat loss by radiation is:**
- a. 15.3%;
  - б. 29.1%;
  - в. 35.3%;
  - г. 55.6%.
- 23. To directly measure relative humidity, the following device is used:**
- a. hygrometer;
  - б. psychrometer;
  - в. hygrograph;
  - г. barometer;
  - д. thermometer.
- 24. Under normal (room) temperatures, the main heat loss occurs through :**
- a. skin;
  - б. lungs;
  - в. with physiological functions.
- 25. Low atmospheric pressure causes:**
- a. mountain sickness;
  - б. load when moving;
  - в. decompression sickness;
  - г. radiation injuries;
  - д. noise sickness
- 26. Microclimate is:**
- a. a natural sequence of meteorological processes that stands out in the long-term weather regime in a given area;
  - б. combination of meteorological conditions indoors;
  - в. a combination of meteorological conditions in the ground layer of small areas of the earth's surface.

- 27. The concept of maximum air humidity:**
- a. the elasticity of water vapor saturating the air at a given temperature;
  - б. elasticity of water vapor saturating the air at 0 °C ;
  - в. the amount of water vapor (in grams) required to saturate 1 m<sup>3</sup> of air at a given temperature.
- 28. The speed of air movement in enclosed spaces is determined using the device:**
- a. cup anemometer;
  - б. vane anemometer;
  - в. catathermometer;
  - г. barometer;
  - д. hygrometer.
- 29. Optimal temperature, humidity and air speed:**
- a. 20 °C ; 50%; 2.5 m/sec;
  - б. 15 °C ; 60%; 4 m/sec;
  - в. 25 °C ; thirty%; 5 m/sec;
  - г. 18 °C ; 70%; 1 m/sec;
  - д. 20 °C ; 50%; 0.5 m/sec.
- 30. Atmospheric air takes part in :**
- a. breathing ;
  - б. formation of indoor air environment;
  - в. hardening ;
  - г. digestion ;
  - д. maintaining body cleanliness.
- 31. Conditions under which a person may be exposed to increased atmospheric pressure:**
- a. diving work;
  - б. caisson works;
  - в. construction of underwater tunnels;
  - г. mountain climbing;
  - д. flights on aeronautical vehicles.
- 32. Hyperthermia of the body is promoted by:**
- a. heat;
  - б. low air mobility;
  - в. high air mobility;
  - г. low humidity;
  - д. high humidity.
- 33. The air temperature in the room is measured:**
- a. thermograph;
  - б. thermometer;
  - в. hygrograph;
  - г. Assmann psychrometer .
- 34. The following areas will be distinguished in the integral flux of the solar spectrum:**
- a. ultraviolet radiation;
  - б. visible light;
  - в. infrared radiation;
  - г. cosmic radiation.

- 35. Indications for preventive irradiation with artificial UV radiation:**
- a. presence of signs of hypovitaminosis D ;
  - б. work in conditions of isolated sunlight;
  - в. living in northern latitudes;
  - г. increased atmospheric pressure.
- 36. The leading air pollutants in populated areas are:**
- a. suspended solids;
  - б. carbon monoxide;
  - в. carbon dioxide;
  - г. sulfur dioxide;
  - д. trioxide .
- 37. Climate formation is influenced by:**
- a. geographical location of the region;
  - б. cyclonic activity;
  - в. the nature of the underlying surface of the earth;
  - г. intensity of solar radiation;
  - д. human economic activity.
- 38. Successful acclimatization of a person in northern, cold conditions is facilitated by:**
- a. food with high energy value;
  - б. increasing the amount of vitamin C ;
  - в. warm clothes and rational housing;
  - г. a clear regime of work and rest during the polar night;
  - д. daily physical activity.
- 39. Successful acclimatization of a person in a hot climate is facilitated by:**
- a. rational diet;
  - б. lightweight clothing and rational housing;
  - в. reduction in the amount of animal proteins;
  - г. capital housing;
  - д. animal products in the diet.
- 40. Unfavorable weather leads to :**
- a. exacerbation of chronic diseases;
  - б. seasonal diseases;
  - в. meteorological diseases;
  - г. decreased appetite.
- 41. Conditions under which a person may be exposed to low atmospheric pressure:**
- a. diving work;
  - б. caisson works;
  - в. construction of underwater tunnels;
  - г. mountain climbing;
  - д. flights on aeronautical vehicles.
- 42. The main factors affecting humans in mountain climates are:**
- a. low atmospheric pressure;
  - б. reduced air temperature;
  - в. increased UV radiation ;
  - г. reduced partial pressure of oxygen;
  - д. increased atmospheric pressure.

- 43. The factors determining the microclimate are:**
- a. illumination;
  - б. air temperature;
  - в. air humidity;
  - г. air speed;
  - д. barometric pressure.
- 44. Biological effect of solar radiation at the surface of the earth:**
- a. stimulating immunity;
  - б. immunosuppressant ;
  - в. erythema- tan ;
  - г. antirachitic;
  - д. bactericidal.
- 45. Biological significance of the visible part of the solar spectrum:**
- a. has a general stimulating effect on the body;
  - б. determines the possibility of visual function of the eye;
  - в. has an erythema effect.
- 46. Possible adverse effects of solar radiation:**
- a. sunstroke;
  - б. sensitization;
  - в. hyperthermia;
  - г. erythema;
  - д. radiation sickness.
- 47. Reasons for the decrease in natural UV radiation in the north:**
- a. low position of the sun above the horizon;
  - б. constant cloudiness;
  - в. low air temperature;
  - г. a small number of sunny days per year.
- 48. High air temperature causes:**
- a. sunstroke;
  - б. convulsive illness;
  - в. disruption of circadian rhythms;
  - г. heatstroke;
  - д. drying of mucous membranes.
- 49. Hypothermia of the body is promoted by:**
- a. low air temperature;
  - б. low air mobility;
  - в. high air mobility;
  - г. low air humidity;
  - д. high air humidity.
- 50. Biological effect of the infrared part of the solar spectrum:**
- a. causes heating of the skin;
  - б. increases body temperature;
  - в. dilates skin vessels;
  - г. has a bactericidal effect.

**51. Factors influencing the intensity of natural UV radiation:**

- a. transparency of the atmosphere;
- б. solar Activity;
- в. the height of the sun above the horizon;
- г. height of the area above the sea surface;
- д. amount of green space.

**52. Atmospheric oxygen is involved in :**

- a. breathing ;
- б. stimulation of the respiratory center;
- в. thermoregulation;
- г. water exchange ;
- д. energy metabolism.

**53. Conditions under which a person may be exposed to low atmospheric pressure:**

- a. diving work;
- б. caisson works;
- в. construction of underwater tunnels;
- г. mountain climbing;
- д. flights on aeronautical vehicles.

**54. Biological effect of the UV region of the solar spectrum:**

- a. tan ;
- б. vitamin-forming ;
- в. erythema ;
- г. bactericidal;
- д. thermal

**55. Signs of ultraviolet erythema:**

- a. clear boundaries of the irradiation zone;
- б. transition of erythema to tan;
- в. blurred boundaries of the irradiation zone;
- г. the presence of a latent period of occurrence;
- д. no latent period of occurrence.

**56. Contraindications to preventive irradiation with artificial UV radiation:**

- a. active form of tuberculosis;
- б. thyroid diseases;
- в. pronounced atherosclerosis;
- г. chronic liver and kidney diseases in the acute stage;
- д. malignant neoplasms.

**57. For the formation of photochemical fog, the presence in the atmosphere must be:**

- a. nitrogen dioxide;
- б. ultraviolet radiation of a certain wavelength;
- в. infrared radiation of a certain wavelength;
- г. hydrocarbons;
- д. carbon dioxide.



**"The environment and its influence on the body.  
Hygiene of water and water supply"**

- 1. Low microbial contamination is typical for water sources :**
  - a. artesian;
  - б. ground;
  - в. superficial.
- 2. Dry residue and hardness of groundwater with depth:**
  - a. decrease;
  - б. increase;
  - в. do not change.
- 3. The organoleptic properties of water include:**
  - a. smell, taste;
  - б. smell, taste, color;
  - в. smell, taste, color, turbidity;
  - г. smell, taste, color, turbidity, hardness.
- 4. The most favorable drinking water temperature is:**
  - a. less than 7 °C ;
  - б. 7-12 °C ;
  - в. more than 12°C.
- 5. When rationing the content of chemicals in drinking water, the climatic region is taken into account:**
  - a. for fluorine;
  - б. for fluorine and arsenic;
  - в. for fluorine, arsenic, lead;
  - г. for all chemicals regulated in drinking water.
- 6. Consumption of water with a fluoride content of less than 1 mg/l contributes to the occurrence of the disease:**
  - a. fluorosis;
  - б. caries;
  - в. hyperkeratosis;
  - г. urolithiasis .
- 7. Cause of endemic goiter:**
  - a. drinking water low in iodine;
  - б. drinking water high in iodine;
  - в. eating foods low in iodine;
  - г. eating foods high in iodine.
- 8. The most common method of disinfecting drinking water at a waterworks:**
  - a. chlorination;
  - б. UV irradiation ;
  - в. ozonation.
- 9. When disinfecting drinking water with chlorine-containing preparations, the organoleptic properties of water can:**
  - a. improve;
  - б. deteriorate;
  - в. don't change.

- 10. The taste of drinking water depends on :**
- a. water temperature;
  - б. temperature of water and dissolved gases;
  - в. temperature of water, dissolved gases and salts.
- 11. The taste of tap water should be no more than:**
- a. 3;
  - б. 2;
  - в. 0.
- 12. Hard drinking water is one of the etiological factors in the development of:**
- a. endemic goiter;
  - б. fluorosis;
  - в. urolithiasis .
- 13. Long-term consumption of water with a high concentration of nitrates causes the disease:**
- a. fluorosis;
  - б. methemoglobinemia ;
  - в. caries;
  - г. urolithiasis .
- 14. Viral disease spread by water:**
- a. parotitis;
  - б. polio;
  - в. typhoid fever;
  - г. tularemia;
  - д. giardiasis .
- 15. When disinfecting drinking water with ozone, its organoleptic properties:**
- a. worsen;
  - б. do not change;
  - в. are improving.
- 16. Long-standing and constant contamination of a water source is characterized by the presence of:**
- a. ammonia and nitrates;
  - б. ammonia and nitrites;
  - в. nitrates;
  - г. ammonia, nitrites, nitrates.
- 17. Endemic goiter is a consequence of:**
- a. lack of fluoride;
  - б. excess fluoride;
  - в. iodine deficiency;
  - г. excess iodine.
- 18. Infection caused by protozoa and spread by water:**
- a. giardiasis ;
  - б. cholera;
  - в. hepatitis A ;
  - г. typhoid fever;
  - д. parotitis.

**19. Bacterial infection spread by water:**

- a. giardiasis ;
- б. cholera;
- в. hepatitis A ;
- г. amoebic dysentery;
- д. parotitis.

**20. Groups of indicators for assessing the quality of drinking water according to SanPiN 2.1.4.1074-01:**

- a. epidemic water safety;
- б. harmlessness of the chemical composition;
- в. optimal content of microelements in water;
- г. ensuring favorable organoleptic properties of water;
- д. suitability of water for fish farming.

**21. The mineral composition of the water may be the main reason:**

- a. water fever;
- б. convulsive illness;
- в. fluorosis;
- г. endemic goiter;
- д. caries.

**22. Excess iron in drinking water:**

- a. worsens the organoleptic properties of water;
- б. causes irritation of the mucous membranes of the oral cavity;
- в. limits the use of water for domestic purposes.

**23. The following can be transmitted through water:**

- a. typhoid fever;
- б. typhus;
- в. tularemia;
- г. hepatitis A ;
- д. Hepatitis B.

**24. Physical methods for disinfecting drinking water include:**

- a. use of hydrogen peroxide;
- б. Ural Federal District;
- в. boiling;
- г. UZK;
- д. oligodynamic effect of silver.

**25. Special methods for improving the quality of drinking water:**

- a. deactivation;
- б. lightening;
- в. deodorization;
- г. degassing;
- д. cleaning

**26. Hygienic standardization of water quality is carried out according to :**

- a. organoleptic indicators;
- б. microbiological indicators;
- в. chemical indicators;
- г. biochemical parameters;
- д. physiological indicators.

- 27. Substances and indicators indicating water contamination with organic substances:**
- a. ammonia;
  - б. nitrites;
  - в. nitrates;
  - г. oxidability;
  - д. iron.
- 28. The reason for the development of water-nitrate methemoglobinemia :**
- a. drinking water high in nitrites;
  - б. drinking water high in nitrates;
  - в. drinking water with high ammonia content.
- 29. Characteristic signs of water epidemics:**
- a. slow rise of the incidence curve;
  - б. rapid rise in the incidence curve;
  - в. a short stay of the curve at a high level and a rapid decline;
  - г. connection of diseases with the use of water from a certain source;
  - д. attaching a “contact tail” in outbreaks caused by a contagious
  - е. pathogen.
- 30. Methods for disinfecting drinking water:**
- a. coagulation ;
  - б. chlorination;
  - в. fluoridation;
  - г. ozonation;
  - д. treatment with ultraviolet rays.
- 31. Drinking water should:**
- a. have favorable organoleptic properties;
  - б. do not contain salts;
  - в. be harmless in chemical composition;
  - г. be safe in terms of epidemics;
  - д. be radiation safe.
- 32. Disorders that occur when drinking water with high chloride content**
- a. decreased gastric secretion;
  - б. decreased intestinal secretion;
  - в. increased motor function of the stomach and intestines;
  - г. inhibition of renal excretory function;
  - д. violation of the feeling of thirst quenching.
- 33. The main ways to improve the quality of drinking water:**
- a. disinfection;
  - б. desalination;
  - в. fluoridation;
  - г. lightening;
  - д. deferrization .
- 34. Features of the salt composition of water are a risk factor for :**
- a. dysentery;
  - б. diabetes;
  - в. urolithiasis;
  - г. hypertension;
  - д. hepatitis A.

**35. Reagents used for coagulation:**

- a. chlorine;
- б. ferric chloride;
- в. aluminum sulfate;
- г. iron sulfate.

**36. Special methods for improving the quality of drinking water include:**

- a. fluoridation;
- б. desalination;
- в. chlorination;
- г. coagulation;
- д. deferrization .

**37. Methods for clarifying drinking water:**

- a. chlorination;
- б. settling;
- в. filtration;
- г. coagulation.

**38. Physical methods for disinfecting drinking water:**

- a. boiling;
- б. exposure to UV rays ;
- в. chlorination;
- г. exposure to gamma rays;
- д. exposure to ultrasound.

**39. Indicators indicating organic water pollution:**

- a. ammonia;
- б. nitrites;
- в. nitrates;
- г. oxidability;
- д. chlorides.

**40. Chemical methods for disinfecting drinking water:**

- a. boiling;
- б. chlorination;
- в. UV irradiation ;
- г. ozonation;
- д. use of the oligodynamic action of metals.

## **"Nutrition as a factor in maintaining and promoting health"**

- 1. Optimal distribution of calorie content of food into individual meals with three meals a day (in percentage):**
  - a. 30-45-25;
  - б. 15-50-35;
  - в. 20-60-20.
- 2. Caloric ratio of proteins and carbohydrates:**
  - a. 3 kcal/g;
  - б. 4 kcal/g;
  - в. 5 kcal/g;
  - г. 6 kcal/g.
- 3. Recommended percentage of vegetable fats in daily fat content:**
  - a. 10-15;
  - б. 25-30;
  - в. 40-50.
- 4. Foods that are rich sources of well-absorbed calcium:**
  - a. milk and dairy products;
  - б. vegetables and fruits;
  - в. leguminous products;
  - г. meat and meat products;
  - д. fish and fish products.
- 5. Diseases associated with B1<sub>vitamin</sub> deficiency:**
  - a. scurvy;
  - б. rickets;
  - в. alimentary polyneuritis;
  - г. fatty infiltration of the liver;
  - д. hemeralopia.
- 6. The physical activity coefficient reflects the ratio:**
  - a. general energy expenditure with the basal metabolic rate;
  - б. energy expenditure on physical and mental activity.
- 7. Of the total amount of protein, animal proteins in the diet of the adult population should be:**
  - a. 35%;
  - б. 45%;
  - в. 55%;
  - г. 60%.
- 8. Violation of collagen synthesis in the human body occurs due to vitamin deficiency:**
  - a. A;
  - б. WITH;
  - в. E;
  - г. D. \_
- 9. What is the ratio of calcium to phosphorus in milk?**
  - a. 1:2;
  - б. 1:4;
  - в. 1:0.8.

- 10. The incubation period for staphylococcal toxicosis usually lasts up to :**
- a. 10 hours;
  - б. 8 ocloc'k;
  - в. 6 hours.
- 11. The most favorable ratio in the diet of an adult between calcium and phosphorus salts is:**
- a. 1:0.8 – 1.0;
  - б. 1:0.8 – 1.2;
  - в. 1:1 – 1.5;
  - г. 1:1.2 – 1.5.
- 12. Determining the time of dark adaptation characterizes the body's supply of vitamins:**
- a. A;
  - б. D ;
  - в. WITH.
- 13. The main source of pathogens of staphylococcal toxicosis is:**
- a. cattle;
  - б. small cattle;
  - в. Human.
- 14. The main energy function in the body is performed by:**
- a. vitamins;
  - б. carbohydrates;
  - в. proteins;
  - г. fats;
  - д. minerals.
- 15. Effect of phosphorus on the human body:**
- a. antiseptic;
  - б. anti-inflammatory and desensitizing;
  - в. participation in hemoglobin synthesis;
  - г. participation in thyroid function;
  - д. influence on the state of nervous tissue.
- 16. caused by burns or infected wounds on the hands of food service workers?**
- a. botulism;
  - б. staphylococcal intoxication;
  - в. toxicoinfection caused by Cl . Perfringens ;
  - г. salmonellosis.
- 17. Disturbances in the metabolism of calcium and phosphorus in the body occur due to vitamin deficiency:**
- a. A;
  - б. WITH;
  - в. E;
  - г. D.
- 18. Effect of iron on the human body:**
- a. antispastic;
  - б. anti-inflammatory and desensitizing;
  - в. participation in hemoglobin synthesis;
  - г. participation in thyroid function;
  - д. influence on the state of nervous tissue.

- 19. Meat is a major source of the following nutrients except:**
- a. proteins;
  - б. fats;
  - в. carbohydrates;
  - г. minerals.
- 20. Vegetables and fruits in human nutrition are sources of:**
- a. proteins, fats, carbohydrates;
  - б. carbohydrates, dietary fiber, vitamins, minerals;
  - в. proteins, dietary fiber, vitamins.
- 21. In the pathogenesis of foodborne toxic infections , the main role is played by:**
- a. live microbes that have multiplied in food;
  - б. toxins formed in food as a result of the proliferation of microbes.
- 22. The role of iodine in the life of the human body:**
- a. antiseptic;
  - б. anti-inflammatory and desensitizing;
  - в. participation in hemoglobin synthesis;
  - г. participation in thyroid function;
  - д. influence on the state of nervous tissue.
- 23. Vitamin E is involved:**
- a. in the formation of bone tissue;
  - б. in antioxidant protection;
  - в. in hematopoiesis .
- 24. More than 20% of protein comes from plant foods:**
- a. bread;
  - б. legumes;
  - в. oilseeds
- 25. Osteoporosis is caused by vitamin deficiency:**
- a. A;
  - б. B<sub>1</sub>;
  - в. WITH;
  - г. D;
  - д. E.
- 26. The main source of vitamin E in the diet:**
- a. vegetable oil;
  - б. dairy products;
  - в. fruits.
- 27. The lowest heat resistance during cooking vitamin:**
- a. A;
  - б. B<sub>1</sub>;
  - в. WITH;
  - г. D.
- 28. The optimal ratio of proteins, fats and carbohydrates in adult diets working-age population is:**
- a. 1:1:4;
  - б. 1:0.8:5;
  - в. 1:1,1:4,8;
  - г. 1:0.8:3;
  - д. 1:1:6.



- 29. Grain processing products are deficient in vitamins:**
- group B ;
  - E.
- 30. Rational nutrition means:**
- sufficient energy value of the diet as a result of adequate intake of proteins, fats and carbohydrates;
  - compliance of the enzyme set with the chemical structure of the food;
  - optimal ratio of nutritional and biologically active substances;
  - optimal diet.
- 31. What indicators can be used to assess the adequacy of individual nutrition:**
- correspondence of actual body weight to ideal;
  - compliance of energy expenditure with the energy value of the daily diet;
  - absolute quantity and ratio of nutrients and biologically active substances in the diet;
  - the good quality of the products included in the diet.
- 32. What quantities make up the daily energy expenditure?**
- basal metabolism;
  - specific dynamic action of food;
  - energy expended on various activities;
  - working time.
- 33. Unsaturated fatty acids include:**
- oleic;
  - linoleic ;
  - arachidonic ;
  - stearic
- 34. Disorders that occur with protein deficiency:**
- development of fatty liver infiltration;
  - changes in the chemical composition and morphological structure of bones;
  - changes in the endocrine glands and a decrease in their functional ability;
  - decrease in the immunobiological reactivity of the body.
- 35. The concept of “diet mode” includes:**
- frequency of meals;
  - intervals between meals;
  - distribution of energy value among meals;
  - the nature of the products consumed during the week.
- 36. Biological role of proteins:**
- are plastic material;
  - participate in the synthesis of hormones;
  - participate in the synthesis of enzymes;
  - participate in the synthesis of antibodies;
  - participate in the synthesis of hemoglobin.
- 37. The nutritional value of vegetables and fruits is determined by:**
- high content of plant proteins;
  - lack of palatability ;
  - good organoleptic properties;
  - mineral content;
  - vitamin content.

- 38. Biological role of calcium:**
- a. participates in the formation of skeletal bones;
  - б. participates in the process of blood clotting;
  - в. necessary to maintain normal neuromuscular excitability;
  - г. promotes the absorption of proteins.
- 39. Deficient nutrition is associated with :**
- a. gastritis, enteritis, colitis;
  - б. nutritional dystrophy;
  - в. hypovitaminosis;
  - г. gout.
- 40. The amount of basal metabolism depends on:**
- a. from the floor;
  - б. from age;
  - в. from body weight;
  - г. from physical activity.
- 41. Grain products are a dietary source of:**
- a. vegetable protein;
  - б. fats;
  - в. carbohydrates;
  - г. minerals;
  - д. vitamin C.
- 42. Total daily energy expenditure consists of energy expenditure:**
- a. for basal metabolism;
  - б. on the specific dynamic effect of food;
  - в. for physical activity;
  - г. for heat exchange.
- 43. The most deficient essential amino acids are:**
- a. tryptophan;
  - б. arginine;
  - в. lysine;
  - г. methionine
- 44. Foods that are rich sources of polyunsaturated fatty acids:**
- a. butter;
  - б. vegetable oils;
  - в. lamb fat;
  - г. fish fat.
- 45. Biological role of carbohydrates:**
- a. are a rich source of energy;
  - б. are a structural element of cells and tissues;
  - в. are a source of vitamin C.
- 46. Factors influencing the absorption of calcium in the human body:**
- a. calcium to fat ratio;
  - б. calcium to phosphorus ratio;
  - в. calcium to carbohydrate ratio;
  - г. calcium to magnesium ratio;
  - д. calcium to protein ratio.

- 47. Seasons of the year in which C-hypovitaminosis is more common:**
- a. autumn;
  - б. winter;
  - в. spring.
- 48. With a deficiency of vitamin PP in the diet, symptoms are observed:**
- a. diarrhea;
  - б. loose gums;
  - в. dermatitis;
  - г. dementia.
- 49. Products that are rich sources of complete protein:**
- a. cereals and products of their processing;
  - б. meat and meat products;
  - в. milk and dairy products;
  - г. fish and fish products;
  - д. vegetables and fruits.
- 50. Biological role of polyunsaturated fatty acids:**
- a. participate in carbohydrate metabolism;
  - б. promote the release of cholesterol from the body;
  - в. increase the elasticity of the walls of blood vessels.
- 51. Products are the main sources of vitamin P :**
- a. cranberry;
  - б. potato;
  - в. cowberry;
  - г. black currant;
  - д. cherry.
- 52. What helminthiasis can be transmitted to humans through fish?**
- a. diphyllbothriasis;
  - б. opisthorchiasis;
  - в. taeniasis.
- 53. Foods that are most likely to cause occurrence of botulism:**
- a. homemade salted fish;
  - б. canned mushrooms and vegetables;
  - в. home-cooked pork (salted, smoked);
  - г. industrially produced canned vegetables in tomato filling.
- 54. A balanced diet implies:**
- a. sufficient energy value of the diet as a result of adequate intake of proteins, fats and carbohydrates;
  - б. compliance of the enzyme set with the chemical structure of the food;
  - в. optimal ratio of nutritional and biologically active substances;
  - г. optimal diet.
- 55. Unsaturated fatty acids include:**
- a. oleic;
  - б. linoleic ;
  - в. arachidonic ;
  - г. stearic

- 56. Animal products are rich sources of vitamin B<sub>1</sub> :**
- a. pork;
  - б. liver;
  - в. butter;
  - г. eggs;
  - д. beef.
- 57. People's need for vitamin C increases with diseases:**
- a. infectious;
  - б. tuberculosis ;
  - в. gastrointestinal;
  - г. cardiovascular .
- 58. Diseases associated with vitamin D deficiency in the body:**
- a. rickets;
  - б. osteoporosis;
  - в. osteomalacia;
  - г. cirrhosis of the liver.
- 59. Products and dishes with which the occurrence is most often associated staphylococcal intoxication:**
- a. eggs;
  - б. minced meat products;
  - в. cakes and quiches;
  - г. milk and dairy products;
  - д. canned fish in oil with row packing.
- 60. To calculate energy and nutrient requirements, the following are taken into account:**
- a. the severity of labor;
  - б. age, gender;
  - в. BX;
  - г. climatic and geographical features of residence;
  - д. physical activity.
- 61. The biological effectiveness of vegetable fats is due to:**
- a. good digestibility;
  - б. high energy value;
  - в. good organoleptic properties;
  - г. high content of vitamins A and D ;
  - д. content of polyunsaturated fatty acids.
- 62. The most characteristic clinical symptoms of staphylococcal toxicosis:**
- a. repeated diarrhea;
  - б. repeated debilitating vomiting;
  - в. epigastric pain ;
  - г. difficulty swallowing;
  - д. nausea.
- 63. Nutrients that enter the body along with fats:**
- a. polyunsaturated fatty acids;
  - б. phosphatides ;
  - в. tocopherols and sterols;
  - г. calcium salts;
  - д. fat-soluble vitamins.

**64. Microsymptoms Vitamin A deficiency:**

- a. loose gums;
- б. dryness and flaking of the skin;
- в. hyperkeratosis;
- г. dark adaptation disorder .

**65. Symptoms of vitamin D deficiency:**

- a. anemia;
- б. diarrhea;
- в. softening of bones;
- г. bone deformation.

**66. Indicators characterizing the state of vitamin C metabolism :**

- a. total serum protein;
- б. vitamin in urine and plasma;
- в. dark adaptation;
- г. capillary resistance.

**67. Lactic acid drinks are used for medicinal purposes because they contain:**

- a. lactic acid;
- б. pentonized protein;
- в. lactic acid bacteria;
- г. ascorbic acid.

**68. The most characteristic clinical symptoms of botulism:**

- a. visual impairment;
- б. nausea;
- в. aphonia;
- г. vomit;
- д. difficulty swallowing.

**69. The nutritional value of fermented milk products is determined by:**

- a. high consumer properties;
- б. good digestibility;
- в. high content of ascorbic acid;
- г. calcium and phosphorus content;
- д. content of B vitamins.

**70. The nutritional value of cottage cheese is determined by:**

- a. high digestibility;
- б. high content of complete protein and fat;
- в. pleasant taste;
- г. the ability to prepare a wide range of dishes;
- д. high calcium content

**71. Meat products can be considered as sources of minerals substances:**

- a. calcium;
- б. potassium;
- в. gland;
- г. phosphorus;
- д. magnesium

## **"Labor as an integral part of human existence and his positive and negative effects on health"**

- 1. All harmful production factors are divided into :**
  - a. mechanical factors;
  - б. physical factors;
  - в. chemical factors;
  - г. biological factors;
  - д. factors of the labor process that characterize the severity of physical labor and labor intensity.
- 2. Working conditions are divided into :**
  - a. optimal;
  - б. acceptable;
  - в. unfavorable;
  - г. harmful;
  - д. dangerous.
- 3. Principles of optimization of the labor process during intellectual activity:**
  - a. gradual entry into work and maintaining an optimal rhythm of work;
  - б. performing intellectual work mainly in the morning;
  - в. compliance with a certain sequence of operations and the correct alternation of work and rest;
  - г. using tea and coffee to stimulate intellectual activity;
  - д. uniform and systematic activity.
- 4. Health activities at industrial enterprises:**
  - a. legislative, administrative, organizational;
  - б. technological;
  - в. sanitary and technical;
  - г. use of personal protective equipment;
  - д. therapeutic and prophylactic.
- 5. Fatigue is:**
  - a. violation of the production dynamic stereotype;
  - б. temporary decrease in performance caused by work;
  - в. functional changes in organs and systems of the body;
  - г. the occurrence of congestive inhibition in the centers of the brain.
- 6. Factors unfavorable for dentists due to improper design of dental clinics and offices include:**
  - a. insufficient set of production facilities;
  - б. non-compliance with standards for the size of work premises;
  - в. uncomfortable microclimate;
  - г. inappropriate lighting of offices;
  - д. correct answers a, b, c, d .
- 7. The criteria for labor intensity are:**
  - a. the amount of manual cargo turnover;
  - б. number of stereotypic movements;
  - в. duration of focused attention;
  - г. density of incoming signals per hour;
  - д. number of body tilts;
  - е. monotone;
  - ж. nervous-emotional tension.

- 8. The most correct is considered to be the “dynamic” position of the doctor’s body during work when:**
- a. the doctor works 40% of his working time sitting, and the rest of the time standing or moving around the office;
  - б. the doctor works at least 50% of his working time while sitting, and the rest of the time - standing or moving around the office;
  - в. a doctor works standing 60% of the time and sitting the rest of the time;
  - г. the doctor works 70% of the time while sitting, and the rest of the time standing or moving around the office;
  - д. a doctor works 75% of his working time sitting, and the rest of the time standing or moving around the office.
- 9. Name the main types of diseases that make up the general morbidity of dentists:**
- a. neurotic disorders;
  - б. diseases of the digestive system;
  - в. diseases of the digestive system;
  - г. respiratory diseases;
  - д. diseases of the musculoskeletal system and connective tissue.
- 10. Factors unfavorable to the health of dentists due to the irrational design of dental equipment, instruments, imperfections of filling and dental materials include:**
- a. static loads;
  - б. noise and vibration;
  - в. high light loads;
  - г. irrational working posture;
  - д. aerosols (microbial and dust), mercury and methyl methacrylate (MMA) vapors.
- 11. The criteria for the severity of work are:**
- a. power of external work;
  - б. monotone;
  - в. amount of RAM;
  - г. maximum weight of transported cargo;
  - д. duration of concentrated observation;
  - е. working posture;
  - ж. moving around the workshop.
- 12. A forced standing working posture can cause dentists to develop the following types of pathology:**
- a. chronic constipation;
  - б. haemorrhoids;
  - в. Varicose veins;
  - г. poor posture (scoliosis, kyphosis);
  - д. osteoporosis.
- 13. What diseases make up the main structure of morbidity among dentists with temporary disability:**
- a. respiratory diseases;
  - б. diseases of the circulatory system;
  - в. diseases of the digestive system;
  - г. diseases of the musculoskeletal system;
  - д. diseases of the genitourinary system.

- 14. Factors unfavorable for dental health caused by. The nature of the treatment process at a dental appointment includes:**
- a. contact with medicinal allergens, toxic chemicals, pathogenic microorganisms;
  - б. irrational work shoes;
  - в. eyestrain;
  - г. nervous-emotional tension;
  - д. multiple stereotypical movements of the small muscles of the working hand.
- 15. Name the most dangerous industrial allergens for dentists:**
- a. antibiotics;
  - б. acrylates, including photopolymers ;
  - в. antistatic agents;
  - г. wax;
  - д. gypsum.
- 16. Measures to prevent dental sensitization:**
- a. medical selection at the stage of choosing a profession;
  - б. research on the allergenicity of new dental materials not only in relation to the body of patients, but also of medical staff;
  - в. proper hand care;
  - г. avoiding contact of allergenic materials with unprotected skin;
  - д. Using an electric towel to dry your hands after washing.
- 17. Rational work shoes for dentists should be:**
- a. replaceable;
  - б. free;
  - в. have a stable wide heel;  
heel height - no more than 3 cm;
  - г. in the form of slippers or high-heeled shoes (for men and women, respectively).
- 18. The most common types of mental work activity are:**
- a. managerial work;
  - б. camera work;
  - в. labor of teachers and health workers;
  - г. labor of pupils and students;
  - д. labor of transport workers;
  - е. creative work;
  - ж. labor activity when working on a computer.
- 19. To reduce the doctor's visual strain when working with instruments necessary:**
- a. select the required size of the working part of the instrumentation in the most illuminated place in the office;
  - б. store tools separately according to the size of the working parts;
  - в. use tools with color-coded handles depending on the size of the working part;
  - г. do not use tools with color-coded handles depending on the size of the working parts
- 20. Name the 4 main types of professional pathology of dentists:**
- a. allergic dermatitis and dermatitis;
  - б. occupational hearing loss;
  - в. occupational eczema;
  - г. silicosis;
  - д. professional mycoses.



**21. The following work can be classified as static:**

- a. to maintain the body in position to perform production operations;
- б. by moving the load in the direction of gravity;
- в. to keep the load stationary;
- г. by moving a load against gravity.

**22. Using the method of timing studies, the following is determined:**

- a. duration of individual operations;
- б. time of sensorimotor reactions;
- в. workload;
- г. hourly labor productivity;
- д. time for personal distractions.

**23. The concept of industrial microclimate includes the following factors:**

- a. air temperature;
- б. air humidity;
- в. air speed;
- г. atmospheric pressure;
- д. infrared radiation.

**24. Causes of mountain sickness:**

- a. decrease in partial pressure of nitrogen;
- б. exercise stress;
- в. lack of oxygen and physical activity;
- г. reduction in the partial pressure of air components.

**25. Dust is a concept that characterizes:**

- a. physical state of the substance (its fragmentation into small particles from several tens to fractions of microns );
- б. chemical properties of the substance;
- в. electrical charge of particles.

**26. Industrial dust causes:**

- a. dermatitis, conjunctivitis;
- б. rhinitis, pharyngitis, pneumonia;
- в. asthmatic bronchitis, bronchial asthma;
- г. psoriasis;
- д. pneumoconiosis.

**27. Pneumoconiosis, depending on the effect of the active dust, is divided into :**

- a. silicosis;
- б. anthracosis;
- в. pneumoconiosis from highly fibrogenic and moderately fibrogenic dust;
- г. pneumoconiosis from slightly fibrogenic dust;
- д. pneumoconiosis from aerosols of toxic-allergenic action.

**28. Aerosols of predominantly fibrogenic action (APFA) are classified:**

- a. by origin;
- б. by method of education;
- в. by particle size.

**29. Silicates include nosological forms:**

- a. asbestosis ;
- б. manganosis ;
- в. talcosis ;
- г. baritosis ;
- д. siderosis.

- 30. Dust aerosols have the greatest fibrogenic activity:**
- a. free of silicon dioxide;
  - б. containing free silicon dioxide.
- 31. The most common complications of silicosis:**
- a. emphysema;
  - б. Chronical bronchitis;
  - в. pleurisy;
  - г. spontaneous pneumothorax;
  - д. pulmonary tuberculosis.
- 32. In what cases does tuberculosis as a concomitant disease occur more aggressively?**
- a. with silicatosi;
  - б. with silicosis;
  - в. with anthracosis;
  - г. with amylosis.
- 33. Indicate the organs that are of leading importance in detoxification and transformation of chemical compounds in the body:**
- a. kidneys;
  - б. liver;
  - в. endocrine glands;
  - г. lungs;
  - д. gastrointestinal tract;
  - е. spleen.
- 34. All industrial poisons, according to their predominant effect, can be divided into compounds, mainly:**
- г. low toxic;
  - д. neurotoxic and hematotoxic effects;
  - е. hepatotoxic and nephrotoxic effects;
  - ж. substances that damage the respiratory system;
  - з. highly toxic.
- 35. Mercury compounds are used:**
- a. in the production of medicines;
  - б. in the production of pesticides;
  - в. in dentistry;
  - г. in the printing industry;
  - д. in steel production.
- 36. In conducting periodic medical examinations of workers who have contact with mercury, be sure to take part:**
- a. dermatologist;
  - б. neurologist;
  - в. therapist;
  - г. ophthalmologist.
- 37. By the nature of the action, poisons cause acute health problems and death organism include:**
- a. to dangerous;
  - б. to harmful.

- 38. Poisons that are harmful by nature of action include:**
- a. causing acute health problems and death of the body;
  - б. having a negative impact on performance and causing the development of occupational diseases or other negative consequences.
- 39. Chemically harmful and dangerous production factors include gases, vapors and aerosols that have the following types of effects:**
- a. general toxic;
  - б. annoying;
  - в. sensitizing;
  - г. fibrogenic;
  - д. carcinogenic;
  - е. mutagenic;
  - ж. influence on reproductive function.
- 40. Saturnism is a chronic poisoning:**
- a. lead;
  - б. mercury;
  - в. manganese
- 41. Mercurialism is chronic poisoning:**
- a. lead;
  - б. mercury;
  - в. manganese
- 42. When exposed to high temperature under production conditions, sorption of toxic substances:**
- a. increases through the respiratory tract;
  - б. decreases through the respiratory tract;
  - в. increases through the skin;
  - г. decreases through the skin.
- 43. The main route of entry of industrial poisons into the body is:**
- a. respiratory system;
  - б. gastrointestinal tract;
  - в. intact skin;
  - г. damaged skin.
- 44. Give the most correct definition of material cumulation:**
- a. accumulation of chemicals in the body that do not cause changes in tissues;
  - б. deposition of chemicals in tissues , causing irreversible changes;
  - в. strong binding of chemicals to tissues, causing irreversible changes.
- 45. What does the effect of substances with material cumulation depend on?**
- a. doses;
  - б. physical state of the substance;
  - в. duration of action.
- 46. Which body system is most sensitive to the effects of industrial poisons?**
- a. cardiovascular ;
  - б. nervous;
  - в. respiratory system;
  - г. gastrointestinal tract.

**47. Lead intoxication develops:**

- a. encephalopathy;
- б. hemorrhagic syndrome;
- в. anemia, reticulocytosis, basophilic granularity of erythrocytes;
- г. Raynaud's syndrome;
- д. polyneuritis of peripheral nerves.

**48. Lead is deposited mainly:**

- a. in the liver;
- б. in the bones;
- в. in the kidneys;
- г. in erythrocytes.

**49. In hygienic practice, ultrasound is assessed by:**

- a. by oscillation frequency in kHz;
- б. by ultrasound intensity in  $W/cm^2$ ;
- в. by sound pressure level in dB.

**50. The biological effect of exposure to EMF radio frequencies depends on :**

- a. vibration frequencies;
- б. duration of exposure;
- в. field intensity;
- г. thermal radiation;
- д. irradiation mode.

**51. Working under conditions of exposure to electromagnetic fields of the radio frequency range can cause disorders:**

- a. nervous system;
- б. cardiovascular system;
- в. gastrointestinal tract;
- г. respiratory system;
- д. water-salt metabolism.

**52. The main physical parameters of EMF are characterized by:**

- a. wavelength;
- б. magnetic permeability;
- в. dielectric constant;
- г. vibration frequency;
- д. effective temperature.

**53. Target organs for laser radiation:**

- a. leather;
- б. Bone marrow;
- в. eyes;
- г. gonads;
- д. brain.

**47. Lead intoxication develops:**

- е. encephalopathy;
- ж. hemorrhagic syndrome;
- з. anemia, reticulocytosis, basophilic granularity of erythrocytes;
- и. Raynaud's syndrome;
- к. polyneuritis of peripheral nerves.

**48. Lead is deposited mainly:**

- д. in the liver;
- е. in the bones;
- ж. in the kidneys;
- з. in erythrocytes.

**49. In hygienic practice, ultrasound is assessed by:**

- г. by oscillation frequency in kHz;
- д. by ultrasound intensity in  $W/cm^2$ ;
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- к. effective temperature.

**53. Target organs for laser radiation:**

- е. leather;
- ж. Bone marrow;
- з. eyes;
- и. gonads;
- к. brain.

**54. Illuminance unit:**

- а. luxury;
- б. candela;
- в. stilb;
- г. lumen.

**55. To combat noise, it is more rational to reduce noise:**

- а. in the source of education;
- б. along the path of distribution;
- в. through the use of personal protective equipment.

**56. Noise according to the nature of the spectrum is classified as follows:**

- а. mechanical;
- б. broadband;
- в. tonal;
- г. permanent;
- д. fickle.

- 57. Give the most correct and complete definition of industrial ventilation:**
- a. indoor air exchange to remove excess heat, moisture and other harmful substances in order to ensure acceptable meteorological conditions and air purity;
  - б. automatic maintenance in enclosed spaces of all or individual air parameters (temperature, relative humidity, cleanliness, speed of movement) in order to ensure, mainly, optimal meteorological conditions, the most favorable for the well-being of people, maintaining the technological process, and ensuring the preservation of cultural values.
- 58. The effects of industrial noise on the body (“noise disease”) are characterized by:**
- a. cardiovascular system disorders ;
  - б. nervous system disorder;
  - в. polyneuritis.
- 59. What we call noise:**
- a. a random combination of sounds of varying intensity and frequency;
  - б. mechanical vibrations with a frequency from 16 to 20,000 Hz ;
  - в. periodic alternation of tones of a certain frequency and strength.
- 60. In addition to the hearing aid, industrial noise can affect:**
- a. on the central nervous system;
  - б. on the cardiovascular system;
  - в. to the visual and vestibular analyzers;
  - г. on the adrenal glands, pituitary gland, thyroid gland;
  - д. on the thymus, spleen, liver.
- 61. The main manifestations of vibration disease from local vibration:**
- a. neurovascular disorders;
  - б. muscle disorders;
  - в. deformation of the osteoarticular apparatus;
  - г. thyroid disorders;
  - д. pancreatic disorders.
- 62. What physical properties of noise determine the strength of its harmful effect?**
- a. intensity;
  - б. frequency;
  - в. spectrum;
  - г. constant exposure.
- 63. When exposed to noise on the body, the following syndromes are characteristic:**
- a. vegetative-vascular dysfunction;
  - б. astheno -vegetative syndrome;
  - в. diecephalic syndrome;
  - г. bilateral hearing loss;
  - д. polyneuritis.
- 64. Infrasonic vibrations are characterized by :**
- a. long wavelength;
  - б. short wavelength;
  - в. low oscillation frequency;
  - г. high vibration frequency;
  - д. diffraction phenomena ( bending around obstacles).

- 65. When exposed to vibration transmitted to the hands, the worker experiences:**
- a. pronounced spasm of capillaries;
  - б. increased vibration sensitivity;
  - в. decreased vibration sensitivity;
  - г. decreased muscle strength;
  - д. increasing static endurance;
  - е. severe pain in the hands.
- 66. General measures to prevent vibration disease:**
- a. technical control of vibration installations ;
  - б. timely repair of vibrating tools ;
  - в. use of shock absorbers;
  - г. changing the design of tools;
  - д. use of remote controls;
  - е. good ventilation.
- 67. Stability of clear vision is the ability of the eye:**
- a. distinguish the brightness of adjacent objects;
  - б. distinguish details in the shortest period;
  - в. hold a clear image of the part in question.
- 68. The sounds that are more irritating to the hearing organ are:**
- a. low frequency;
  - б. high frequency.
- 69. Biological effect of infrasound:**
- a. emotional sphere, feeling of fear;
  - б. musculoskeletal system;
  - в. autonomic support systems ( cardiovascular , respiratory, neuroendocrine);
  - г. digestive organs.
- 70. Individual measures to prevent vibration disease:**
- a. self-massage, massage, warm baths;
  - б. use of gloves with pads;
  - в. use of headphones;
  - г. use of respirators;
  - д. 10 minute breaks after 1 hour of work.
- 71. Hearing sensitivity can be measured:**
- a. chronoflexometer ;
  - б. tuning fork;
  - в. tone audiometer.
- 72. Personal noise protection equipment:**
- a. respirators;
  - б. insert plugs;
  - в. headphones;
  - г. aviation helmets.
- 73. With systematic exposure to airborne ultrasound, the most characteristic changes in the body are:**
- a. occupational hearing loss;
  - б. vegetative-vascular dystonia;
  - в. polyneuritis;
  - г. asthenic syndrome.

- 74. Basic hygienic requirements for rational artificial lighting:**
- a. adequacy;
  - б. uniformity;
  - в. lack of light and shade.
- 75. Occupational hearing loss occurs more quickly if the noise is of the following nature:**
- a. constant;
  - б. fickle;
  - в. low frequency;
  - г. high frequency.
- 76. Infrasound is sound vibrations with frequencies:**
- a. below 20 Hz;
  - б. 20 Hz to 20 kHz;
  - в. above 20 kHz.
- 77. Vibration as an industrial hazard is:**
- a. mechanical vibrations of the air environment perceived by a person in the process of production activities;
  - б. mechanical vibrations of the air environment, perceived by a person upon contact with an oscillating body in the process of production activities;
  - в. electromagnetic vibrations perceived by a person in the process of production activities.
- 78. The adverse effects of vibration are enhanced in combination with :**
- a. noise;
  - б. heating microclimate;
  - в. cooling microclimate;
  - г. physical overstrain.
- 79. The symptom of vestibulopathy is most often observed in workers exposed to vibration:**
- a. local;
  - б. general
- 80. Contrast sensitivity is the ability of the eye:**
- a. distinguish the brightness of adjacent objects;
  - б. distinguish details in the shortest period;
  - в. hold a clear image of the part in question.
- 81. When exposed to intense general vibration, workers may experience:**
- a. extrapyramidal syndrome;
  - б. vestibulopathy ;
  - в. polyneuropathy of the lower extremities;
  - г. osteocondritis of the spine;
  - д. cerebral -peripheral angiodystonic syndrome.
- 82. Ultrasound is mechanical vibrations of an elastic medium in the frequency range:**
- a. below 20 Hz;
  - б. above 20 Hz;
  - в. 45-11000 Hz.
- 83. The most characteristic changes in the body of workers exposed to contact exposure to ultrasound:**
- a. impaired sensitivity of the hands;
  - б. changes in the composition of peripheral blood;
  - в. vegetomyofasciculitis of the hands;
  - г. visual impairment.



**84. Brightness unit:**

- a. luxury;
- б. candela;
- в. stilb;
- г. lumen.

**85. Factors that determine the degree of harmful effects of noise on the body:**

- a. duration of exposure;
- б. noise intensity;
- в. frequency characteristics;
- г. individual susceptibility of the body;
- д. body fatigue.

**86. General preventive measures in production areas with intense noise:**

- a. sound insulation of noisy units;
- б. wall cladding with sound-absorbing materials;
- в. use of remote controls;
- г. good room ventilation;
- д. change in production technology.

**87. The complex of treatment and preventive measures for the prevention of vibration disease in workers includes:**

- a. foot baths;
- б. vitaminization (C, B);
- в. hydro treatments for hands;
- г. self-massage of hands;
- д. preventive examinations.

## **“Hygiene of medical institutions”**

- 1. A favorable medical and protective regime, effective prevention of nosocomial infections, and accessibility for patients to use hospital parks are ensured by the hospital development system:**
  - a. free;
  - б. decentralized;
  - в. polyblock;
  - г. block;
  - д. centralized.
  
- 2. Name the best option for locating a dental clinic:**
  - a. a separate standard building for a dental clinic;
  - б. dental clinic built into a residential building;
  - в. use of adapted buildings for the dental clinic;
  - г. dental department in a separate building of a general standard clinic;
  - д. The dental clinic is built into the general clinic building.
  
- 3. The hospital situation plan addresses the following issues:**
  - a. placement of a hospital on the territory of a populated area;
  - б. the presence of a green area and favorable natural factors;
  - в. placement of hospitals and “harmful” enterprises, taking into account the wind rose;
  - г. good transport connections between the population and hospitals;
  - д. placement of the hospital on the territory of the hospital site.
  
- 4. The placement of the operating unit is rational:**
  - a. in a separate building of the hospital;
  - б. on one of the floors of the ward department;
  - в. on the same floor with the diagnostic and treatment department;
  - г. isolated from the ward departments, in the form of an independent block;
  - д. on the first floor of the reception building.
  
- 5. Sanitary standards provide for entrances to the hospital territory:**
  - a. general entrance and entrance to the economic zone;
  - б. the number of entries is determined by the hospital administration;
  - в. no more than two entries;
  - г. one central entrance;
  - д. to each building.
  
- 6. In accordance with the standards, the area in the office for the main dental chair must be at least:**
  - a. 4 m<sup>2</sup>;
  - б. 7 m<sup>2</sup>;
  - в. 10 m<sup>2</sup>;
  - г. 14 m<sup>2</sup>;
  - д. 20 m<sup>2</sup>.
  
- 7. Features of the interior decoration of therapeutic dentistry offices are determined by the work carried out with:**
  - a. amalgams;
  - б. acrylic plastics;
  - в. helium fillings;
  - г. photopolymers;
  - д. epoxy resins.

8. **Occupational hazards in the work of medical personnel are associated with:**
- with features of treatment technology;
  - with insufficient premises for doctors and medical staff;
  - with violation of hygienic conditions;
  - with the peculiarities of labor processes;
  - with violation of the work regime.
9. **In open source departments, the protection of medical personnel should be carried out in the following areas:**
- monthly medical monitoring of staff health;
  - use of personal protective equipment;
  - correct planning solution for the department;
  - protection from external radiation;
  - protection of respiratory organs and skin from radioactive substances.
10. **A sanitary checkpoint for personnel is provided in the following departments:**
- maternity and operating rooms ;
  - maternity and surgical;
  - infectious and children's;
  - pediatric and surgical.
11. **It is undesirable to use blue tones for painting the walls of dental offices due to :**
- the appearance of a false perception of pallor of the patient's skin;
  - distortion of color rendition of skin color;
  - distortions in the color rendition of teeth;
  - distortion of color rendering of mucous membranes;
  - facilitating the physician's recognition of the appearance of the patient's collapsed state.
12. **Artificial lighting in dental offices should:**
- have a sufficient level;
  - have any lamp emission spectrum;
  - be uniform at different points in the room;
  - do not have a blinding effect;
  - be regulated and safe for the body.
13. **The maximum permissible concentration (MPC) of mercury vapor in the air of dental offices should be:**
- not less than  $0.01 \text{ mg/m}^3$  ;
  - no more than  $0.01 \text{ mg/m}^3$  ;
  - not less than  $0.02 \text{ mg/m}^3$  ;
  - no more than  $0.02 \text{ mg/m}^3$  ;
  - no more than  $0.03 \text{ mg/m}^3$  .
14. **The infectious diseases department of a multi-bed hospital should be located:**
- on any floor of any building if there is a gateway on the corridor side and a separate elevator;
  - in a separate building;
  - in the main building;
  - in a separate wing of the medical building;
  - on the upper floors of the medical building.
15. **Construction of a general admission department for medical and surgical patients:**
- not allowed;
  - allowed;
  - allowed in multi-bed hospitals;
  - allowed after thorough disinfection;
  - allowed only in small-bed hospitals.

- 16. Maximum insolation regime is recommended:**
- a. in operating rooms;
  - б. in the preoperative room;
  - в. in sanitary treatment areas;
  - г. in the wards of the recovery and rehabilitation department;
  - д. in intensive care wards.
- 17. The main sources of infection in dental offices are:**
- a. patients with purulent-inflammatory processes of the maxillofacial area;
  - б. patients with syphilis, hepatitis B, AIDS, herpes, etc.;
  - в. carriers of pathogenic agents among patients;
  - г. carriers of pathogenic agents among personnel;
  - д. animals and insects.
- 18. Occupational diseases of medical personnel of infectious nature:**
- a. tuberculosis;
  - б. HIV infection;
  - в. syphilis;
  - г. acute viral respiratory diseases;
  - д. hepatitis A, B, C.
- 19. The standard area per dental technician in the main room of the dental laboratory should be no less than:**
- a.  $2 \text{ m}^2$ ;
  - б.  $3 \text{ m}^2$ ;
  - в.  $4 \text{ m}^2$ ;
  - г.  $5 \text{ m}^2$ ;
  - д.  $6 \text{ m}^2$ .
- 20. The box includes:**
- a. ward, sanitary room, entrance for staff and patients from the department corridor;
  - б. ward, sanitary room, entrance from the street for the patient;
  - в. ward, sanitary room, airlock for staff, separate entrance from the street for the patient;
  - г. the set of box rooms depends on the profile and bed capacity of the hospital.
- 21. The microclimate of a hospital room is determined by:**
- a. relative humidity;
  - б. air temperature;
  - в. barometric pressure;
  - г. air mobility;
  - д. natural light.
- 22. The optimal types of color decoration for the walls of dental offices are:**
- a. neutral light gray color;
  - б. salad;
  - в. light ochre;
  - г. with a reflection coefficient of at least 40%;
  - д. with a reflectance below 40%.
- 23. The production process in medical institutions is associated with the risk of exposure to:**
- a. prolonged forced position of the body;
  - б. microbial and biological factors;
  - в. medicines and medical gases;
  - г. unfavorable microclimate of production premises;
  - д. X-ray radiation and radionuclides.

- 24. Basic principles of protecting medical personnel from external radiation:**
- a. use of protective suits;
  - б. protection by distance;
  - в. protection by numbers;
  - г. screen protection;
  - д. protection by time.
- 25. The following materials are prohibited from being used for interior decoration of therapeutic dentistry offices:**
- a. dry plaster;
  - б. tile plastic;
  - в. rolled linoleum;
  - г. fibreboards, chipboards;
  - д. hardboard, cardboard, unprotected wood.
- 26. Universal indicator of anthropogenic (biogenic) air pollution in hospital wards:**
- a. ammonia;
  - б. air oxidation;
  - в. indole;
  - г. phenol;
  - д. carbon dioxide.
- 27. Occupational diseases of medical personnel associated with work characteristics:**
- a. diseases of the cardiovascular system;
  - б. chronic inflammatory diseases of the gastrointestinal tract;
  - в. drug allergies;
  - г. diseases of the musculoskeletal system;
  - д. overwork.
- 28. Optimal orientation of operating room windows:**
- a. south;
  - б. north;
  - в. west;
  - г. East.
- 29. Sources of air pollution in hospital premises with gaseous substances:**
- a. people (anthropogenic factor);
  - б. medicines and medicinal gases;
  - в. polymer materials;
  - г. dry cleaning of premises;
  - д. disinfectants.
- 30. Boxing differs from half-boxing:**
- a. the presence of a common entrance from the department for staff and patients;
  - б. the presence of a sanitary room;
  - в. the presence of a gateway for personnel;
  - г. the presence of an entrance from the street for patients;
  - д. no different.
- 31. The main danger for medical personnel during x-ray examinations is:**
- a. external irradiation;
  - б. irradiation of arms and body;
  - в. internal irradiation;
  - г. unfavorable microclimate;
  - д. blinding effect of the x-ray beam.

32. **of general artificial lighting in dentists' treatment rooms, treatment rooms, and main rooms of the ZTL should be ( l.l and l.n , respectively ):**
- 400 and 200 lux ;
  - 500 and 200 lux ;
  - 300 and 150 lux ;
  - 200 and 100 lux ;
  - 150 and 75 lux .
33. **Maximum permissible carbon dioxide content in the air of hospital wards:**
- 0.3%;
  - 0.2%;
  - 0.1%;
  - 0.07%;
  - 0.03%.
34. **The microclimate of dental offices determines:**
- temperature;
  - air humidity (relative);
  - air speed;
  - barometric pressure.
35. **Compared to low-speed drills, high-speed ones have a number of advantages that are important from a hygienic point of view because they:**
- reduce the amount of effort of the doctor's working hand during the preparation of hard dental tissues;
  - speeds up the preparation process;
  - reduce the patient's level of pain from mechanical impact on the tooth.
36. **The ward section includes:**
- corridor and hall;
  - offices for medical personnel;
  - toilet rooms;
  - medical and auxiliary premises;
  - chambers.
37. **In infectious diseases departments there must be ventilation:**
- mechanical supply;
  - supply and exhaust with a predominance of exhaust;
  - supply and exhaust with a predominance of inflow;
  - can be any depending on the design features of the department building;
  - natural through.
38. **To prevent the transmission of infection in dental offices, the following set of anti-epidemic measures is necessary:**
- sanitary culture of personnel;
  - use of a fume hood;
  - strict observance by staff of personal hygiene rules;
  - use of personal protective equipment ( PPE );
  - implementation of disinfection and sterilization regimes.
39. **In accordance with the standards, the area in the office for an additional dental chair should be:**
- 4 or  $7m^2$  ;
  - 7 or  $10m^2$  ;
  - 14 or  $20m^2$  ;
  - 18 or  $25m^2$  ;
  - $25m^2$  and above.

- 40. The hospital master plan addresses the following issues:**
- placement of a hospital complex on the territory of a hospital site;
  - placement of a hospital on the territory of a populated area;
  - zoning of the hospital site, taking into account the functional significance of the elements of the hospital complex;
  - building density of the hospital site;
  - placement of access roads at the hospital site.
- 41. The following functional areas are located on the hospital site:**
- area of the pathological building;
  - boiler room and laundry area;
  - area of the main medical building;
  - green area;
  - utility yard area.
- 42. Occupational hazards associated with the work characteristics of medical personnel:**
- uncomfortable working posture;
  - vertical body position;
  - overstrain of individual organs and systems;
  - nervous-emotional tension;
  - prolonged forced position of the body.
- 43. Features of the interior decoration of therapeutic dentistry offices include :**
- use of wet plaster with the addition of 5% sulfur powder;
  - use of rolled material (linoleum) without gaps for flooring;
  - "apron" device;
  - special protection of the floor base from the penetration of metallic mercury and the sorption of its vapors;
  - the use of dry plaster, hardboard , chipboard, fiberboard and cardboard as a base for the office floor.
- 44. Correct color finishing of dental offices is important in the work of dentists when :**
- diagnosis of diseases of the teeth and mucous membranes of the oral cavity;
  - filling teeth, especially with photopolymers ;
  - choosing the color of artificial teeth for prosthetics;
  - identification of dental diseases accompanied by the appearance of icterus of the skin and mucous membranes;
  - color finish doesn't matter.
- 45. Standards for indicators of sufficiency of natural lighting in dental offices - SK, KEO, angle of incidence:**
- 1/4 - 1/8, not less than 2%, not less than 28 °C ;
  - 1/4 - 1/6, not less than 1.5%, not less than 27 °C ;  
1/4 - 1/5, not less than 1.5%, not less than 28°C;
  - 1/4 - 1/5, no more than 1.5%, no more than 28 °C ;
  - 1/4 - 1/5, no more than 2%, no less than 28°C.
- 46. In production areas where amalgam is worked, it is necessary to maintain the air temperature no higher than:**
- 10 °C ;
  - 15 °C ;
  - 17 °C ;
  - 18 °C.

- 47. Regardless of the presence of ventilation, all premises of dental clinics must have:**
- easy-to-open windows or, better yet, transoms;
  - mechanically driven fume hoods in therapeutic and orthopedic rooms.
- 48. In accordance with the standards, the area in the dental office for an additional chair should be:**
- 4 or  $7\text{m}^2$  ;
  - 7 or  $10\text{m}^2$  ;
  - 14 or  $20\text{m}^2$  ;
  - 18 or  $25\text{m}^2$  ;
  - $25\text{m}^2$  and above.
- 49. It is undesirable to use orange-red tones for wall painting because:**
- the doctor's perception of the appearance of pale skin of the patient increases;
  - the icterus of the skin is masked ;
  - the icterus of the mucous membranes is masked ;
  - the icterus of the sclera is masked ;
  - Diagnosis of hepatitis becomes difficult.
- 50. Modern material and technical equipment of the dental office pursues the solution of the following tasks:**
- rational organization of the doctor's and nurse's workplace;
  - ensuring maximum convenience for the work of medical personnel;
  - reduction of physical, psychological and emotional stress on the doctor and staff;
  - ensuring comfort for patients in treatment rooms and other rooms.
- 51. A strict anti-epidemic regime must be observed in dental offices:**
- therapeutic;
  - surgical;
  - orthopedic;
  - orthodontic ;
  - in all dental clinics.
- 52. Of particular danger to patients in terms of the spread of infection in dentistry are:**
- patient's oral cavity;
  - doctor's hands;
  - dental instruments;
  - towel;
  - door handles.



## **"Hygienic fundamentals for ensuring normal development and high level of health of the child population"**

**1. Biological age is:**

- a. the period lived by the child from birth to the time of examination;
- б. a set of morpho-functional properties of an organism, depending on the individual rate of growth and development;
- в. the period from conception to the moment of examination;
- г. the period from conception to birth.

**2. What is meant by physical development?**

- a. a set of morphological and functional properties of an organism that characterize its growth and development at each age stage;
- б. a complex of morphological properties of an organism that characterize its growth and development at each age stage.

**3. Generalizing method for studying the physical development of children and adolescents -**

**This:**

- a. assessment of an individual's physical development;
- б. study of the physical development of the same groups of children during the period of growth and development;
- в. study of the physical development of large groups of children in a relatively short period of time.

**4. Features of the course of basic nervous processes in young children school age:**

- a. predominance of inhibition over excitation;
- б. predominance of excitation over inhibition;
- в. irradiation of excitation.

**5. Spinal curvatures that occur in children when the furniture does not match their height:**

- a. lordosis;
- б. kyphosis;
- в. scoliosis.

**6. Conditions contributing to the development of myopia in children and adolescents:**

- a. insufficient lighting of the workplace;
- б. uneven lighting;
- в. glare;
- г. incorrect landing.

**7. The basic principles of hardening include:**

- a. taking into account health status and degree of hardening;
- б. gradualism;
- в. systematic;
- г. complexity;
- д. creating positive motivation;
- е. low labor intensity of the organization;
- ж. availability.

- 8. What groups of characteristics are used to study physical development?**
- somatometric ;
  - physiometric ;
  - psychophysiological;
  - somatoscopic .
- 9. What is meant by acceleration of physical development?**
- improvement of physical development indicators;
  - accelerating growth and development.
- 10. A comprehensive method for assessing the physical development of children allows:**
- take into account heteromorphism and heterochrony of development;
  - take into account the timeliness of physical development;
  - make interrelated assessments of body length and weight;
  - take into account the asymmetry in the distribution of a number of signs of physical development.
- 11. Compliance with the principle of group isolation in a preschool institution is ensured by:**
- the presence of a complex of isolated premises for each group;
  - the presence of a separate entrance for each nursery group;
  - the presence of separate lockers for clothes;
  - allocation of isolated walking areas on the territory of a preschool institution;
  - individual marking of tableware and teaware in a group cell.
- 12. When designing schools, it is necessary to provide for:**
- a separate section for 1st grade students;
  - a separate section for students in grades 2-4;
  - a separate section for students in grades 1-4;
  - sections for grades 5-11.
- 13. Factors that have an adverse effect on physical development:**
- alcoholism and drug addiction of parents;
  - insufficient and malnutrition;
  - chronic diseases;
  - physical education;
  - unfavorable social conditions.
- 14. The basic principles of hardening include:**
- taking into account health status and degree of hardening;
  - gradualism;
  - systematic;
  - complexity;
  - creating positive motivation;
  - low labor intensity of the organization;
  - availability.
- 15. Acceleration includes:**
- acceleration of growth and development;
  - increase in life expectancy;
  - increasing the duration of the reproductive period;
  - increase in definitive body size;
  - change in the structure of morbidity.

**16. What is meant by biological age?**

- a. compliance of the child's physiological and functional indicators with age standards;
- б. the achieved level of maturation of individual organs, systems and functions of the child's body.

**17. Physiometric signs of physical development:**

- a. vital capacity of the lungs;
- б. hand muscle strength;
- в. chest circumference;
- г. back strength;
- д. blood pressure value, pulse rate.

**18. In what cases does a foot print indicate a normal arch?**

- a. if the isthmus is up to 50% of the length of the perpendicular;
- б. if the isthmus is up to 50 - 60% of the length of the perpendicular;
- в. if the isthmus is more than 60% of the length of the perpendicular.

**19. The basic principles of standardization of activities in the hygiene of children and teenagers are accounted for:**

- a. morpho-functional maturity of the organism;
- б. gender;
- в. health conditions;
- г. functional state of the body;
- д. biorhythmic characteristics of the body;
- е. the need for a developing, training role of activity;
- ж. the need to achieve a certain labor productivity.

**20. Somatoscopic signs of physical development :**

- a. state of posture;
- б. spine shape;
- в. shape of legs, feet;
- г. chest shape;
- д. degree of sexual development.

**21. Overall, the greatest impact on the health of children and adolescents renders:**

- a. environmental pollution;
- б. natural and climatic conditions;
- в. activities of health authorities;
- г. lifestyle and social and hygienic factors.

**22. Analysis of the distribution of children by health group is important:**

- a. to prescribe individual recommendations for treatment and prevention diseases;
- б. for individual rationing of physical and mental stress;
- в. to assess the health status of the team;
- г. to identify risk groups for developing diseases.

**23. Individualizing method for studying the physical development of children and teenagers are:**

- a. assessment of an individual's physical development
- б. study of the physical development of the same groups of children during the period of growth and development;
- в. study of the physical development of large groups of children in a relatively short period of time;
- г. a one-time study of the physical development of children.

- 24. Somatometric indicators of physical development:**
- a. length, body weight, chest circumference;
  - б. back strength, hand muscle strength;
  - в. development of subcutaneous fat;
  - г. development of secondary sexual characteristics.
- 25. The patterns of growth and development of children's bodies include:**
- a. uneven rates of growth and development;
  - б. increase in specific energy expenditure of the body;
  - в. heterochrony;
  - г. sexual dimorphism;
  - д. conditioning of growth and development by heredity and environmental factors;
  - е. biological reliability of functional systems and the body as a whole;
  - ж. acceleration of growth and development.
- 26. Biological reliability of functional systems and the body as a whole based:**
- a. on redundancy of control elements;
  - б. on homeostasis;
  - в. on duplication and interchangeability of regulatory elements;
  - г. on a perfect and rapid return to a state of relative constancy;
  - д. on hereditary characteristics;
  - е. on the dynamic interaction of system links.
- 27. For what purpose are data on physical development used:**
- a. as an objective criterion for assessing the health of the child population;
  - б. to develop preventive measures to protect children's health and teenagers;
  - в. for the design of children's furniture and clothing.