Federal state budgetary educational institute of the higher education

 «Orenburg state medical university» of Ministry of Health of the Russian Federation»

**ASSESSMENT FUND**

**FOR CURRENT PROGRESS MONITORING AND MIDTERM CERTIFICATION OF STUDENTS STUDYING ON DISCIPLINE**

**HYGIENE**

for

*31.05.01 General Medicine, Faculty of Foreign Students*

It is part of the main professional educational program of higher education 31.05.01. General Medicine, Faculty of Foreign Students approved by the Academic Council of the Orenburg state medical university

record No. 8 dated «25th» March, 2016

Orenburg

**Characteristics of monitoring forms**

|  |  |
| --- | --- |
| **Monitoring form** | **Characteristics** |
| **Report** | A report is a public announcement or document that contains information and reflects the essence of the issue or research in relation to a given situation. It can be written or oral. An oral presentation can be accompanied by a multimedia presentation or demonstration of any visual (material) objects.Report allows you to assess the level of student`s theoretical knowledge on a given question, as well as to check the skills of analysis, synthesis, generalization and concretization, used by students while preparing a report. |
| **Written questionnaire** | A written questionnaire is a type of written assessment of students' knowledge on certain questions or topics. It can be current and final, individual and frontal. It involves posing a number of questions to students, to which they give a detailed written answer. It allows you to assess the knowledge of students on the passed topic (or module) of the discipline. |
| **Presentation**  | A presentation (computer presentation) is a demonstration in a visual form of the main provisions of the oral presentation, the degree of mastering the content of the problem. It allows you to assess the level of students` knowledge on a given question (topic, section), as well as to check their skills of analysis, synthesis, generalization and concretization, information and communication skills used by students in the process of preparing a presentation. |
| **Abstract**  | Abstract is a summary, in writing or in the form of a public speech, of the content of a book, scientific work, and the results of studying a scientific problem, a report on a specific topic, including a review of relevant literary and other sources. As a rule, it is an independent student's work on revealing the essence of the problem under study, presenting various points of view and their own views on it. The defense of the abstract can be accompanied by a presentation. Since the main purpose of the essay is scientific and informational, this form of control is aimed mainly at assessing the knowledge of students on a specific topic (issue), although it allows us to identify the level of formation of the skills of analysis, synthesis, generalization and concretization used by the student in the process of preparing a report. |
| **Testing**  | Testing is a written way of testing students' knowledge. It can be current and final (by Module or discipline as a whole). Test items can include questions with one or more correct answers, assignments for matching and sequencing, as well as problem-situation tasks that require the selection of the correct (or several correct) answer options, as well as graphic images that require interpretation or definition. In most cases, testing is aimed at assessing students' knowledge. It allows to assess the students' skills when the test tasks are presented by problem-situational tasks, tasks with graphic (visual) images that require the use of a solution algorithm (action with an object). |
| **Recitation** | Recitation is a method of testing the knowledge and skills of students, which consists in the fact that students are invited to reproduce a certain content: empirical facts, theoretical positions, formulations of concepts, examples, classifications, scientific laws. It allows you to assess the level of knowledge of students on a particular issue, topic, section, discipline. Assessment of the students' skills is possible if, in the course of answering the question posed, the student needs to demonstrate the acquired knowledge in order to solve a problem question or problem-situational task. |
| **Solving problem-situational tasks** | Problem-situational tasks are a kind of practical task that involves solving an issue in a certain situation. Both the question and the situation itself can be problematic. In most cases, problem-situational tasks have a professional focus. They allow assessing the ability of students to apply the obtained theoretical knowledge in various situations. |
| **Practical skills testing** | Testing of practical skills can be used to control the students' practical actions (medical manipulations) with the "patient". It allows you to assess the skills and abilities of students to apply the theoretical knowledge (about certain actions and manipulations) in standard and non-standard situations. |

**Passport of the assessment tools fund**

The fund of evaluation tools for the discipline contains standard control and evaluation materials for the current control of students 'progress, including the control of students' independent work, as well as for the control of the results of training formed in the course of studying the discipline at the intermediate certification in the form of an exam.

Control and assessment of control performance distributed on the topics of discipline, and are accompanied by an indication of the used forms of control and assessment criteria. Control and evaluation materials for the intermediate certification correspond to the form of the intermediate certification for the discipline defined in the curriculum of the OPOP and are aimed at checking the formation of knowledge, skills and abilities for each competence established in the work program of the discipline.

**1. Evaluation materials of the current control of students ' progress.**

**Assessment materials throughout the discipline.**

TESTS for foreign STUDENTS

Department of hygiene

**Radiation hygiene**

# WHO DISCOVERED X-RAUS:

roentgen

curie

becquerel

gray

# ROENTGEN IS THE UNIT OF:

radioactivity

radiation exposure

absorbed dose

none of the above

# MOST RADIOSENSITIVE ORGAN IS:

liver

fat

bone marrow

nervous tissue

# WHICH OF THE FOLLOWING IS THE MOST RADIOSENSITIVE TISSUE:

adrenal

pancreas

gonads

uterus

# WHICH OF THE FOLLOWING IS A HARMUFUL :

alpha particle

gamma particle

neutron

electron

# MOST RADIOSENSITIVE CELL IS:

neutrophil

lymphocyte

megakaryocyte

basophil

# THE MOST RADIOSENSITIVE TISSUE IS:

nerve

bone marrow

thyroid

liver

#RADIATION EXPOSURE OCCURS IN ALL OF THE FOLLOWING EXCEPT:

CT scan

MRL scan

fluoroscopy

X-ray

#CAMMA CAMERA IS USED FOR:

measuring the radioactivity

radionuclide scans

both of the above

none of the above

#WHICH OF THE FOLLOWING RADIO OF LODINE IS USED FOR THYROID SCAN :

i-123

i-125

i-127

i-131

#THYROID ABLATION IS DONE USING WHICH RADIOISOTOPE OF LODINE:

i-123

i-125

i-131

i-135

#SI UNIT OF RADIOACTIVITY IS:

rem

rad

becquerel

curie

#RADITION OF 5 CY WILL KILL PATIENTS IN:

1 day

1 week

2-3 week

4-6 week

#HOW MUCH RADITION DOSE IS NEEDED FOR PERMANENT TESTICULAR STERILIZATION IN NORMAL MALE:

0-5 Gy

6-10 Gy

11-15 Gy

16-20 Gy

#RECALL PHENOMENON IS SEEN IN:

radiotherapy following chemotherapy

surgery after radiotherapy

radiotherapy after surgery

chemotherapy following radiotherapy

#RADIUM EMITS WHICH OF THE FOLLOWING RADIATIONS:

gamma rays

alpha rays

beta rays

all of the above

# AMOUM OF RADIOACTIVITY ABSORBED BY BODY IS MEASURED BY:

curie

roentgen

rad

rem

#ALPHA PARTIGLE HAS:

1 protons, 2 neutrons

1 protons, 1 neutrons

2 protons, 2 neutrons

2 protons, 2 neutrons

#MAXSIMUM PENETRATING RAYS:

alpha

beta

gamma

delta

#UNIT OF RADITION EXPOSURE:

rad

gray

sievert

roentgen

# IRIDIUM 192 HALF LIFE:

2.7 days

8 days

74 days

16 hours

# RADIOIODINE 131 HALF LIFE:

8 days

15.7 days

74.3days

13 hours

#HALF-LIFE OF COBALT-60:

53 years

5.3 years

0.53 years

7.8 years

# HALF-LIFE OF RADIUM 226:

15.9 years

159 years

1620 years

15900 years

#IONIZING RADIATION WITH MAXSIMUM PENATRATION IS:

alpha partigles

beta partigles

gamma rays

microwaves

# OCCUPATIONAL RADITION EXPOSURE ALLOWED PER YEAR TO INDIAN POPULATION:

2 mSv

5 mSv

10 mSv

20 mSv

# WHICH PHASE OF THE CELL CUCLE IS MOST SENSITIVE TO RADIOTHERAPY:

G2M phase

S phase

M phase

G2 phase

# MAXIMUM PERMISSIBLE DOSE OF RADIATION EXPOSURE FOR GENERAL HUMAN BESINGS IS:

0.5 rad per person per year

5 rad per person per year

50 rad per person per year

5 rem per person

# THE TIME REQUIRED FOR THE ACTIVITY OF A RADIONUCLIDE TO DECREASE BY DECAY TO HALF OF ITS INITIAL VALUE, IS CALLED:

half-life

activity

radioactivity

# THE GAS PRODUCED BY THE DECAY OF RADIUM-226, WHICH SEEPS CONTINUOUSLY FROM BEDROCK AND ACCUMULATE IN POORLY VENTILATED HOUSES IS CALLED:

radon

potassium

uranium

# THE EFFECTS WHICH PRESENT WITHIN 24 HOURS OF EXPOSURE TO HIGH AMOUNTS OF IONIZING RADIATION ARE CALLED:

acute radiation syndrome

radiation induced cancer

genetic effect

chronic radiation syndrome

# SYNDROME FOLLOWS ABSORBED DOSES OF 6–30 GY (600–3000 RAD) AND INCLUDES SUCH SYMPTOMS AS NAUSEA, VOMITING, LOSS OF APPETITE, AND ABDOMINAL PAIN FOLLOWS ABSORBED DOSES OF 6–30 GY (600–3000 RAD):

Hematopoietic

Gastrointestinal

Neurovascular

# THE SI UNIT FOR EFFECTIVE DOSE IS:

gray (Gy)

sievert (Sv)

becquerel (Bq)

# PARTICLES CONSISTED OF TWO PROTONS AND TWO NEUTRONS BOUNDED TOGETHER INTO A PARTICLE IDENTICAL TO A HELIUM NUCLEUS HE ARE CALLED:

beta particles

neutrons

alpha particles

positrons

gamma photons

# THE SPONTANEOUS DISINTEGRATION OF ATOMS IS CALLED:

half-life

activity

radioactivity

# THE PHYSICAL QUANTITY OF ABSORBED DOSE, THAT TAKES INTO ACCOUNT THE BIOLOGICAL EFFECTIVENESS OF THE RADIATION, WHICH IS DEPENDENT ON THE RADIATION TYPE AND ENERGY, IS CALLED:

absorbed dose

equivalent dose

effective dose

# THE USE OF HIGH-ENERGY RADIATION FROM X-RAYS, GAMMA RAYS, NEUTRONS, PROTONS, AND OTHER SOURCES TO KILL CANCER CELLS AND REDUCE TUMORS, IS CALLED:

radiosurgery

x-ray procedures

radiation therapy

# TYPE OF EXPOSURE, WHEN THE RADIOACTIVE MATERIAL ENTERS THE ORGANISM, AND THE RADIOACTIVE ATOMS BECOME INCORPORATED INTO THE ORGANISM, IS CALLED:

internal exposure

external exposure

**Nutrition**

# TRACE ELEMENT PERCENT OF BODY WEIGHT:

0.001%

0.01%

0.1%

1%

# PROTEIN DAILY RECUIREMENT IS:

 1gm/kg

2 gm/kg

3 gm/kg

4 gm/kg

# WHICH OF THE FOLLOWING VITAMIN IS NOT AN ANTIOXIDANT:

vitamin A

vitamin B

vitamin C

vitamin E

#ALL OF THE FOLLOWING VITAMINS ARE ANTIOCSIDANS EXCEPT:

beta carotene

vitamin B

vitamin C

vitamin E

# PELLAGRA IS CAUSED BU DEFICIENCY OF:

thiamine

niacin

biotin

ascorbic acid

# ALL ARE FEATURES OF KWASHIORKOR EXCTPT:

irritability

edema in lower limb

increase appetite

apathy

# TOXIN OF EPIDEMIE DROPSY IS:

BOAA

sanguinarine

alkaloid

ergot

# METHIONINE IS A LIMITING AMINO ACID IN:

cereals

maize

wheat

pulses

# WHICH AMINO ACID IS DEFICIENT IN PULSES:

lysine

threonine

methionine

cysteine

# WHAT IS THE BIOLOGICAL VALUE OF EGG PROTEIN:

80

90

100

120

# VITAMIN – D IS HIGH IN:

human milk

cow,s milk

green vegetables

egg

# RICH SOURECE OF VITAMIN D IS:

milk

shark liver oil

halibut liver oil

cod liver oil

# VITAMIN D IS FOUND IN:

iron

milk

meat

fish liver oil

# PHYSIOLOGICALLY MOST ACTIVE FORM OF VITAMIN D IS:

calciferol

cholecalciferol

ergocalciferol

calcitriol

# MOST ESSENTIAL FATTY ACID IS:

linoleic acid

linolenic acid

arachidonic acid

all of the above

# ALL ARE ESSENTIAL FATTY ACIDS EXCEPT:

linoleic acid

linolenic acid

arachidonic acid

glutamic acid

# HYPOTHYROIDISM IS ASSOCIATED WITH DEFICIENCY OF AN IRON:

iron

iodine

zine

fluorine

# CHRONIC MALNUTRITION IS ASSESSED BY:

weight/height

height/age

weight/age

mid arm circumference

# ALL OF THE FOLLOWING STATEMENTS ARE TRUE WITS RECARD TO A REFERENCE INDIAN ABULT WOMAN EXCEPT:

she is healthy

she is between 20-39 years of age

she may be engaged in 8 hours of moderately active work in a day

she weighs 60 kg

# VITAMIN D IS MAXIMALLY FOUND IN:

milk

egg

green leafy vegetables

halibut liver oil

# HUMAN MILK AS COMPARED TO COWS MILK IS:

rich in lactose

rich in vitamin D

rich in minerals

rich in proteins

# ZINC IS NOT REGUIRED FOR:

embryonic development

coagulation pathway

DNA synthesis

spermatogenesis

ACTIVE FORM OF VITAMIN D IS:

cholecalciferol

24,25 hydroxy vitamin D

1,25 hydroxy vitamin D (calcitriol)

25 hydroxy vitamin D

# WHAT IS THE DOSAGE OF RETINOL PALMITATE FOR EARLY STAGES OF XEROPHTHALMIA:

90 mg orally on two successive days

100 mg orally on two successive days

110 mg orally on two successive days

120 mg orally on two successive days

# MID DAY MEAL SHOULD PROVIDE:

half of the total energy requirement and half of the protein need

half of the total energy requirement and one-third of the protein need

one-third total energy requirement and half of the protein need

one-third total energy requirement and half of the protein need

# ADDITIONAL CALORIE ALLOWANCE FOR A MOTHER DURING FIRST SIX MONTHS OF LACTATION SHOULD RANGE BETWEEN:

250-300 kcal

350-400 kcal

500-550 kcal

650-700 kcal

# ALL OF FOLLOWING STATEMENTS ARE TRUE WITH REGARD TO A REFERENCE INDIAN ADULT WOMAN EXCEPT:

she is healthy

she is between

she may be engaged in 8 hours of moderately active work in a day

+she weighs 60kg

# ESTIMATE OF MILK ADULTERATION CAN BE ACHIEVED BY:

the determination of specific gravity, the presence of starch and soda

determination of acidity, dry residue and specific gravity

teston reductase, determination of organoleptic properties of milk

recycleable

# PELLAGRA, MANIFESTED DERMATITIS, DEMENTIA AND DIARRHEA, ARE CHARACTERISTIC OF LACK OF …:

А

РР

С

В12

# IRON EXCHANGE IN THE BODY IS CLOSELY CONNECTED WITH VITAMIN:

В6

С

РР

В1

# TO DEVELOPMENT OF XEROPHTHALMIA LEADS VITAMIN ……..DEFICIENCY:

E

PP

A

B1

# SIGNS OF VITAMIN B1 (THIAMINE) LACK:

night blindness, diarrhea

+neurosis, peripheral polyneuritis

dermatitis, diarrhea

# ANTIOXIDANT PROPERTIES ARE EXPRESSED MOSTLY IN VITAMIN:

Е

РР

А

В12

# DISEASE BERIBERI IS CAUSED BY DEFICIENCY OF VITAMIN:

В6

С

РР

В1

# PROTEINS IN TO CONTAINING THE ESSENTIAL AMINO ACIDS, CONTAIN:

in products of plant origin

in products of animal origin

in drinking water

In the alcoholic beverages

# СOMPLEX CARBOHYDRATES INCLUDE:

sucrose, lactose and maltose

glucose, fructose and galactos.

starch, pectins and cellulose

# FOOD STUFFS THAT ARE SOURCES OF IODINE:

red meat, poultry meat

milk and milk products

vegetables, fruits, nuts, grain products

fish, shellfish, algae

# TYPES OF NUTRITIONAL STATUS:

satisfactory, unsatisfactory; abruptly unsatisfactory

optimal, normal, insufficient, excess

average, below average, above average

**General hygiene**

# SOILING INDEX IS USED TO MONITOR:

water pollution

air pollution

soil pollution

all of the above

# IN INDIA, AT LEAST HOW MANY METERS AWAY THE SANITARY WELL SHOULD BE LOCATED FROM SOURSE OF CONTAMINATION:

10 meters

15 meters

50 meters

75 meters

# IN CHLORINATION OF WATER, THE MAIN DISINFECTING ACTION IS DUE TO:

hypochlorite ions

hydrogen ions

hydrochloric acid

hypochlorous acid

# GAMMA RAYS ARE USED FOR STERILIZATION OF:

catheters

canulas

syringes

all of the above

# AUTOCLAVING IS NOT USEFUL FOR DISPOSAL OF:

surgical dressing

metallic instruments

petri dishes

+liquid paraffin

# COMFORT ZONE OF TEMPERATURE IS:

25-26,9C

27-29C

less 19С

19-23С

# SCREENING OF THE DISEASES IS WHICH TYPE OF PREVENTION?

primordial

primary

secondary

tertiary

# MAXIMUM PERMISSIBLE NOISE LEVEL IN HOSPITAL WARDS IS:

20-35 dBA

35-40 dBA

40-45 dBA

50-60 dBA

# PREFERRED BACTERIOLOGICAL INDICATOR OF FAECAL CONTAMINATION OF WATER:

faecal streptococci

cl. prefringens

faecal staphylococci

e. coli

# SOILING INDEX DETERMINES:

contraception failure

air pollution

number of hookworm eggs

ratio of mucus secreting glands to thickness of wall of airways

# MAXIMUM PERMISSIBLE LEVEL OF CHLORIDE IN DRINKING WATER IS:

200 mg litre

300 mg litre

600 mg litre

800 mg litre

# BAGASSOSIS IS DUE TO INHALATION OF:

cotton dust

silica dust

sugarcane/bagasse dust

coal dust

# WHICH OF THE FOLLOWING IS THE GREATEST CJNTRIBUTON TO GLOBAL WARMING AS A CONSEQUENCE OF HUMAN ACTIVITES AND LIFE STYLE:

CO2

chlorofluorocarbons

methane

ozone

# IN LIVING ROOMS, NUMBER OF AIR CHANGES IN ONE HOUR SHOULD BE:

1-2

2-3

3-4

4-5

# WHICH OF THE FOLOWING IS CONSIDERED AS AN IDEAL BACTERIOLOGICAL INDICATOR AS ACCEPTABILITY ASPECT OF WATER:

clostridium tetani

clostridium botulinum

clostridium perfringenes

all of the above

# AMOUNT OF TREE RESIDUAL CHLORINE IN DRINKING WATER:

0.1 mg/l

0.5 mg/l

1.0 mg/l

1.5 mg/l

# GUIDELINE VALUE FOR DRINKING WATER IS:

1 coliforms per 100ml

10 coliforms per 1000 ml

zero coliforms per 100 ml

100 coliforms per 10,000 ml

# WHICH OF THE FOLLOWING IS FALSE REGARDING REPAIRABLE DUST:

may lead to pneumoconiosis

smaller than 5 microns is repairable

silicosis is the most common dust disease

soluble dust remains in the lungs for a long time

# RECOMMENDED FLOURIDE CONCENTRATION IN WATER TO PREVENT CARIES IS:

0

0.5 ppm

1ppm

1.5pmm

# NITRATES IN DRINKING WATER INDICATES:

remote fecal pollution

recent fecal pollution

unpolluted water

water fit for drinking

# THE ACCEPTABLE NOISE LEVEL THAT CAN BE TOLERATED WITHOUT ANU DAMAGE TO HEARING IS:

85 db

90 db

95 db

100db

# WHICH OF THE FOLLOWING IS THE MOST RELIABLE BACTERIOLOGICAL INDICATOR OF WATER POLLUTION:

fecal steptococci

salmonella typhi

Escherichia coli

clostridium tetani

# SOFTENING OF HARD WATER IS REQUIRED IF LEVEL OF HARDNESSEXCEEDS:

50mg/l

150mg/l

200mg/l

250mg/l

# THE DISINFECTING ACTION OF CHLORINE DURING CHLORINATION IS MAINLY DUE TO THE ACTION OF:

hydrochloric acid

hypochloric acid

hypochlorous acid

hydrochlorous acid

# IN A FACTORY, SICKNESS ABSENTEEISM PREDICTS:

relationship between employee and employer

working environment

managerial control

state of health of workers

# KATA THERMOMETER IS USED TO MEASURE:

air pressure

degree of hotness in air

air cooling power

air density

# TARGET FOR WATER SUPPLY IN RURAL AREAS OF INDIA IS:

30 liters per capita per day

40 liters per capita per day

50 liters per capita per day

60 liters per capita per day

# RATIO OF DOORS AND WINDOWS TO THE FLOOR FOR A CLASSROOM SHOULD BE AT LEAST:

20%

25%

30%

35%

# ANTI TOBACCO DAY IS:

1 may

15 may

25 may

31 may

# MINIMUM DURATION OF DEVELOPING COAL MINER PNEUMOCONIOSIS:

2-4 years

4-6 years

8-10 years

more than 10 years

# BODY MASS INDEX-PERCENTILE, WHICH INDICATE OBESITE IS:

80

85

90

95

**#** WHICH OF THESE PNEUMOCONIOSIS IS NOT A NOTIFIABLE DISEASE UNDER FACTORY,S ACT 1948 IN INDIA:

byssinosis

bagassosis

silicosis

asbestosis

# SIZE RANGE OF DUST, WHICH IS REGARDED AS HEALTH HAZARD:

0.1 to 0.3 microns

0.3 to 0.5 microns

+0.5 to 3 microns

3 to 5 microns

# MESOTHELIOMA IS CLOSELY ASSOCIATED WITH WHICH OF THE FOLLOWING:

silicosis

anthracosis

byssinosis

asbestosis

# AGE PYRAMID OF INDIA IS:

broad at base and narrow at apex

broad from base to apex

broad at apex and narrow at base

spindle shaper

# BLINDNESS RATE IN INDIA DUE TO REFRACTIVE ERRORS:

62.6%

19.7%

5.8%

6.2%

# BMI OBESITY STARTS:

25

30

35

40

# BODY MASS INDEX IS CALCULATED BY:

(weight in kg/height in meters2)

(weight in kg/height in meters3)

(weight in kg2)/height in meters2)

(weight in kg2 x height in meters2)

# ACCEPTABLE NOISE LEVEL (IN DECIBELS) FOR HOSPITAL WARDSIS:

20-35

35-45

45-55

50-60

# ASBSESTOSIS IS ASSOCIATED WITH WICH CANCER:

lung cancer

liver cancer

colon cancer

stomach cancer

# MESOTHELIOMA IS SEEN IN WHICH TYPE OF PNEUMOCONIOSIS:

anthracosis

byssinosis

asbestosis

silicosis

# BAGASSOSIS IS THE NAME GIVEN TO OCCUPATIONAL DISEASE OF LUNG CAUSED BY INHALATION OF:

silica

cotton dust

sugarcane dust

asbestos

# ALL ARE FALSE ABOUT LEAD POISONING EXCEPT:

CPU more than 100mcg/l indicates exposure to lead

greatest source is drinking water from lead pipes

stippling of basophils is a significant finding

can cause blue line on gums

# ONE OF THE FOLLOWING SYMPTOMS IS NOT CAUSED BY INORGANIS INORGANIC LEAD POISING:

anemia

insomnia

pallor

burtonian line

# NAUSERA, VOMITING, BLUE LINE ON GUMS, WRIST FOOL DROPS, PALLOR, COLIC ARE MANIFESTATION OF POISONING DUE TO:

mercury

organic lead

inorganic lead

# TRUE ABOUT EST ACT 1948:

applicable on educational institutions also

employer employee contribution is 1.75:4.75%

maternity benefit for 3 months

benificiaries are those income with more than 15000/month

# ACCRDING TO ESI ACT 1948, 4.75 PERCENT OF TOTAL WAGE BILL OF EMPLOYER IS:

total wages

turn over

profit

contribution

# THE TYPE OF HAIS TRANSMISSION WAY THROUGH PATIENT-CARE ITEMS, CLOTHES, MEDICAL INSTRUMENTS, EQUIPMENT, THE HANDS OF THE MEDICAL STAFF IS:

сontact way

droplet way

airborne way

# THE TYPE OF HAIS TRANSMISSION WAY THROUGH THE INTRODUCTION OF INFECTED BLOOD PRODUCTS, ISOTONIC SOLUTIONS AND OTHER DRUGS IS:

contact way

+parenteral way

airborne way

# THE TYPE OF HAIS TRANSMISSION THROUGH MILK, DRINKING SOLUTIONS, FOOD, IS:

contact way

droplet way

alimentary way

# IN A BABY WARD, TEMPERATURE SHOULD BE:

27-29 0C

29-31 0C

32-33 0C

33-35 0C

# SHARP BIOMEDICFL WASTES SHOULD BE DISPOSED IN COLOR BAG (ACCORDING TO RULS 2016):

blue

white

red

yellow

# CATEGORY 7 ON BIOMEDICFL WASTE MANAGEMENT (ACCORDING TO RULS 1998) CONTAINS:

soiled waste

solid waste

liquid waste

incineration ash

# AVERAGE HOSPITAL WASTE PRODUCED PER BED PER DAY IN GOVT HOSPITALS IS:

1,5-2,0kg

0,5-4,0kg

0,5-2,0kg

1,5-4,0kg

# HUMAN ANATOMICAL WASTE IS PUT IN (ACCORDING TO RULS 1998):

yellow

red

blue

black

# NUMBER OF CATEGORIES OF BIOMEDICAL WASTE (ACCORDING TO RULS 2016):

4

6

10

5

# WHAT PROCESS IS BASIS OF BACTERICIDAL EFFECT OF UV RADIATION:

photoelectric effect

stroboscopic effect

denaturation of the protein

thermal effect

# VISIBLE PART OF SOLAR SPECTRUM IS WAVELENGTH:

290-400

400-760

760-2800

290-760

# WHAT INSTRUMENTS ARE USED TO DETERMINE THE HUMIDITY OF THE AIR:

psychrometer

catathermometer

anemometer

barograph

# VENTILATION THE PREDOMINANCE SUPPLY MUST HAVE:

physiotherapy room

X-ray room

operating room

dressing

# EXHAUST VENTILATION IS USED IF:

premises contaminated by harmful substances

premises has no natural ventilation

premises is located in the basement

# WATER CONTENT IN THE BODY OF AN ADULT:

80%

50-55%

60-70%

# WHAT SUBSTANCE IN WATER CAN LEAD TO MOTTLING OF TEETH AND, IN SEVERE CASES, CRIPPLING SKELETAL FLUOROSIS:

Lead (Pb)

Selenium (Se)

Nitrates (NO3)

Fluoride (F)

# WHAT SUBSTANCE IN WATER CAN LEAD TO METHAEMOGLOBINAEMIA:

Lead (Pb)

Selenium (Se)

Nitrates (NO3)

Fluoride (F)

# PROLONGED USE OF WATER WITH HIGH HARDNESS CAN LEAD TO:

methaemoglobinaemia

urolithiasis

Fluorosis

# THE FOLLOWING DISEASE HAS WATERWAY TRANSMISSION:

influenza

giardiasis

botulism

gas gangrene

tetanus

# THE CHEMICAL METHODS OF DISINFECTION INCLUDE:

chlorination

gamma radiation (γ-radiation)

defluorination

boiling

# DISINFECTION IS A METHOD OF WATER PURIFICATION FROM:

suspended particles

infectious agents

colored colloids

iron

# THE PHYSICAL METHODS OF DISINFECTION INCLUDE:

ultraviolet radiation

desalination

oligodynamic effect of silver

fluoridation

# THIS GAS PREVENTS HEMOGLOBIN FROM CARRYING OXYGEN TO TISSUES, EFFECTIVELY REDUCING THE OXYGEN CARRYING CAPACITY OF BLOOD, RESULTING IN HYPOXIA:

sulfur oxides

nitrogen oxides

carbon monoxide

carbon dioxide

# ACID RAIN IS CAUSED BY AIR EMISSIONS OF:

chlorine-containing gases

sulfur dioxide and nitrogen oxide

particulate matter

carbon monoxide and nitrogen

# DISEASES WITH THE HIGHEST PERCENTAGE OF DEATHS CAUSED BY AIR POLLUTION:

cardiovascular diseases

lung cancer

lung disease

nervous diseases

# WHICH MICROORGANISMS ARE PERMANENT INHABITANTS OF SOIL:

spore-forming organisms

helminths

viruses

coliform bacteria

# THE AVERAGE WEATHER OVER A LONG PERIOD IS:

inversions

climate

droughts

weather

# WHAT ARE THE PRIMARY CRITERIA FOR EVALUATING THE HEALTH STATUS OF CHILDREN:

physical development

neuropsychological development.

level of resistance.

functional state of the organism

all of the above

# THE PHYSIOMETRIC INDICATORS FOR ASSESSING THE PHYSICAL DEVELOPMENT OF CHILDREN INCLUDE:

vital capacity of lungs

shape of the foot

growth

body weight

# THE SOMATOMETRIC FEATURES FOR ASSESSING THE PHYSICAL DEVELOPMENT OF CHILDREN INCLUDE:

body weight

shape of the foot

backbone

strength of the back muscles

# HOW MANY PHASES OF THE CURVE OF EFFICIENCY:

1

5

3

4

# CRITERIA FOR INTENSITY OF WORK:

stereotyped movements

moving in the space of the body

weight lifted

sensor load

# CRITERIA FOR SEVERITY OF WORK:

emotional stress

load on the visual analyzer

weight lifted

sensor load

# DEFINITION: «A HEALTHY LIFESTYLE»:

way of life aimed at preserving and improving the health of people as the conditions and prerequisites for the existence and development of other aspects of lifestyle

prevention of infectious and noninfectious diseases, with the exception of epidemics and other mass diseases

prevention and treatment of addiction (alcohol, drug, tobacco, etc.).

# THE DEFINITION OF «HEALTH» ACCORDING TO THE WORLD HEALTH ORGANIZATION:

health - is the absence of disease or infirmity

health - is «a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity»

health - is an innate property of the organism, depending on heredity

# TYPES OF PREVENTION, DEPENDING ON THE HEALTH STATUS, RISK FACTORS FOR THE DISEASE, OR THE SEVERITY OF DISEASE IN HUMANS:

individual and public prevention

primary, secondary and tertiary prevention

industrial, educational, medical, and others prevention

# METHODS FOR THE PREVENTION OF THE USE OF FUNDS:

verbal, printed, visual, combined

transfer on radio and television, Internet resources

talks, lectures, discussions

***Assessment materials for each topic of the discipline:***

**Topic 1** Hygienic assessment of microclimate in premises its effect on the heat exchange and health of the population

**Forms of ongoing monitoring of academic performance:**

- oral interview;

- practical task completion;

- tests

**Assessment materials of the current control of academic performance:**

**- Questions and tasks for consideration:**

1. The concept of microclimate. Microclimate factors. Types of microclimate. Influence of climate on human health.
2. Heat exchange. Chemical and physical thermoregulation.
3. Hygienic regulation of microclimate parameters.
4. Hygienic characteristic of heating systems.
5. Apparatus and methods for assessing microclimate**.**

**- Typical practical tasks for testing skills:**

1. Determination of the temperature and humidity with Assman psychrometer.
2. Determination of the cooling capacity of the air by catathermometer.
3. Determination of air velocity calculation method.
4. Integrated assessment of climate by effective temperatures.

**- Practical task completion** (independent work of the student).

**1. Determination of the temperature and humidity with Assman psychrometer**.

Assmann Aspiration Psychrometer defines the absolute and relative humidity. It consists of two mercury thermometers, one dry, the other - wet. The principle of action of the aspiration psychrometer is as follows: depending on the humidity, temperature and air velocity the rate of water evaporation from the wet bulb changes.

Examine the rules for determining the humidity of the air aspiration psychrometer.

Indications of dry and wet thermometers allow according to calculate the absolute humidity the formula:

K = F - 0.5 (T - T1) \* B / 755

where K - absolute humidity, mm Hg.

F - the maximum water vapor pressure of wet thermometer, mm Hg.;

T - dry thermometer temperature, 0C;

T1 - wet thermometer temperature, 0C;

B - actual barometric pressure, mm Hg.

**Relative humidity is calculated according to the formula:**

F = K / F \* 100

where F - relative humidity,%;

K - absolute humidity, mm Hg.;

F1 - the maximum humidity at a temperature of dry bulb.

The relative humidity is determined from a nomogram-indicators at the intersection of dry and wet thermometers.

Relative humidity indoors should be measured in the center of the room at a height of 1.1 m from the floor.

1. **Determination of the cooling capacity of the air with catathermometer.**

Catathermometer is a device for determining the air velocity in the small areas (1-2 m / s), it can be of two types: Hill catathermometer, which has a cylindrical tank and ball catathermometer. Due to the heat capacity of alcohol and glass, determine amount of heat when cooling from 38 to 35 the device loses, which is detected in the laboratory for each katathermometer. This heat loss is marked on each catathermometer (F).

It was found that the optimal cooling air capacity for people of the so-called "sedentary" jobs coincides with the cooling catathermometer within 5.5-7.0. With higher readings of catathermometer people feel cold, with less - stuffiness. For those who do easy physical work optimal cooling catathermometer value is 8.4-10.0 hard - 15.4-28.4.

For the measurement, the device is heated in hot water (65-70) until the alcohol does not fill half of the upper tank; remove from water, wipe dry catathermometer and place on the test stand in the place protecting from the effects of radiant energy; the fixed time of lowering the alcohol is from 38 to 35. The calculation is performed using the following formula:

H = F / a

where H - the value of the cooling device, the cooling capacity of the air characterizing under these conditions mcal / cm / sec;

F - factor device and - the number of seconds during which alcohol dropped from 380 to 350

**Test tasks**

**1. What type of heat prevails at rest and thermal comfort:**

a). convection

b). radiation

с). evaporation

d). conduction

**2. When a humidity person will feel better if the ambient temperature is 350 ° C:**

a). thirty%

b). 60%

с). 80%

**3. Heat production increases for t0 ambient air:**

a). below 150C

b). 15 - 250C

с). 25 - 350C

**4. The heat production is reduced for t0 ambient air:**

a). below 150C

b). 15 - 250C

с). 25 - 350C

d). above 350C

**5. What instruments are used to determine the humidity of the air:**

a). psychrometer

b). catathermometer

с). anemometer

d). barograph

**6. For a heating system characterized by the highest temperature of the heating surface (800)**

a). water

b). steam

с). Air

d). radiant panel

**7. What does the path of the radiation of heat transfer:**

a). heating the air surrounding the body

b). radiative heat transfer from the surrounding surfaces

c). impact heat by evaporation of water

d). impact of heat on contact with surrounding objects

**8. What is the main way of heat when the ambient temperature is 350C and humidity of 40%**

a). convection

b). radiation

c). evaporation

d). conduction

**9. How the unit determines the velocity of the air:**

a). catathermometer

b). psychrometer

c). hygrometer

d). barograph

**10. What does the convection path of heat transfer:**

a). heating the air surrounding the body

b). radiative heat transfer from the surrounding surfaces

c). heat output resulting from evaporation of water

d). impact of heat on contact with surround

**Topic 2.** Hygienic assessment of natural and artificial lighting

**Forms of ongoing monitoring of academic performance:**

- oral interview;

- practical task completion;

- tests

**Assessment materials of the current control of academic performance:**

**Questions and tasks for consideration:**

1. The value of solar radiation for humans. The biological significance of the visible, infrared and ultraviolet parts of the solar spectrum.
2. External and internal factors affecting the lighting in the room.
3. Indicators of natural lighting
4. Hygiene requirements for artificial lighting. Integrated and combined lighting.
5. Assessment methodology of illumination with the help of luxmeter.

**Typical practical tasks for testing skills:**

1. Determination of the light factor.

2. Determination of the natural light.

3. Determination of natural and artificial lighting in the workplace

**- Practical task completion (independent work of the student).**

1 Light factor (LF) - a ratio of the glass surfaces of windows to floor area. The classrooms and rooms, operating it should not be less than 1:4 - 1:5, in hospital wards - 1:5 - 1:6, in a residential area - 1:8-1:10. However, this figure does not take into account many things that can affect the degree of illumination.

Daylight factor (DLF) - the ratio of illumination at a given point in space at the same time the outdoor lighting in a diffused light, expressed as a percentage. CNL is determined experimentally using a light meter and the calculation is made using the formula:

DLF = E1 / E2 \*100%,

where E1-horizontal illumination indoors;

E2- illumination horizontally outside the building.

The classrooms and operating rooms DLF should be at least 1.5%. in living rooms, hospital wards - not less than 0.5%.

**Test tasks**

**1**. What process is basis of bactericidal effect of UV radiation:

a) photoelectric effect

b) stroboscopic effect

c) denaturation of the protein

g) thermal effect

2. What is device determines illumination

a) catathermometer

b) light meter

c) Barometer

d) Control Meter

3. Light coefficient - this attitude:

a) area of the ceiling to the floor area

b) area of the windows in the area of the inner wall

c) area of casements to the floor area

g) area of windows to floor area

4. What is wavelength at visible part of solar spectrum?

a) 290-400

b) 400-760

c) 760-2800

g) 290-760

5 Fixtures arranged evenly on top of the chamber, this coverage:

a) General

b) local

c) combined

6. Сoefficient natural light in chambers normally should be at least:

a) 0.5%

b) 1%

c) 1.5%

g) 2%

7. How does the Light coefficient during the day:

a) increases

b) decreases

c) no change

8. What is a mixed lighting?

a) General and local

b) Natural and artificial

c) general and natural

9. What is the wavelength at the infrared part of the solar spectrum?

a) 290-400

b) 400-760

c) 760-2800

g) 290-760

10. What is the stroboscopic effect:

a) violation of color

b) glare

c) distortion of perception of moving objects

d) changes in physical and chemical composition of the air

**Topic 3** Definition of hospital hygiene and general requirements for hospitals

**Forms of ongoing monitoring of academic performance:**

- recitation

- solving problem-situational tasks;

- testing

**Assessment materials of the current control of academic performance:**

**- Questions and tasks for consideration:**

1. Definition of hospital hygiene.
2. General requirements for hospitals.
3. Prevention of hospital acquired infections.
4. Non-specific prevention of hospital acquired infections.
5. Safe disposal of medical waste.

**- Situational tasks on the topic of the practical lesson:**

**Case 1**

In the operating room of the surgical department, the following types of waste are generated: used gloves, cotton swabs and bandages contaminated with the biological fluids of patients, waste of tissues and organs, etc.

1. Determine the category end type of medical waste according to Biomedical waste management rules, 2016.
2. Name the ways of this medical waste segregation and disposal.

**Case 2**

In the chemotherapy department of the oncology clinic waste (containers, ampoules, etc.) contaminated with drug residues (including cytostatics) is generated.

1. Determine the category end type of medical waste according to Biomedical waste management rules, 2016.

2. Name the ways of this medical waste segregation and disposal.

**Case 3**

In the laboratory, workings with microorganisms of the 1-4th group of pathogenicity the following types of waste are formed: cultures of microorganisms, nutrient media with the culture of microorganisms, etc.

1. Determine the category end type of medical waste according to Biomedical waste management rules, 2016.

2. Name the ways of this medical waste segregation and disposal.

**Case 4**

In the surgical department the following types of waste are generated: discarded linen, mattresses, beddings contaminated with blood or body fluid.

1. Determine the category end type of medical waste according to Biomedical waste management rules, 2016.

2. Name the ways of this medical waste segregation and disposal.

**Case 5**

In the operating room of the surgical department, the following types of waste are generated: disposable items such as tubing, bottles, intravenous tubes and sets, catheters, urine bags, syringes (without needles and with fixed needle syringes), Needles, needles from needle tip cutter or burner, scalpels, blades, or any other contaminated sharp objects that may cause puncture and cuts, etc.

1. Determine the category end type of medical waste according to Biomedical waste management rules, 2016.

2. Name the ways of this medical waste segregation and disposal.

**Case 6**

In the operating room of the surgical department, the following types of waste are generated: used gloves, cotton swabs and bandages contaminated with the biological fluids of patients, waste of tissues and organs, etc.

1. Determine the category end type of medical waste according to Biomedical waste management rules, 2016.

2. Name the ways of this medical waste segregation and disposal.

**Test tasks**

**1. A hospital is typically the major health care facility in the region, with large numbers of beds for intensive care and long-term care is:**

1. district hospital
2. general hospital
3. specialized hospitals

**2. Medical waste can be generated from nuclear medicine treatments, cancer therapies and medical equipment that uses radioactive isotopes, is called:**

1. Infectious waste
2. Hazardous waste
3. Radioactive waste
4. General waste

**3. Type of hospital, which may exist in form of trauma centers, rehabilitation hospitals, children's hospitals, seniors' (geriatric) hospitals, and hospitals for dealing with specific medical needs such as psychiatric problems, certain disease categories such as cardiac, oncology, and so forth, is:**

1. district hospital
2. general hospital
3. specialized hospitals

**4. The type of HAIs transmission way through patient-care items, clothes, medical instruments, equipment, the hands of the medical staff is:**

1. Contact way
2. Droplet way
3. Airborne way

**5. Complete the following sentence:**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_** affect patients in a hospital or other health-care facility. They also include infections acquired by patients in the hospital but appearing after discharge, and occupational infections among staff.

**6. Medical waste, which is no different from general household or office waste, and includes paper, plastics, liquids and any other materials is called:**

1. Infectious waste
2. Hazardous waste
3. Radioactive waste
4. General waste

**7. The type of HAIs transmission way through the introduction of infected blood products, isotonic solutions and other drugs is:**

1. Contact way
2. Parenteral way
3. Airborne way

**8. Complete the fallowing sentence:**

The branch of hygiene related to the administration of medicine, and medical care, that prevents or minimizes disease and the spreading of disease is\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**9. Medical waste that has the possibility of causing infections in humans is called:**

1. Hazardous waste
2. Infectious waste
3. General waste
4. Radioactive waste

**10. Sources of Health care-associated infections:**

1.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Topic 4.** Hygienic (sanitary) peculiarities (features) of specialized departments of the hospital

**Forms of ongoing monitoring of academic performance:**

- recitation

- solving problem-situational tasks;

- testing

**Assessment materials of the current control of academic performance:**

**Questions and tasks for consideration:**

1. Sanitary and hygienical requirements which are necessary for the planning and regime hospital emergency rooms.
2. Planning ward department (section). Set of rooms in the ward section. Types ward section.
3. Sanitary and hygienical requirements which are necessary for the planning operation block. Types operation block.
4. Accommodation plan in the operation block. Arrangement of sanitary inspection room.
5. Code of good practice of the medical personnel with surgical patients who have infection (contagion), caused by resistant staphylococcus aureus
6. Sanitary and hygienical requirements which are necessary for the planning for infectious hospital. layout Isolation ward.
7. Sanitary and hygienical requirements which are necessary for the planning and regime wards for the patients with depressed immunity
8. Sanitary and hygienical requirements which are necessary for the planning maternity hospitals (obstetric). Part of obstetrical department. Types obstetrical department

8. Requirements to the hospital interior.

9. Requirements to the air in the rooms.

**Situational tasks on the topic of the practical lesson:**

**Situational problem №1**

Obstetric hospital is located in a two-story building. On the first floor of the hospital is receiving pregnant infectious and not infectious, there is no observational department. In the middle of the corridor there is isolation Word (boxing) for infectious pregnant. At the end of the corridor there is a maternity unit for normal and operative delivery. Infectious and non-infectious pregnant women give birth in the same room in different beds simultaneously. On the second floor there is a postnatal unit where mother and baby stay together. In the word there are 6 beds for 3 mothers and 3 of baby. At the beginning of the ward corridor there is an isolation Word for maternal and neonatal infections. The walls of the chambers and the generic unit are painted in all rooms are washing facilities, which are included hands. All the rooms have windows obstetric hospital and ventilated premises. Daily after operative delivery operating aired for one hour. The air in the room is supplied after the Maternity unit for cleaning filters in the upper zone and also removes air from the upper zone.

1. Write sentences from the text of the problem, where there are violations of sanitary and hygienic

2. Write your recommendations to remedy the violations.

**Situational problem №2**

The surgical center is located in a six-story building. On the first floor is the emergency room. At a reception function includes: inspection of the skin, throat, temperature measurement, inspection for lice, the collection of epidemiological history, sanitary treatment of emergency patients. After the admissions ward patient enters the section. Ward section odnokoridornaya standard. The patient enters the ward section of the corridor admissions. Gateway is not available. A set of premises ward sections: premises for stay of patients - the Chamber, medical support facilities - the doctor's office, procedural (handling), post nurse, dressing, household - pantry, dining room, laundry room, matrons and senior nurses. Sanitary room available. Objects stored in a toilet cleaning. WC common for medical staff and patients. They feed patients in the dining room. Next to the canteen there is a buffet where the food laid out on portions. The pantry wash the dirty dishes. The food goes to the buffet at the elevator, on the same lift move patients and medical personnel. Elevator in the hospital alone. Not far from the main cardiology center has an operating unit which is connected to the transition to the building of Cardiology Center. The operating unit enters the patient on the wheelbarrow. Next, the patient arrives in the sanitary inspection and operating room. The also medical personnel goes into the operating room through sanitary inspection, where he takes a shower and puts on sterile clothes. Sanitary inspection consists of two rooms. In the first room the medical personnel takes a shower, and the second indoor clothes sterile clothes, returned to the operating personnel and the staff room. Operblok consists of two zones: a sterile zone and a zone of a hospital treatment area includes. In one operating operate and purulent and septic patients. Initially operate septic patients, then no septic patients.

1. Write sentences from the text of the problem, where there are violations of sanitary and hygienic

2. Write your recommendations to remedy the violations.

**Test tasks**

**1. Going into ward section, there should be:**

1. gateway

2. the sanitary inspection room

3. box

4. nurse's area.

**2. Number of beds in Postnatal unit where mother and baby stay together are:**

1. not more than 8 beds

2. not more than 2 beds

3. no more than 2 mother’ and 2 children's beds

4. not more than 4 mother’ beds and 4 children's beds

**3. Epidemiological task of the hospital emergency room is:**

1.not to admit the patient who has infection disease signs

2. inspection for lice

3. sanitizing patient

4. emergency medical care

**4. Number of beds in the ward for patients with depressed immunity:**

1. 4 beds

2. 3 beds

3. 2 beds

4. 1 bed

**5. No windows for ventilation in:**

1. toilet

2. Bathroom

3. operating room

4.sanitary room

**6. Medical staff gets to operating block through**:

1. gateway

2. the sanitary inspection room

3. box

4. nurse's area

**7. The number of zones in the operation block**:

1.1 zone

2.2 zones

3.3 zones

4. 4 zones

**8. Noncontact sinks should be in:**

1. gateway

2.restroom

3. Operating block

4. nurse's area

**9. The optimal type of ward section:**

1. Standard one-corridor ward section

2. Two-corridor ward section

3. Ward section with individual (isolated) compartment for medical personnel

**10. The rooms which are not included in the structure of boxing:**

1. patient’s outside entrance

2. gate/gateway

3. ward

4. restroom with a bath

5. dining room

**Topic 5.** Hygienic requirements for ventilation of hospitals.

**Forms of ongoing monitoring of academic performance:**

- recitation

- practical task completion;

- testing

**Assessment materials of the current control of academic performance:**

**- Questions and tasks for consideration:**

1.The features of air composition of the hospital. Sources of air pollution in hospitals.

2. Criteria for indoor air quality in hospitals (bacteriological, chemical).

3. Polymer materials in medicine. Classification of polymer materials.

4. Natural and artificial ventilation. Types of ventilation. The role of ventilation in the prevention of nosocomial infections.

**- Typical practical tasks for testing skills:**

1. Determination of multiplicity of the air exchange.

**- - Practical task completion (independent work of the student).**

Multiplicity of the air - the ratio of the volume of air supplied to the premises, or removed from it for an hour, to the internal volume of the room.

Multiplicity of the air is determined by the formula

K = a \* b \* c / V

where,

a - the ventilation space, m2;

b - the air velocity, m / s;

с - airing with;

V - volume of the room m3.

**Test tasks**

1. The supply and exhaust ventilation system with a predominance of exhaust have

1. X-ray room;

2. operating room;

3. dressing room;

4. maternity room.

2. Ventilation the predominance supply must have

1. physiotherapy room;

2. X-ray room;

3. operating room;

4. dressing.

3. In the hospital ventilation rate exceed

1. 3;

2.0,5;

3.1.

4. Exhaust ventilation is used if

1. premises contaminated by harmful substances;

2. premises has no natural ventilation;

3. premises is located in the basement.

5. Hospitals equip

1. Supply -exhaust ventilation;

2. exhaust ventilation;

3. Supply/

6. Ventilation the predominance supply must have

1. physiotherapy room;

2. X-ray room;

3. operating room;

4. dressing.

7. Exhaust ventilation is used if

1. premises contaminated by harmful substances;

2. premises has no natural ventilation;

3. premises is located in the basement.

8. The supply and exhaust ventilation system with a predominance of exhaust have

1. X-ray room;

2. operating room;

3. dressing room;

4. maternity room.

9. Hospitals equip

1. Supply -exhaust ventilation;

2. exhaust ventilation;

3. Supply

10. In the hospital ventilation rate exceed

1. 3;

2.0,5;

3.1.

**Topic 6.** Theory of Radiation Hygiene. The biological effects of ionizing radiation

**Forms of ongoing monitoring of academic performance:**

- recitation

- solving problem-situational tasks;

- testing

**Assessment materials of the current control of academic performance:**

**Questions and tasks for consideration:**

1. Main terms and the subject matter of Radiation Hygiene.
2. Ionizing radiation sources.
3. Natural radiation. Background radiation.
4. Types of ionizing radiation.
5. Factors causing ionizing radiation effects on the human body.
6. The biological effects of radiation on the human body. "Deterministic effects" and "Stochastic effects".
7. Acute radiation syndrome

**Situational tasks on the topic of the practical lesson:**

Case 1

 37 years man was involved in the liquidation of the Chernobyl accident. He had weakness, nausea, vomiting within 2 hours after work. The received external radiation dose was 15 Gy. The man was taken to a hospital.

 A grave condition, abdominal pain, pain in muscles and joints, [headache](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%b3%d0%be%d0%bb%d0%be%d0%b2%d0%bd%d0%b0%d1%8f%20%d0%b1%d0%be%d0%bb%d1%8c&translation=headache&srcLang=ru&destLang=en), skin reddening, purpura. Pulse rate was 60 per one minute, arterial pressure was 80/50 mm Hg, body temperature was 38.4° C.

 The patient's condition improved after 3 days, but the general condition of the patient deteriorated 2 days later, body temperature increased to 39° C, loss of appetite, severe diarrhea, decrease level of consciousness. Blood tests revealed erythrocytes 2,5\*1012/l,, HB 80 g/l, reticulocytes 0,2 %, leukocytes 1,5\*109/l, lymphocytes 0,2\*109/l, platelets 9\*109/l, ESR 50 mm/h. Bone marrow analysis: the number of proliferating erythroblasts decreased by 60%.

 Intestinal bleeding and peritonitis appeared by the end of the week. Patient slipped into a coma, death occurred after 10 days of the disease.

[Make a diagnosis](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%bf%d0%be%d1%81%d1%82%d0%b0%d0%b2%d0%b8%d1%82%d1%8c%20%d0%b4%d0%b8%d0%b0%d0%b3%d0%bd%d0%be%d0%b7&translation=make%20a%20diagnosis&srcLang=ru&destLang=en).

Case 2

A soldier was at the epicenter of a nuclear explosion. 30 minutes after the explosion he had a general weakness, dizziness, nausea, repeated vomiting. He was taken to a hospital. He was in the state of moderate severity, torpid, with deferred reaction, pulse was 100 beats / min, blood pressure - 110/60 mm Hg. Art, the body temperature of 38,2°С.

On the 15th day after irradiation patient's condition deteriorated. He had a weakness, chills, bleeding gums, bleeding in the skin, cough with discharge of a moderate amount of purulent sputum, shortness of breath, chest pain, aggravated by deep breathing and coughing, diarrhea, face hyperemic. He was in the state of moderate severity, torpid, with deferred reaction. Pulse was 120 beats / min, rhythmic, weak filling. Heart sounds were muffled. Blood pressure 100/60 mm Hg. Art. The respiratory rate per minute 24. Breathing was hard with wet small- and medium bubbling rale. The abdomen was soft, painful in the course of the colon. The body temperature of 39,8 ° C. In a blood test: erythrocytes 3,5 × 1012 / L 100 g Hb / l, reticulocytes single smear, leukocytes 0,5 × 109 / L Lymphocytes 0,2 × 109 / L Platelets 20 × 109 / l ESR 58 mm / hr. Myelogram: bone marrow depletion, reducing the number of proliferating erythroblasts 30%. X-rays of the chest: increased lung marking. Infiltration in the projection of the lower lobe on both sides.

Make the diagnosis.

**Test tasks**

1. **The atoms of the same element having different** [**atomic mass**](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%b0%d1%82%d0%be%d0%bc%d0%bd%d0%b0%d1%8f%20%d0%bc%d0%b0%d1%81%d1%81%d0%b0&translation=atomic%20mass&srcLang=ru&destLang=en)**, are:**

1. radionuclides
2. Isotopes
3. nuclides

2. **The time required for the activity of a radionuclide to decrease by decay to half of its initial value, is called:**

1. half-life
2. activity
3. radioactivity

3. **The gas produced by the decay of radium-226, which seeps continuously from bedrock and accumulate in poorly ventilated houses is called:**

1. radon
2. potassium
3. uranium

4. **The threshold effects - immediate somatic effects occurring in hours, days, months after exposure that depend on radiation dose are called:**

1. Deterministic
2. Stochastic

5.**Complete the following sentence:**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a type of energy released by atoms that travels in the form of electromagnetic waves (gamma or X-rays) or particles (neutrons, beta or alpha).

6. **The effects which present within 24 hours of exposure to high amounts of ionizing radiation are called:**

1. acute radiation syndrome
2. radiation induced cancer
3. genetic effect
4. chronic radiation syndrome

7. **Syndrome follows absorbed doses of 6–30 Gy (600–3000 rad) and includes such symptoms as nausea, vomiting, loss of appetite, and abdominal pain follows absorbed doses of 6–30 Gy (600–3000 rad):**

1. Hematopoietic
2. Gastrointestinal
3. Neurovascular

**8.Complete the following sentence:**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the science that studies conditions, types and effects of ionizing radiation on human beings and develops the measures aimed at health protection.

9. **Stochastic (probabilistic) thresholdless effect is:**

1. acute radiation syndrome
2. radiation induced cancer
3. radiation burns
4. chronic radiation syndrome

10. Classically acute radiation syndrome is divided into three main presentations:

1 \_\_\_\_\_\_\_\_\_\_\_\_\_\_

2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_

3 \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Topic 7.** The use of ionizing radiation sources in medicine. Radiation protection during the exploitation of ionizing radiation sources.

**Forms of ongoing monitoring of academic performance:**

- recitation

- solving problem-situational tasks;

- testing

**Assessment materials of the current control of academic performance:**

**Questions and tasks for consideration:**

1. Types of radiation exposure.
2. The use of ionizing radiation sources in medicine.
3. Radiation protection during the exploitation of ionizing radiation sources.
4. Radiation control and medical monitoring.
5. Radioactive wastes.

**Situational tasks on the topic of the practical lesson:**

**Case №1**

[A laboratory assistant](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%bb%d0%b0%d0%b1%d0%be%d1%80%d0%b0%d0%bd%d1%82&translation=laboratory%20assistant&srcLang=ru&destLang=en) is working with ionizing radiation source, activity of the source is 15 mEq Ra,  distance to the source is 2 m. Determine permissible time of working for a week.

**Case №2**

Medical staff is working near the source of radiation at a distance of 1 m during 36 hours per week. Determine the maximum activity of the source for working.

**Case №3**

[A laboratory assistant](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%bb%d0%b0%d0%b1%d0%be%d1%80%d0%b0%d0%bd%d1%82&translation=laboratory%20assistant&srcLang=ru&destLang=en) is working in radiology department with radium preparations (activity is 3 mEq Ra) for 5 hours every day, except Saturday and Sunday. Determine distance from the source he should work.

**Test tasks**

1**. Procedures, when radiation passes through the body to form pictures on film or on a computer or television screen, which are viewed by a radiologist, are:**

1. Nuclear medicine procedures
2. X-ray procedures
3. Radiation therapy

2**. Radiation exposure can be managed by a combination of these factors:**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_
4. \_\_\_\_\_\_\_\_\_\_\_\_\_

3. **The physical quantity of absorbed dose, that takes into account the biological effectiveness of the radiation, which is dependent on the radiation type and energy, is called:**

1. Absorbed dose
2. Equivalent dose
3. Effective dose

4**. A type of external radiation therapy, that uses special equipment or a linac to pose the patient and precisely give 1-5 large doses of radiation to the tumor, is called:**

1. Radiosurgery
2. X-ray procedures
3. Radiation therapy

5.**Complete the following sentence:**

Below there are a series of examples of \_\_\_\_\_\_\_\_\_\_\_ exposure.

-The exposure caused by potassium-40 present within a normal person.

-The exposure to the ingestion of a soluble radioactive substance, such as Sr-89 in cows' milk.

-A person who is being treated for cancer by means of a radiopharmaceutical where a radioisotope is used as a drug.

6. **The use of high-energy radiation from x-rays, gamma rays, neutrons, protons, and other sources to kill cancer cells and reduce tumors, is called:**

1. Radiosurgery
2. In x-ray procedures
3. Radiation therapy

7**. Radiation protection groups:**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8. **Type of exposure, when the radioactive material enters the organism, and the radioactive atoms become incorporated into the organism, is called:**

1. Internal exposure
2. External exposure

9. **The SI unit for effective dose is:**

1. gray (Gy)
2. sievert (Sv)
3. becquerel (Bq)

10**. Complete the following sentence:**

Examples of \_\_\_\_\_\_\_\_\_\_\_\_\_\_ exposure include:

-A person who places a sealed radioactive source in his pocket

-A space traveller who is irradiated by cosmic rays

-A person who is treated for cancer by either teletherapy.

**Topic 8.** Hygienic requirements for public nutrition

**Forms of ongoing monitoring of academic performance:**

- recitation

- practical task completion;

- testing

**Assessment materials of the current control of academic performance:**

**Questions and tasks for consideration:**

1. Basics of nutrition.

2. Requirements for a balanced diet. Quantitative characteristic of a diet (caloric intake).

3. Food standards for people of various ages and professions.

4. Qualitative characteristics and a diet balance.

5. Dietary regime.

6. Digestibility and harmlessness of nutrients, (compliance with health regulations in the manufacture, transport and cooking of food).

7. Food habits of the population in different climates.

**Typical practical tasks for testing skills:**

1. Determining and tabulating human energy expenditure using time-keeping data
2. Determining basal metabolic rate.
3. Determining Total energy expenditure for 24 hrs.

**- Practical task completion** (independent work of the student).

**Task 1**

Determining and tabulating human energy expenditure using time-keeping data according to the following algorithm:

- Note the duration of the various activities carried out for a period of **24 hrs**;

- Calculate the energy consumption for particular activities;

- Calculate the total energy consumption for all activities carried out within **24 hrs;**

- Calculate energy consumption due to specific dynamic action of food (**10-15%** of the basal metabolic rate);

- Calculate daily energy expenditure (needs).

3. Determine the physiological energy and nutritional requirements of a student using the "Standard physiological requirements for energy and nutrients for different groups in the Russian Federation." (Guidelines. 2.3.1.2432-08 MR).

**Plan of students’ independent activities**

1. Calculate the daily energy expenditures of a student carrying out various activities and fill in the table №1. Use Table № 2.

 Table 1

**Time activity and loss of energy (kcal)**

|  |  |  |  |
| --- | --- | --- | --- |
| Type of physical activity | Energy losses (kg/h) | Duration of the activity (h) | The amount of energy required for physical activity |
| Example: Sleeping | 0.9 | 8 | 0.9\*8\*55 (b.w)=396 |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Total |  | 24 hour – 1 day | Example: 1700 kcal |

Table 2

**Hourly energy expenditure body (taking into account basal metabolism) on different activity (per 1 kg of body weight)**

|  |  |
| --- | --- |
| Activity | Energy Consumed |
| Sleeping | 0.9 kcal |
| Dressing & washing | 2 kcal |
| Having a meal | 1.4 kcal |
| Doing morning exercises | 4 kcal |
| Walking to work | 4 kcal |
| Making notes of lectures (sitting) | 1.5 kcal |
| Having practical classes in a laboratory room (standing) | 2.4 kcal |
| Studying | 1.4 kcal |
| Reading (leaning against the desk) | 1.3 kcal |
| Reading aloud (sitting) | 1.5 kcal |
| Slow walking | 2.7 kcal |
| Sewing & knitting | 1.4 kcal |
| Washing dishes | 1.4 kcal |
| Ironing | 1.9 kcal |
| Laundering, sweeping the floor | 3.4 kcal |
| Standing | 1.6 kcal |
| Cleaning the shoes | 2.4 kcal |
| Cleaning the carpet | 3-4.8 kcal |
| Playing musical instruments | 2.2 kcal |
| Driving a car | 2.4 kcal |
| Driving a bicycle | 9.0 kcal |
| Playing volleyball | 3.0 kcal |
| Playing tennis | 6.1 kcal |
| Playing football | 8.5 kcal |
| Running at a speed of 8km/h | 8.1 kcal |
| Swimming | 7.1 kcal |
| Skating | 10.0 kcal |

2. Calculate basal metabolic rate (kcal).

Basal metabolism is the sum of the numbers A and B in the tables №3, 4.

 Table 3

**Number “A” with different body mass**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Body mass, kgs** | **A -Male** | **A-Female** | **Body mass, kgs** | **A-Male** | **A-Female** |
| 3 | 107 | 683 | 35 | 548 | 990 |
| 4 | 121 | 693 | 40 | 630 | 1047 |
| 5 | 135 | 702 | 45 | 685 | 1085 |
| 6 | 148 | 712 | 50 | 754 | 1133 |
| 7 | 162 | 721 | 55 | 823 | 1181 |
| 8 | 176 | 731 | 60 | 892 | 1229 |
| 9 | 190 | 741 | 65 | 960 | 1277 |
| 10 | 203 | 751 | 70 | 1029 | 1325 |
| 15 | 272 | 798 | 75 | 1088 | 1372 |
| 20 | 341 | 846 | 80 | 1167 | 1420 |
| 25 | 410 | 894 | 85 | 1235 | 1498 |
| 30 | 479 | 942 | 90 | 1304 | 1516 |

Table 4

**Number "B" values depending different on the age and growth**

|  |  |
| --- | --- |
| height | Age, |
| 1 | 3 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 50 | 60 |
| Male |
| 40 | 40 |  |  |  |  |  |  |  |  |  |  |  |
| 50 | 60 |  |  |  |  |  |  |  |  |  |  |  |
| 60 | 160 | 95 | 40 |  |  |  |  |  |  |  |  |  |
| 70 | 260 | 195 | 130 |  |  |  |  |  |  |  |  |  |
| 80 | 360 | 285 | 230 | 95 |  |  |  |  |  |  |  |  |
| 100 | 560 | 495 | 430 | 180 |  |  |  |  |  |  |  |  |
| 110 | 595 | 530 | 475 | 280 |  |  |  |  |  |  |  |  |
| 120 |  | 695 | 630 | 600 | 380 |  |  |  |  |  |  |  |
| 130 |  |  | 730 | 725 | 480 |  |  |  |  |  |  |  |
| 140 |  |  | 830 | 835 | 580 | 543 |  |  |  |  |  |  |
| 150 |  |  |  | 958 | 680 | 618 | 582 | 514 | 480 | 413 | 345 |  |
| 160 |  |  |  | 1040 | 780 | 684 | 632 | 598 | 564 | 530 | 463 | 395 |
| 165 |  |  |  | 1095 | 815 | 714 | 657 | 623 | 589 | 555 | 488 | 420 |
| 170 |  |  |  | 1150 | 850 | 744 | 682 | 648 | 614 | 580 | 513 | 445 |
| 175 |  |  |  |  | 875 | 774 | 707 | 673 | 639 | 605 | 638 | 470 |
| 180 |  |  |  | 900 | 804 | 732 | 698 | 664 | 664 | 630 | 563 | 495 |
| Female |
| 40 | 344 | 234 | 194 |  |  |  |  |  |  |  |  |  |
| 50 | 305 | 194 | 153 |  |  |  |  |  |  |  |  |  |
| 60 | 264 | 154 | 114 |  |  |  |  |  |  |  |  |  |
| 70 | 224 | 114 | 74 |  |  |  |  |  |  |  |  |  |
| 80 | 184 | 74 | 34 | 54 |  |  |  |  |  |  |  |  |
| 100 | 104 | 16 | 40 | 38 | 5 |  |  |  |  |  |  |  |
| 110 |  | 46 | 80 | 88 | 45 |  |  |  |  |  |  |  |
| 120 |  | 86 | 126 | 133 | 85 |  |  |  |  |  |  |  |
| 130 |  |  | 166 | 177 | 125 |  |  |  |  |  |  |  |
| 140 |  |  | 206 | 221 | 165 | 150 |  |  |  |  |  |  |
| 150 |  |  |  | 259 | 204 | 180 | 161 | 138 | 113 | 90 | 44 |  |
| 160 |  |  |  | 298 | 242 | 209 | 178 | 155 | 132 | 109 | 62 |  |
| 165 |  |  |  | 315 | 260 | 222 | 189 | 164 | 142 | 119 | 71 |  |
| 170 |  |  |  |  | 278 | 234 | 198 | 175 | 151 | 128 | 81 |  |
| 175 |  |  |  |  | 296 | 247 | 207 | 184 | 160 | 137 | 90 |  |
| 180 |  |  |  |  | 313 | 259 | 216 | 193 | 169 | 146 | 99 |  |

Body mass\_\_\_\_\_\_\_\_\_kgs

Total energy expenditure for 24 hrs\_\_\_\_\_\_\_\_\_kcal

Energy loses due to specific dynamic action of food (**10-15%** of the basal metabolism (the sum of the numbers A and B are found in the tables №3, 4)) **Esda** \_\_\_\_\_\_\_kcal

**Result task 1:**

Daily energy expenditure (the sum of all kinds of energy expenditure: (**Eph.a + E sda**)\_\_\_\_kcal

**Test tasks**

1. When recommending physiological nutritional standards to the population -------------- is taken as a basis.

 a). basal metabolism

 b). the nature of work

 c). specific dynamic action of food

 d). features of metabolic processes

 f). health status

2. The number of occupational groups, for which nutritional standards are developed\_\_\_\_\_\_\_\_\_

a). 11 groups

 b). 5 groups

c).3 groups

d). 15 groups

f). 9 groups

 3. Criterion of a dietary regime\_\_\_\_\_\_\_\_\_\_\_\_

 a). balance

 b). granularity within days

 c). rationality

 d). harmlessness

f). digestibility

4 Workers engaged in mental activity\_\_\_\_\_\_\_\_\_\_\_\_

 a). group 1

 b). group 2

c). group 3

d). group 4

5. In the cold climate zone basal metabolic rate\_\_\_\_\_\_\_\_\_\_\_

a) decreases

b) remains unchanged

c) increases

d) changes

6. The integral quantitative measure for the evaluation of food consumed is \_\_\_\_\_\_\_\_.

a) balance;

b) caloric;

c) usefulness

d) digestibility.

7 An optimal ratio of nutrients and biologically active substances that can manifest in the body the maximum of its useful biological action is \_\_\_\_\_\_\_

a) caloric;

b) balance;

c) digestibility;

d) usefulness..

8. Which occupational group includes people engaged in especially hard physical labor\_\_\_\_\_\_\_\_\_\_\_

 a). group 1

 b). group 2

c). group 3

 d). group 4

9. The main energy expenditures of the body are made up of \_\_\_\_\_\_\_\_:

a) physical and mental labor;

b) the main exchange, specific dynamic action of food, work;

c) static and dynamic work;

d) the basal metabolic rate and energy expenditure to perform professional activities

10. In hot climates increases demand in \_\_\_\_\_\_\_\_\_--

a) fats

b) carbohydrates

c) energy

g) vitamins

**Topic 9.** Hygienic value of the nutrients in the human diet. Alimentary diseases.

**Forms of ongoing monitoring of academic performance:**

- recitation

- practical task completion;

- testing

**Assessment materials of the current control of academic performance:**

**Questions and tasks for consideration:**

1. Clinical significance of carbohydrate metabolism. The main functions of carbohydrates. The content in food stuffs.

2. Clinical significance of lipid metabolism. The main functions of fat. The content in food stuffs.

3. Clinical significance of protein metabolism. The main function of proteins. The content in foodstuffs.

4. Clinical significance of macronutrients and micronutrients. The main functions and content in food stuffs.

5. Alimentary diseases. Classification, etiology, prevention.

**Typical practical tasks for testing skills:**

1 composition a student's daily meal menu (by meal)

2. Determining the energy value (kcal) and the qualitative composition (proteins, fats, carbohydrates, g) of food products

3. Determining Total energy expenditure for 24 hrs.

**Practical skills development** (independent work of the student).

**Task 1**

Make up a menu of the daily dietary of the student (according to food intake) (Table 2).

Determine he energy value (kcal) and qualitative composition (proteins, fats, carbohydrates, g) of food products at particular meals and in general during the day using the table 1

Table 1

**Menu (per serving) (g)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Foods | Weight portion (g) | Protein(g) | Fat(g) | Carbo-hydrate (g) | Energy value|Ccal |
| Meat broth with vermicelli | 500 | 3,5 | 0,39 | 24,48 | 111 |
| Russian cabbage soup with meat broth | 500 | 4,15 | 6,2 | 19,4 | 150 |
| Meat cutlets fried in vegetable oil | 110 | 18,2 | 15,83 | 13,79 | 270 |
| Meat lean cutlets steam | 100 | 17,34 | 5,75 | 7,78 | 152 |
| Beef cooked lean | 50 | 18,6 | 17,25  | 8,43 | 263 |
| Boiled chicken | 85 | 10,4 | 4,4 | 0,3 | 82 |
| A boiled fish | 110 | 13.1 | 0,45 | - | 56 |
| A fried fish | 110 | 13.6 | 10,4 | 3.7 | 163 |
| Egg | 48 | 6,09 | 5,52 | 0,33 | 75 |
| Omelet (2 eggs) | 110 | 8.05 | 3.57 | 3,13 | 76 |
| Cottage cheese with sour cream | 130 | 17,26 | 13 | 11.92 | 233 |
| Milk | 180 | 5,04 | 5,76 | 7,3 | 101 |
| Kefir | 180 | 5,04 | 5,76 | 7,3 | 101 |
| Cheese | 30 | 8,04 | 8,19 | - | 105 |
| Porridge semolina  | 250 | 7.35 | 7.6 | 39,05 | 254 |
| Boiled rice  | 200 | 6.33 | 7.62 | 48,38 | 287 |
| Boiled buckwheat  | 180 | 12.6 | 7.32 | 49.2 | 313 |
| Boiled vermicelli  | 185 | 6.45 | 4,9 | 44.56 | 243 |
| Boiled millet with pumpkin | 270 | 9,68 | 8,77 | 50 | 317 |
| Stewed beet  | 160 | 3.82 | 12.02 | 23.03 | 215 |
| Boiled potato with vegetable oil | 210 | 4,82 | 4.32 | 40 | 215 |
| Mashed potato  | 240 | 4,8 | 6.15 | 40.81 | 237 |
| Stewed cabbage  | 200 | 4.25 | 10 | 13.64 | 161 |
| Stewed vegetables | 250 | 5.41 | 7.25 | 30 | 206 |
| Salad with sauerkraut | 110 | 1 | 10 | 3 | 105 |
| Salad with boiled cooked vegetables and vegetable oil | 220 | 4 | 10 | 21.19 | 191 |
| Stewed fruits | 200 | 0,17 | - | 24 | 100 |
| Stewed dried fruits  | 200 | 0,1 | - | 40 | 200 |
| Apple juice  | 100 | 0.5 | - | 12 | 48 |
| Tea with sugar | 200 | 0,05 | - | 15 | 56 |
| Coffee with sugar and milk | 200 | 3.21 | 3,63 | 20 | 110 |

Describe your daily ration

Table 2

**Menu outline of the daily ration of a student**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Food products constituting the portion | Mass (g) | Proteins (g**)** | Fats (g) | Carbohydrates (g) | Energy value (kcal) |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| *Total*: |  |  |  |  |  |

**Standard physiological requirements for proteins, fats, carbohydrates and energy**

Table 3

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Group | Age | Energy | Protein | Animal protein | Fat | Carbohydrate |
| Male |
| 1 | 18-2930-3940-59 | 245020002100 | 726865 | 403736 | 817770 | 358335303 |
| 2 | 18-2930-3940-59 | 280026502500 | 807772 | 444240 | 938883 | 411387366 |
| Female |
| 1 | 18-2930-3940-59 | 200019501800 | 615953 | 343332 | 676360 | 289274257 |
| 2 | 18-2930-3940-59 | 220021502100 | 666563 | 363635 | 737270 | 318311305 |

**Task 2**

1. Compare **your own results calculated** daily energy expenditures and consumed energy, proteins, fats, carbohydrates content in your diet (**Task 1 (topic 1Table 1) and Task 1 (Table 2 topic 2)** ) to **standard physiological requirements** for proteins, fats, carbohydrates and energy for your sex and age (Table 3).
2. Calculate balance between your own calculated for proteins, fats, carbohydrates if amount protein to 1.

Compare the results with your own calculated with **normal for mental activity** (1:0,8:3,8)

**Test tasks**

1. Polyunsaturated fatty acids are:

1. linoleic, linolenic, arachidonic acid

2. stearic acid, palmitic acid

3. caprylic, lauric acid, oleic acid

4. folic, pantothenic, lipoic acid.

2. The diseases of protein-energy malnutrition include:

1. alimentary dystrophy, obesity, osteoporosis;

2. iron deficiency anemia, alimentary dystrophy, kwashiorkor;

3. nutritional marasmus, kwashiorkor, alimentary dystrophy;

4. diabetes, nutritional marasmus, kwashiorkor.

3. Proteins in to containing the essential amino acids, contain:

1. in products of plant origin

2. in products of animal origin

3. in drinking water;

4. In the alcoholic beverages.

4. Сomplex carbohydrates include:

1. sucrose, lactose and maltose;

2. glucose, fructose and galactose.

3. starch, pectins and cellulose

5. Foodstuffs that are sources of iodine:

1. red meat, poultry meat;

2. milk and milk products;

3. Vegetables, fruits, nuts, grain products;

4. fish, shellfish, algae.

6. The content of saturated fat and trans fat should be of total calories:

1. less than 5%;

2. less than 10%;

3. less than 15%;

4. less than 25%.

7. Diseases in which development nutrition factor has a major role:

1. cardiovascular disease, diabetes, cancer,

2. diseases of the digestive system, liver and kidneys, musculoskeletal system;

3. hereditary diseases and malformations.

8. Which amino acids are essential amino acids:

1. histidine, isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan and valine;

2. arginine, alanine, aspartic acid, asparagine, glutamic acid, glutamine, glycine, proline, serine.

9. Have a high glycemic index:

1. legumes and cereals;

2. pastries, white bread;

3. dairy products;

4. fruit and vegetables.

10. Are the main pool of calcium in the body:

1. muscle;

2. liver and kidneys;

3. brain;

4. The blood and lymph

5. bones and teeth.

**Topic 10.** The significance of vitamins in human nutrition

**Forms of ongoing monitoring of academic performance:**

- recitation

- practical task completion;

- testing

**Assessment materials of the current control of academic performance:**

**Questions and tasks for consideration:**

1 Vitamins: definition, classification and significance for human health

2. Biological role, deficiency manifests and sources of water-soluble vitamins B1 -B5 in the diet.

3. Biological role, deficiency manifests and sources of water-soluble vitamins C, B6, B12 and folic acid in the diet.

4. Biological role, deficiency manifests and sources of dietary fat-soluble vitamins.

5. Biological role, deficiency manifests and sources of dietary Vitamin-like substances.

6. Clinical forms of vitamins deficiency.

7. Causes of hypovitaminoses.

8. Ways to maintain and improve the vitamin value of a diet, prevention of hypovitaminoses

**Typical practical tasks for testing skills:**

1. Determine the qualitative composition (vitamins contains, g) of food products 2. Compare the your own calculated results to normal

**Practical skills development** (independent work of the student).

**Task 1**

1. **Make up a menu of the daily dietary of the student** (according to food intake) Table1

 Determine the qualitative composition (vitamins contains, g) of food products in general during the day using the table 2

Table 1

**Menu outline of the daily ration of a student**

|  |  |
| --- | --- |
| Food products constituting the portion | **Vitamins, mg** |
| carotene | A | B1 | B2 | **C** |
| Cream 10% and so on |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| *Total*: |  |  |  |  |  |

Table 2

**The content of vitamins and energy content of the edible portions of some food products (at 100 g)**

|  |  |  |
| --- | --- | --- |
| Product Name | Vitamins, mg | Energykcal |
| carotene | A | B1 | B2 | **C** |
| **cereal products** |
| Wheat flour 1st grade | 0 |  | 0,25 | 0,12 | 0 | 329 |
| Semolina | 0 |  | 0,14 | 0,07 | 0 | 326 |
| Buck wheat un ground | 0 |  | 0,53 | 0,2 | 0 | 229 |
| Rice | 0 |  | 0,08 | 0,04 | 0 | 323 |
| Millet | 0,15 |  | 0,62 | 0,04 | 0 | 334 |
| Oatmeal | 0 |  | 0,49 | 0,11 | 0 | 345 |
| pearl | 0 |  | 0,12 | 0,06 | 0 | 324 |
| barley | 0 |  | 0,27 | 0,08 | 0 | 322 |
| hulled peas | 0,05 |  | 0,9 | 0,18 | 0 | 323 |
| Pasta |  |  | 0,25 | 0,12 |  | 333 |
| **Bread and bakery products** |
| Rye bread from flour peeled |  |  | 0,11 | 0,08 |  | 199 |
| White bread from flour |  |  | 0,11 | 0,06 |  | 233 |
| Baking common |  |  | 0,18 | 0,09 |  | 288 |
| Confectionery |
| Sugar | 0 | 0 | 0 | 0 | 0 | 374 |
| mead |  |  | 0,01 | 0,03 | 2 | 308 |
| Caramel |  |  |  |  |  | 362 |
| Chocolate | 0 | 0 | 0,05 | 0,26 | 0 | 547 |
| Candy fondant | 0 | 0 | 0 | 0,03 | 0 | 364 |
| jujube |  |  |  |  |  | 296 |
| Biscuit | 0 | 0 | 0,13 | 0,09 | 0 | 406 |
| Gingerbread | 0 | 0 | 0,08 | 0,04 | 0 | 336 |
| Cake with a cream puff | 0,14 | 0,15 | 0,04 | 0,05 | 0 | 544 |
| **Dairy produce** |
| pasteurized milk | 0,01 | 0,02 | 0,03 | 0,13 | 1 | 58 |
| Cream 10% fat | 0,03 | 0,06 | 0,03 | 0,1 | 0,5 | 118 |
| Sour cream20% fat | 0,06 | 0,15 | 0,03 | 0,11 | 0,3 | 206 |
| Curds - fat | 0,06 | 0,1 | 0,05 | 0,3 | 0,5 | 226 |
| - bold | 0,03 | 0,05 | 0,04 | 0,27 | 0,5 | 156 |
| low-fat | subpg | subpg | 0,04 | 25 | 0,5 | 86 |
| Curd and curd weight | 0,06 | 0,1 | 0,03 | 0,3 | 0,5 | 340 |
| fat yogurt | 0,01 | 0,02 | 0,03 | 0,17 | 0,7 | 59 |
| low-fat | subpg | subpg | 0,04 | 0,17 | 0,7 | 30 |
| Yogurt 1.5% | subpg | 0.01 | 0.03 | 0.015 | 0.6 | 70 |
| Condensed milk with sugar | 0,02 | 0,03 | 0,06 | 0,2 | 1 | 315 |
| Dutch cheese round | 0,16 | 0,21 | 0,21 | 0,38 | 2,4 | 380 |
| Processed cheese (40% fat) |  |  | 0,01 | 0,35 |  | 270 |
| Ice Cream | 0,03 | 0,04 | 0,03 | 0,2 | 0,6 | 178 |
| Fats and fat products |
| Butter | 0,34 | 0,5 | subpg | 0,01 | 0,6 | 748 |
| Margarine milk | 0,4 |  | subpg | 0,01 | subpg | 746 |
| Oil sunflower |  |  |  |  |  | 899 |
| mayo |  |  |  |  |  | 627 |
| **Vegetables, fruits, berries** |
| Eggplant | 0,02 |  | 0,04 | 0,05 | 5 | 24 |
| courgettes | 0,03 |  | 0,03 | 0,03 | 15 | 27 |
| Cabbage | 0,02 |  | 0,06 | 0,05 | 50 | 28 |
| Potatoes | 0,02 |  | 0,12 | 0,05 | 20 | 83 |
| Green onion | 2 |  | 0,02 | 0,1 | 30 | 22 |
| Bulb onions | subgg |  | 0,05 | 0,02 | 10 | 43 |
| Carrot | 9 |  | 0,06 | 0,07 | 5 | 33 |
| Cucumbers | 0,06 |  | 0,03 | 0,04 | 10 | 15 |
| radishes | subpg |  | 0,01 | 0,04 | 25 | 20 |
| Salad | 1,75 |  | 0,03 | 0,08 | 15 | 14 |
| beetroot | 0,01 |  | 0,02 | 0,04 | 10 | 48 |
| Tomatoes | 1,2 |  | 0,06 | 0,04 | 25 | 19 |
| Watermelon | 0,1 |  | 0,04 | 0,03 | 7 | 38 |
| Melon | 0,4 |  | 0,04 | 0,04 | 20 | 39 |
| Pumpkin | 1,5 |  | 0,05 | 0,03 | 8 | 29 |
| Apricot | 1,6 |  | 0,03 | 0,06 | 10 | 46 |
| cherry | 0,1 |  | 0,03 | 0,03 | 15 | 49 |
| Garnet |  |  | 0,04 | 0,01 | 4 | 52 |
| pears | 0,01 |  | 0,02 | 0,03 | 5 | 42 |
| Peach | 0,5 |  | 0,04 | 0,01 | 10 | 44 |
| Plum | 0,1 |  | 0,06 | 0,04 | 10 | 43 |
| Apples | 0,3 |  | 0,01 | 0,03 | 13 | 46 |
| Oranges | 0,05 |  | 0,04 | 0,03 | 60 | 38 |
| Lemons | 0,01 |  | 0,04 | 0,02 | 40 | 31 |
| Grapes | subgg |  | 0,05 | 0,02 | 6 | 69 |
| Strawberry | 0,03 |  | 0,03 | 0,05 | 60 | 41 |
| Cranberry | subgg |  | 0,02 | 0,02 | 15 | 28 |
| gooseberry | 0,2 |  | 0,01 | 0,02 | 30 | 44 |
| Raspberries | 0,2 |  | 0,02 | 0,05 | 25 | 41 |
| Red currants | 0,2 |  | 0,01 | 0,03 | 25 | 38 |
| Blackcurrant | 0,1 |  | 0,02 | 0,02 | 200 | 40 |
| Dried apricots with stones | 3,5 |  | 0,1 | 0,2 | 4 | 278 |
| raisin | subgg |  | 0,15 | 0,08 | subgg | 276 |
| prune | 0,06 |  | 0,1 | 0,2 | 3 | 264 |
| tomato juice | 0,5 |  | 0,01 | 0,03 | 10 | 18 |
| Apple juice | subgg |  | 0,01 | 0,01 | 2 | 47 |
| The juice of the grape | 0 |  | 0,02 | 0,01 | 2 | 72 |
| Green Peas (cons) | 0,3 |  | 0,11 | 0,05 | 10 | 41 |
| Peppers stuffed with vegetables (cons) | 4 |  | 0,05 | 0,1 | 20 | 109 |
| Caviar of courgettes (cons) | 0,92 |  | 0,02 | 0,05 | 7 | 122 |
| Apple Compote (cons) | subgg |  | 0,01 | 0,02 | 1,8 | 92 |
| White mushrooms, fresh |  |  | 0,02 | 0,3 | 30 | 25 |
| Meat and meat products |
| Mutton |  | 0 | 0,08 | 0,14 | subgg | 203 |
| Beef |  | subgg | 0,06 | 0,15 | subgg | 187 |
| Rabbit meat |  | 0 | 0,08 | 0,1 |  | 199 |
| pig |  | 0 | 0,52 | 0,14 | subgg | 355 |
| Veal |  | subgg | 0,14 | 0,23 | subgg | 90 |
| beef liver |  | 0,01 | 0,12 | 0,19 | subgg | 124 |
| semi-smoked sausage |  |  | 0,19 | 0,2 |  | 376 |
| smoked Capital |  |  | 0,35 | 0,25 |  | 487 |
| pork sausages |  |  | 0,25 | 0,12 |  | 332 |
| Sausages dairy |  |  |  |  |  | 227 |
| Stewed beef (canned) |  |  | 0,02 | 0,19 |  | 232 |
| Pork stew (canned) |  |  | 0,14 | 0,18 |  | 349 |
| Poultry eggs |
| Chickens |  | 0,07 | 0,07 | 0,15 |  | 241 |
| Eggs |  | 0,35 | 0,07 | 0,44 |  | 157 |
| Fish and fish products |
| Flounder |  |  | 0,06 | 0,11 |  | 90 |
| Carp |  | 0,02 | 0,14 | 0,13 | 0 | 96 |
| Bream |  | 0,03 | 0,12 | 0,1 |  | 105 |
| sea perch |  |  | 0,11 | 0,12 | 0 | 117 |
| Halibut black |  |  |  | 0,15 |  | 196 |
| Sardines |  | 0,09 | 0,01 | 0,1 |  | 166 |
| Atlantic mackerel |  | subgg | 0,12 | 0,36 | 0 | 153 |
| Herring srednesolenaya |  |  |  |  |  | 143 |
| Cod Liver (canned) |  | 3,3 | 0,02 | 0,32 |  | 613 |
| Sudak |  | subpg | 0,08 | 0,11 | 3 | 83 |
| codfish |  | 0,01 | 0,09 | 0,16 | 0 | 75 |
| hake |  |  | 0,12 | 0,1 | 3,7 | 86 |
| Pike |  |  | 0,11 | 0,14 | 1,6 | 82 |
| Natural Pink salmon (canned) |  |  | 0,03 | 0,08 |  | 138 |
| Atlantic sardines (canned) |  |  | 0,02 | 0,1 |  | 249 |
| Sprat (canned) |  |  | 0,05 | 0,12 |  | 364 |

**Task 2** Compare the your own calculated results to normal (Table 3)

Table 3

Physiological daily requirement in vitamins (normal).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Group | Age | C mg | A micg | B1 mg | B2 mg |
| 1 | 2 | 3 | 4 | 7 | 8 |
| Male |
| I | 18-59 | 70,0 | 1000,0 | 1,2 | 1,5 |
| Female |
| I | 18-59 | 70,0 | 800,0 | 1,1 | 1,3 |

**Test tasks**

1. The primary source of vitamin C in nutrition is

1. sauerkraut

2. carrots

3. liver

4. rye bread

2. Pellagra, manifested dermatitis, dementia and diarrhea, are characteristic of lack of …

1. А
2. РР
3. С
4. В12

3. To development of polyneuritis leads lack of vitamins

1. В1
2. В2
3. РР
4. А

4. The body's need for vitamin D is met by

1. receipts from the plant-based diet and endogenous synthesis of intestinal microflora

2. synthesis in the skin by ultraviolet radiation and the flow of products from animals

3. synthesis in the skin by ultraviolet irradiation and the endogenous synthesis

5.Iron exchange in the body is closely connected with vitamin

1. В6
2. С
3. РР
4. В1

6. Synthesis beriberi affects digestibility vitamin

1. В1
2. В12
3. РР
4. А

7. Vitamin B12 transport occurs efficiently in the presence of

1. sodium

2. calcium

3. iron

4. potassium

8. To development of xerophthalmia leads vitamin ……..deficiency

1. E

2. PP

3. A

4. B1

9. Ciliary injection, angular stomatitis and cheilitisare typical for Hypovitaminosis

* 1. В1
	2. В6
	3. В2
	4. В12

10.Signs of vitamin B1 (thiamine) lack

1. night blindness, diarrhea

2. neurosis, peripheral polyneuritis

3. dermatitis, diarrhea

**Topic 11.** Hygienic evaluation of the quality of food stuffs.

**Forms of ongoing monitoring of academic performance:**

- recitation

- practical task completion;

- testing

**Assessment materials of the current control of academic performance:**

**Questions and tasks for consideration:**

1. The significance of food quality. Indices of the safe use of food
2. Degrees of quality of food items. The food adulteration.
3. Hygienic requirements for the quality of meat.
4. Hygienic requirements for the quality of milk.
5. Determining organoleptic, physical of milk and tests for adulteration of milk
6. Hygienic requirements for the quality of eggs.
7. Hygienic requirements for the quality of fish and tinned meat and fish

**Typical practical tasks for testing skills:**

Lab work investigating and estimating the quality of milk and bread samples.

1). Organoleptic and physicochemical examination of milk:

2). Organoleptic and physicochemical examination of bread sample

3) Sanitary & hygienic estimation of eggs

**- Practical task completion** (independent work of the student).

Students’ independent classroom activities

**Determining physical & chemical properties of milk.**

1. Determining the specific weight of milk.

Specific weight of milk is determined with the help of a lactodensimeter, which has two scales: the lower one for determining specific weight of milk and the upper to measure the temperature. The specific weight of milk can be conventional (Keven´s degree). Each Keven´s degree corresponds to one thousandths of a gram. For example, if the specific weight of milk is 1, 027, the density of milk should be 27 Keven´s degrees.

1. One should pour 150 ml of milk into a glass.
2. The lactodensimeter should be put into the milk to the mark 1.030 so that it does not touch the walls of the glass. The specific weight of milk is determined considering the indicators of the upper level of milk. One should do it within 5 minutes after pouring the milk into the glass. Considering the indicators on the upper scale, one can determine the temperature of milk. If the temperature of milk is over 20 Cº, one should correlate it with the readings of the lactodensimeter and add the difference which is 0.2 Keven´s degree. If the temperature of milk is below 20 Cº, the difference of 0.2 Keven´s degree is subtracted.

2. Revealing the presence of soda.

1). One should pour 5 ml of milk in test tube/

2) Add 4-5 drops of 0.2%-alcoholic solution of rosolic acid

The milk usually becomes crimson-red in the presence of soda. If there is no soda in the milk, it usually turns a yellow-brownish colour

3. Revealing the presence of starch.

1) One should pour 10-15 ml of milk into a test-tube

2) After one should add 1 ml of Lugol´s iodine into the milk.

If the milk becomes blue, it contains some starch.

**Sanitary & hygienic estimation of bread**

**1. Determining organoleptic properties of bread**

One should examine the surface of bread (the outer and lateral crust) and evaluate its colour and shape.

One should press the breadcrumb and evaluate its elasticity and porosity.

One should estimate the taste and smell of bread.

2. Determining the porosity of bread.

 One should cut off a slice of bread 27 cm³ in size with a cylindrical knife.

1. The weight of the slice of bread should be measured.
2. The porosity of bread can be calculated using the following equation:

 (в – а/б) ∙100

 Х= --------------------

 В ,

where: X – porosity of bread, %;

 B – volume of the bread crumb with pores (27 cm³);

 A – weight of the bread crumb;

Б – density of non-porous proportion of the bread.

The relation а/б is the volume of non-porous part of the bread crumb.

Type of bread Density g/cm³

Rye bread & rye-wheat bread 1.21

Rye bread from the flour made of scald milk 1.27

Wheat bread of the second grade 1.26

Wheat bread of the first grade 1.1

The porosity of bread

Type of bread %

Rye bread 45-47

Rye-wheat bread 47-50

Wheat bread of the second grade 54 -55

Wheat bread of the first & highest grade 63-72

**Sanitary & hygienic estimation of eggs**

1. Candling: A fresh egg looks translucent and yellow and is seen floating in white. A rotten egg is opaque but if there is gas, it looks transparent.

2. Floating: A fresh egg sinks in 10 percent saline or water and remains horizontal or vertical and not tilted. A rotten egg floats.

**Test tasks**

1. The color, smell, consistency and appearance that are peculiar to each product are called

1 physical properties,

2. organoleptic properties,

3. chemical properties,

 4. radiological properties

5 parasitic properties

2. Presence soda in milk is identified by reactions with

1. caustic soda

2. sulfuric acid

3. rozolovoy acid

4. Lugol solution

3. To the category " high quality " refers

1. a product having good organoleptic properties with no signs of spoilage

2. a product whose properties are fully compliant with no signs of spoilage and harmful impurities

3. a product that does not contain pathogens, helminths larvae, hazardous chemical impurities

4. If you find one Trichinellain a cut meat its assigned the category

1. " Semi-condemned "

2. "with low nutritional value"

3. "poor quality"

4. " high quality "

5. The principal milk protein is

1. myosin

2. casein

3. globulin

4. lysin

6. Semi-condemned foods is to be

1. Consumed without limitations

2-eaten after a certain treatment

3. destructed

7. Milk density is determinedby

1. butyrometer

2. the formula

3. lactodensimeter

4. The Zhuravleva device

8. Meat of suspect freshness may be used

1. Without limits

2. as Semi-condemned

3. recycleable

9. If egg is fresh, then

1.floats in water

2.settles to the bottom

3.opaque to light

10. Estimate of milk adulteration can be achieved by

1. The determination of specific gravity, the presence of starch and soda

2. Determination of acidity, dry residue and specific gravity

3. Teston reductase, determination of organoleptic properties of milk

**Topic 12**. Food poisoning prevention.

**Forms of ongoing monitoring of academic performance:**

- recitation

- solving problem-situational tasks;

- testing

**Assessment materials of the current control of academic performance:**

**Questions and tasks for consideration:**

1. Classification of food poisonings.

2. Microbial Food Poisonings.

3. Mycotoxicoses.

4. Non-microbial Food Poisonings.

**Situational tasks on the topic of the practical lesson:**

**Task 1**

Mushroom caviar, bought on the market from a private individual, was the cause of severe poisoning 8 people. After 6-10 hours after dinner, which consisted of fried potatoes with mushroom caviar, there was vomiting, quickened pulse, hallucinations emerged with delirium, loss of consciousness in children. On admission to the hospital they were registered in pain throughout the abdomen, anuria, choleriform chair. The next day, the most distinct pain became determined in the right upper quadrant, there yellowness of the sclera and skin. The state of health of patients has deteriorated sharply, one child could not be deduced from the coma.

Answer questions

1. Establish a diagnosis according to the classification of food poisoning

2. What caused this poisoning?

3. Specify the preventive measures.

**Task 2**

Restaurant banquet menu includes pork chops with cheese, rise, fresh vegetable salad, cake with butter cream, tea and coffee. Within 3 hours most of the guests felt bad places: experience nausea, vomiting, slight pain in the epigastric region and diarrhea (1-2 times), in some patients, the temperature rose to 38S0, tachycardia was present, and 2 patients recorded decreased blood pressure . Within 1-3 days, patients felt satisfactory.

Answer questions

1. Establish a diagnosis according to the classification of food poisoning

2. Which of the following foods most likely was the cause of the disease?

1. What is the pathogenic beginning?
2. Specify the preventive measures.

**Task 3**

Several villagers complained of general weakness, burning sensation in the mouth, pain on swallowing. An objective study of all of them found hemorrhagic rash on the trunk and extremities, necrotic angina. The general analysis of blood: anemia, leukopenia, thrombocytopenia.

Later it turned out that in the last few days the bakery for bread flour used in overwintered grain field.

Answer questions

1. Establish a diagnosis according to the classification of food poisoning

2 .What caused this poisoning?

3. What is the pathogenic beginning?

4. Specify the preventive measures.

**Task 4**

During dinner, the family made use of noodle soup with meatballs, fried potatoes, as a cold appetizer marinated mushrooms own production. After 7 hours in children appeared vomiting, abdominal pain, weakness, difficulty swallowing, dilated pupils uneven. Later, the symptoms such as ptosis century, hoarseness, nasal speech. Body temperature remained normal. After 12 watches same symptoms appear in adults. Children were consulted neurologist and hospitalized in the neurological department diagnosed with bulbar form of polio. In adults, the neurologist put a preliminary diagnosis: acute ischemic stroke. After the death of one off the children the correct diagnosis was made, and other family members transferred to the infectious diseases hospital, where he received appropriate treatment, f Establish the diagnosis of the disease in the family hearth

Answer questions

1. Establish a diagnosis according to the classification of food poisoning

2. Which of the following foods most likely was the cause of the disease?

3 .Specify the preventive measures.

**Test tasks**

1.Toxin of epidemie dropsy is:

1.BOAA

2.sanguinarine

3.Akaloid

4. ergot

2. The food poisoning does not include:

1. Botulism;

2. Ergotism;

3. Staphylococcal toxemia;

4. alcohol poisoning.

3. Fuzariotoxicosis caused by:

1. Gram-negative rods;

2. Gram-positive cocci;

3. The microscopic fungi;

4. Virus.

4. In the pathogenesis of food toxicosis (intoxication) the major role belong to:

1. The reproduction of microorganisms in the human body and the secretion of endotoxins;

2. The reproduction of microorganisms in food and production of exotoxins;

3. The reproduction of microorganisms in the body and in food and production of exo- and endotoxins.

5. Botulism affects mainly:

1. Liver;

2. The kidneys;

3. The nervous system;

4. Heart;

5. The digestive system.

6. Lathyrism caused by:

1. some types of [peas](https://www.multitran.ru/c/m.exe?t=6853383_1_2&s1=%E3%EE%F0%EE%F5)
2. gram-positive cocci
3. microscopic fungi
4. virus
5. argemone oil

7. Botulism is a food poisoning:

1. Microbial etiology;

2. The non-microbial etiology;

3. unknown etiology;

4. mycotoxicoses.

8. Throat inflammation and decrease of white blood cells are characteristics of the agent:

1. Aspergillus flavus;

2. Glaviceps purpurea;

3. Escherichia coli;

4. Fusarius sporotrichioides.

9. In the pathogenesis of food toxicoinfections the major role belong to:

1. reproduction of microorganisms in food selection and exotoxins;

2. The reproduction of microorganisms in the human body and the allocation of endotoxins;

3. Propagation of microorganisms in the body and in food selection and exo- and endotoxins

5. At what disease dry gangrene occurs:

10. Poisoning mushrooms;

1. Pesticide poisoning;

2. Staphylococcal toxemia;

3. Ergotism.

**Topic 13:** Hygienic requirements for drinking water quality and water supply systems

**Forms of ongoing monitoring of academic performance:**

- recitation

- solving problem-situational tasks;

- practical task completion;

- testing

**Assessment materials of the current control of academic performance:**

**Questions and tasks for consideration:**

1. The problem of water supply.

2. Physiological and hygienic significance of water.

3. Sources of surface and ground water contamination. Sources of water supply.

4. Diseases associated with salinity or microelement content of water.

5. Hygienic requirements imposed on the drinking water quality.

**Situational tasks on the topic of the practical lesson:**

[EXERCISE](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%b7%d0%b0%d0%b4%d0%b0%d1%87%d0%b0&translation=exercise&srcLang=ru&destLang=en) №1

According to [analysis](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%b0%d0%bd%d0%b0%d0%bb%d0%b8%d0%b7&translation=analysis&srcLang=ru&destLang=en) of drinking tap water samples in Agra: smell - [noticeable](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%b7%d0%b0%d0%bc%d0%b5%d1%82%d0%bd%d1%8b%d0%b9&translation=noticeable&srcLang=ru&destLang=en), taste - [noticeable](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%b7%d0%b0%d0%bc%d0%b5%d1%82%d0%bd%d1%8b%d0%b9&translation=noticeable&srcLang=ru&destLang=en), color – 25 Hazen units, [turbidity](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%bc%d1%83%d1%82%d0%bd%d0%be%d1%81%d1%82%d1%8c&translation=turbidity&srcLang=ru&destLang=en) – 2 NTU, iron content - 3 mg/l, fluoride content - 0.7 mg / l.

Task: Make conclusion on quality of drinking water.

[EXERCISE](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%b7%d0%b0%d0%b4%d0%b0%d1%87%d0%b0&translation=exercise&srcLang=ru&destLang=en) №2

According to [analysis](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%b0%d0%bd%d0%b0%d0%bb%d0%b8%d0%b7&translation=analysis&srcLang=ru&destLang=en) of well water samples in Varanasi [city](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%b3%d0%be%d1%80%d0%be%d0%b4&translation=city&srcLang=ru&destLang=en): smell of water - [noticeable](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%b7%d0%b0%d0%bc%d0%b5%d1%82%d0%bd%d1%8b%d0%b9&translation=noticeable&srcLang=ru&destLang=en), taste - [noticeable](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%b7%d0%b0%d0%bc%d0%b5%d1%82%d0%bd%d1%8b%d0%b9&translation=noticeable&srcLang=ru&destLang=en), color–35 Hazen units, [turbidity](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%bc%d1%83%d1%82%d0%bd%d0%be%d1%81%d1%82%d1%8c&translation=turbidity&srcLang=ru&destLang=en) – 2,5 NTU.

Task: Make conclusion on quality of drinking water.

[EXERCISE](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%b7%d0%b0%d0%b4%d0%b0%d1%87%d0%b0&translation=exercise&srcLang=ru&destLang=en) №3

According to [analysis](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%b0%d0%bd%d0%b0%d0%bb%d0%b8%d0%b7&translation=analysis&srcLang=ru&destLang=en) of well water samples in Mangalore [city](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%b3%d0%be%d1%80%d0%be%d0%b4&translation=city&srcLang=ru&destLang=en): smell of water - agreeable, taste - agreeable, color– 5 Hazen units, [turbidity](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%bc%d1%83%d1%82%d0%bd%d0%be%d1%81%d1%82%d1%8c&translation=turbidity&srcLang=ru&destLang=en) – 1 mg/l, general mineralization -400 mg/l, total hardness – 150 mg/l, sulfates – 200 mg/l, chloride – 220 mg/l.

Task: Make conclusion on quality of drinking water.

[EXERCISE](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%b7%d0%b0%d0%b4%d0%b0%d1%87%d0%b0&translation=exercise&srcLang=ru&destLang=en) №4

According to [analysis](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%b0%d0%bd%d0%b0%d0%bb%d0%b8%d0%b7&translation=analysis&srcLang=ru&destLang=en) of drinking tap water samples in Udaipur: smell - agreeable, taste - [noticeable](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%b7%d0%b0%d0%bc%d0%b5%d1%82%d0%bd%d1%8b%d0%b9&translation=noticeable&srcLang=ru&destLang=en), color – 10 Hazen units, [turbidity](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%bc%d1%83%d1%82%d0%bd%d0%be%d1%81%d1%82%d1%8c&translation=turbidity&srcLang=ru&destLang=en) – 3,5 mg/l, iron content - 5 mg/l, fluoride content - 0.7 mg/l, lead – 0,3 mg/l, arsenic - 0.02 mg/l, selenium - 0.005 mg/l.

Task: Make conclusion on quality of drinking water.

[EXERCISE](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%b7%d0%b0%d0%b4%d0%b0%d1%87%d0%b0&translation=exercise&srcLang=ru&destLang=en) №5

According to [analysis](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%b0%d0%bd%d0%b0%d0%bb%d0%b8%d0%b7&translation=analysis&srcLang=ru&destLang=en) of drinking tap water samples in Lucknow [city](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%b3%d0%be%d1%80%d0%be%d0%b4&translation=city&srcLang=ru&destLang=en): smell - agreeable, taste - [noticeable](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%b7%d0%b0%d0%bc%d0%b5%d1%82%d0%bd%d1%8b%d0%b9&translation=noticeable&srcLang=ru&destLang=en), color – 3 Hazen units, [turbidity](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%bc%d1%83%d1%82%d0%bd%d0%be%d1%81%d1%82%d1%8c&translation=turbidity&srcLang=ru&destLang=en) – 0,5 mg/l, iron content – 0.2 mg/l, fluoride content - 1.9 mg / l, lead – 0,01 mg/l, arsenic - 0.005 mg/l, selenium - 0.005 mg/l.

Task: Make conclusion on quality of drinking water.

[EXERCISE](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%b7%d0%b0%d0%b4%d0%b0%d1%87%d0%b0&translation=exercise&srcLang=ru&destLang=en) №6

According to [analysis](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%b0%d0%bd%d0%b0%d0%bb%d0%b8%d0%b7&translation=analysis&srcLang=ru&destLang=en) of drinking tap water samples in Amritsar: smell - agreeable, taste - agreeable, color – 5 Hazen units, [turbidity](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%bc%d1%83%d1%82%d0%bd%d0%be%d1%81%d1%82%d1%8c&translation=turbidity&srcLang=ru&destLang=en) – 0,5 mg/l, general mineralization - 1600 mg/l, hardness – 10,5 mg/l, sulfates – 370 mg/l, chloride – 420 mg/l, nitrate – 75 mg/l.

Task: Make conclusion on quality of drinking water.

**Typical practical tasks for testing skills:**

Determine the color of drinking water

Identify smell of drinking water.

Determine total water hardness.

**Practical task completion** (independent work of the student).

**Task 1. Determine the color of drinking water**

Progress of work

a) pour water [under test](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%b8%d1%81%d1%81%d0%bb%d0%b5%d0%b4%d1%83%d0%b5%d0%bc%d1%8b%d0%b9&translation=under%20test&srcLang=ru&destLang=en) into the cylinder (flask) of the same type to those in which the chroma scale was prepared;

b) indicate color of water [under test](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%b8%d1%81%d1%81%d0%bb%d0%b5%d0%b4%d1%83%d0%b5%d0%bc%d1%8b%d0%b9&translation=under%20test&srcLang=ru&destLang=en) on a white background, looking for identical color in the scale;

c) color is expressed in degrees, fix the results in [report](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%bf%d1%80%d0%be%d1%82%d0%be%d0%ba%d0%be%d0%bb&translation=report&srcLang=ru&destLang=en).

**Task 2. Identify smell of drinking water.**

Progress of work

а) pour 100 sm3 of water [under test](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%b8%d1%81%d1%81%d0%bb%d0%b5%d0%b4%d1%83%d0%b5%d0%bc%d1%8b%d0%b9&translation=under%20test&srcLang=ru&destLang=en), temperature 20º, into flask, close the flask;

b) mix the water, then open and determine nature and intensity of the smell in accordance with Table 1;

c) test the smell at 60ºС temperature, it is performed by heating the flask with water [under test](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%b8%d1%81%d1%81%d0%bb%d0%b5%d0%b4%d1%83%d0%b5%d0%bc%d1%8b%d0%b9&translation=under%20test&srcLang=ru&destLang=en) in bain-marie to a temperature 50-60 ºС.

d) mix the water, determine nature and intensity of the smell in accordance with Table 1;

e) fix the results in [report](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%bf%d1%80%d0%be%d1%82%d0%be%d0%ba%d0%be%d0%bb&translation=report&srcLang=ru&destLang=en).

Table 1

Determination of smell intensity of the water [under test](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%b8%d1%81%d1%81%d0%bb%d0%b5%d0%b4%d1%83%d0%b5%d0%bc%d1%8b%d0%b9&translation=under%20test&srcLang=ru&destLang=en)

|  |  |
| --- | --- |
| [**point**](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%b1%d0%b0%d0%bb%d0%bb&translation=point&srcLang=ru&destLang=en)**s** | **intensity** |
| 0 | [no](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%bd%d0%b8%d0%ba%d0%b0%d0%ba%d0%be%d0%b9&translation=no&srcLang=ru&destLang=en) smell |
| 1 | very faint smell |
| 2 | faint smell |
| 3 | [noticeable](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%b7%d0%b0%d0%bc%d0%b5%d1%82%d0%bd%d1%8b%d0%b9&translation=noticeable&srcLang=ru&destLang=en) smell |
| 4 | distinct smell |
| 5 | strong smell |

**Task 3. Determine total water hardness.**

[Necessary](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%bd%d0%b5%d0%be%d0%b1%d1%85%d0%be%d0%b4%d0%b8%d0%bc%d1%8b%d0%b9&translation=necessary&srcLang=ru&destLang=en) reagents:

1. 0.1 N solution of Trilon B

2. Ammonium buffer solution.

3. Black chrome [indicator](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%b8%d0%bd%d0%b4%d0%b8%d0%ba%d0%b0%d1%82%d0%be%d1%80&translation=indicator&srcLang=ru&destLang=en).

Progress of work

5 ml of ammonia buffer solution and 6 drops of black chrome indicator are added to 100 ml water, then 0.1N solution of Trilon B is poured slowly from a buret with vigorous stirring until the color changes. Total hardness of water [under test](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%b8%d1%81%d1%81%d0%bb%d0%b5%d0%b4%d1%83%d0%b5%d0%bc%d1%8b%d0%b9&translation=under%20test&srcLang=ru&destLang=en) in ml (milligrams) - equivalents is calculated according to the formula:

Х= a\*K\*N\*1000

 Y

Where:

X – sought water hardness in mg / eq / l.

Y - volume of water taken

а – amount of Trilon B solution in ml, consumed for titration

N-normality of Trilon B solution

K-correction factor of Trilon B solution

1000 - recalculation for 1 liter of water.

***Example:***

100 ml of water is taken for [analysis](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%b0%d0%bd%d0%b0%d0%bb%d0%b8%d0%b7&translation=analysis&srcLang=ru&destLang=en). Expenditure in the titration of 3.58 ml of 0.1 ml Trilon B solution is consumed during titration with a correction factor 0.95.

Total water hardness = 3.58\*0.95\*0.1\*1000 = 3.4 mg/eq

 100

Results of water [analysis](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d0%b0%d0%bd%d0%b0%d0%bb%d0%b8%d0%b7&translation=analysis&srcLang=ru&destLang=en) are fixed in the table

|  |  |  |  |
| --- | --- | --- | --- |
| № sample | smell | color | hardness |
|  |  |  |  |

CONCLUSION:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Test tasks**

**1. The amount fresh water on Earth is:**

1. 50%
2. 2.5 %
3. 71%
4. 10%
5. 1.7 %

**2.** [**Water content**](http://www.lingvo-online.ru/ru/Search/Translate/GlossaryItemExtraInfo?text=%d1%81%d0%be%d0%b4%d0%b5%d1%80%d0%b6%d0%b0%d0%bd%d0%b8%d0%b5%20%d0%b2%d0%be%d0%b4%d1%8b&translation=water%20content&srcLang=ru&destLang=en) **in the body of an adult:**

1. >80%
2. 50-55%
3. 60-70%

**3. The average human physiological needs in water is:**

1. 2.5 liters of water daily
2. 1 liter of water daily
3. 7 liters of water daily
4. 5 liters of water daily

**4. Mineralization of drinking water should not exceed:**

1. 1000 mg/l
2. 2000 mg/l
3. 100 mg/l

**5. Name indicators of radiation safety of drinking water:**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**6. What substance in water can lead to mottling of teeth and, in severe cases, crippling skeletal fluorosis:**

1. Lead (Pb)
2. Selenium (Se)
3. Nitrates (NO3)
4. Fluoride (F)

**7. Name hygienic requirements imposed on the quality of drinking water:**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**8. What substance in water can lead to methaemoglobinaemia:**

1. Lead (Pb)
2. Selenium (Se)
3. Nitrates (NO3)
4. Fluoride (F)

**9. Prolonged use of water with high hardness can lead to:**

1. methaemoglobinaemia
2. urolithiasis
3. fluorosis

**10. Organoleptic characteristics of drinking water is:**

1. Smell, taste, colour, turbidity
2. Iron, nitrates, mineralization
3. Smell, taste, colour, hardness

**Topic 14.** The role of the water factor in infectious morbidity. Criteria for water safety in to epidemiological relation

**Forms of ongoing monitoring of academic performance:**

- recitation

- solving problem-situational tasks;

- practical task completion;

- testing

**Assessment materials of the current control of academic performance:**

**Questions and tasks for consideration:**

 1. The value of water and public water supply conditions in the spread of infectious diseases and infestations.

2 Infectious diseases transmitted through water.

3 Classification of WHO of diseases water borne associated.

4 Mechanism of transmission and signs of outbreaks of water in-fections

5 laboratory examination of drinking water

6 Sanitary indicating microorganisms for assessing the quality of drinking water

7 Organization of area of sanitary control of sources of central-ized water supply

8 Basic methods and facilities for water treatment

9 Methods of water disinfection

**Situational tasks on the topic of the practical lesson:**

Task 1

In the analysis of water from the river water pipeline in the laboratory it was found

|  |  |  |
| --- | --- | --- |
| **I**ndicators  | Units |  |
| Thermotolerant coliform bacteria  | Bacteria 100 ml of water  | 2 |
| Total coliform bacteria  | Bacteria100 ml of water | - |
| Total microbial the number  | of the number of images bacterial colonies in 1 ml  | 75 |
| Coliphages  | number plaque-forming unit (PFU) in 100 ml | - |
| Clostridia spores sulfitereducing | number of clostridia spores in 20 ml  | - |
| Giardia cysts  | number of cysts in 50 ml  | - |
| Residual chlorine |  | 0,3 mg/l |

Give opinion on the compliance of water sanitary epidemiological indicators

Task 2

In the analysis of water from the river water pipeline in the laboratory was found

|  |  |  |
| --- | --- | --- |
| **I**ndicators  | Units |  |
| Thermotolerant coliform bacteria  | Bacteria 100 ml of water  | 0 |
| Total coliform bacteria  | Bacteria100 ml of water | 15 |
| Total microbial the number  | of the number of images bacterial colonies in 1 ml  | 75 |
| Coliphages  | number plaque-forming unit (PFU) in 100 ml | - |
| Clostridia spores sulfitereducing | number of clostridia spores in 20 ml  | - |
| Giardia cysts  | number of cysts in 50 ml  | 3 |
| Residual chlorine |  | 0,1 mg/l |

Give opinion on the compliance of water sanitary epidemiological indicators

Task 3

In the analysis of water from the river water pipeline in the laboratory was found

|  |  |  |
| --- | --- | --- |
| **I**ndicators  | Units |  |
| Thermotolerant coliform bacteria  | Bacteria 100 ml of water  | - |
| Total coliform bacteria  | Bacteria100 ml of water | - |
| Total microbial the number  | of the number of images bacterial colonies in 1 ml  | 10 |
| Coliphages  | number plaque-forming unit (PFU) in 100 ml | - |
| Clostridia spores sulfitereducing | number of clostridia spores in 20 ml  | - |
| Giardia cysts  | number of cysts in 50 ml  | - |
| Residual chlorine |  | 1.5 mg/l |

Give opinion on the compliance of water sanitary epidemiological indicators

Task 4

In the analysis of water from the Underground water pipeline in the laboratory it was found

|  |  |  |
| --- | --- | --- |
| Indicators  | Units  |  |
| Thermotolerant coliform bacteria  | Bacteria 100 ml of water  | - |
| Total coliform bacteria  | Bacteria100 ml of water | - |
| Total microbial the number  | of the number of images bacterial colonies in 1 ml  | 41 |
| Coliphages  | number plaque-forming unit (PFU) in 100 ml | 2 |
| Clostridia spores sulfitereducing | number of clostridia spores in 20 ml  | 3 |
| Giardia cysts  | number of cysts in 50 ml  | - |
| Residual chlorine |  | 0.7 mg/l |

Give opinion on the compliance of water sanitary epidemiological indicators

Task 5

In the analysis of water from the Underground water pipeline in the laboratory it was found

|  |  |  |
| --- | --- | --- |
| Indicators  | Units  |  |
| Thermotolerant coliform bacteria  | Bacteria 100 ml of water  | - |
| Total coliform bacteria  | Bacteria100 ml of water |  |
| Total microbial the number  | of the number of images bacterial colonies in 1 ml  | 25 |
| Coliphages  | number plaque-forming unit (PFU) in 100 ml | - |
| Clostridia spores sulfitereducing | number of clostridia spores in 20 ml  | - |
| Giardia cysts  | number of cysts in 50 ml  | - |
| Residual chlorine |  | 0,3 mg/l |

Give opinion on the compliance of water sanitary epidemiological indicators

Task 6

In the analysis of water from the Underground water pipeline in the laboratory it was found

|  |  |  |
| --- | --- | --- |
| Indicators  | Units  |  |
| Thermotolerant coliform bacteria  | Bacteria 100 ml of water  | 7 |
| Total coliform bacteria  | Bacteria100 ml of water | 35 |
| Total microbial the number  | of the number of images bacterial colonies in 1 ml  | 120 |
| Coliphages  | number plaque-forming unit (PFU) in 100 ml | - |
| Clostridia spores sulfitereducing | number of clostridia spores in 20 ml  | - |
| Giardia cysts  | number of cysts in 50 ml  | - |
| Residual chlorine |  | 0.6 mg/l |

Give opinion on the compliance of water sanitary epidemiological indicators

**Test tasks**

1). The second belt of area sanitary control is designed to protect against

1. Microbial contamination

2. Chemical pollution

3. Destruction of water supply facilities

2) The following disease has waterway transmission

1. Influenza

2. Giardiasis

3. Botulism

4. Gas gangrene

5. Tetanus

3) To determine the epidemiological safety of water the following indicator is used

1. Staphylococcus aureus

2. Salmonellae

3. Lactose-positive Escherichia coli

4. Sulfite-reducing clostridia

5. Streptococcus fecal

4) Clarification is a method of water treatment from:

1. Suspended particles,

2. Colored colloids

3. of infectious agents

4. of fluorine

5) The chemical methods of disinfection include

1. Chlorination

2. The gamma radiation (γ-radiation)

3. Defluorination

4. Boiling

6) The following disease has no waterway transmission

1.Dysentery

2.Ascariasis

3. Hepatitis A

4. Schistosomiasis

5.Influenza

7) Indicator used to determine the epidemiological safety of water is:

1. Salmonellae

2. Streptococcus fecal

3. Thermotolerant coliform bacteria

4. Lactose-positive Escherichia coli

5. Staphylococcus aureus

8). The second belt of area sanitary control is designed to protect against

1. microbial contamination

2. chemical pollution

3. destruction of water supply facilities

9) Disinfection is a method of water purification from

1. Suspended particles

2. infectious agents

3. Colored colloids

4. iron

10). The physical methods of disinfection include

1. Ultraviolet radiation

2. Desalination

3. Oligodynamic effect of silver

4. Fluoridatio

**Topic 15.** Atmospheric air.

**Forms of ongoing monitoring of academic performance:**

- recitation

- solving problem-situational tasks;

- testing

**Assessment materials of the current control of academic performance:**

**Questions and tasks for consideration:**

1. Atmospheric chemistry.

2. Air pollution.

3. Health effects of air pollution.

4. Measures to reduce air pollution.

5. Air quality standards

6. Global problems of air pollution.

**Situational tasks on the topic of the practical lesson:**

EXERCISE № 1

Today in Delhi, the Air Quality Index is 344.

Task: Name the AQI Category and suggest what the impact on the population will be.

EXERCISE № 2

Today in Lucknow, the Air Quality Index is 202.

Task: Name the AQI Category and suggest what the impact on the population will be.

EXERCISE № 3

Today in Calcutta, the Air Quality Index is 463.

Task: Name the AQI Category and suggest what the impact on the population will be.

EXERCISE № 4

Today in Mangalore, the Air Quality Index is 47.

Task: Name the AQI Category and suggest what the impact on the population will be.

EXERCISE № 5

Today in Amritsar, the Air Quality Index is 129.

Task: Name the AQI Category and suggest what the impact on the population will be.

EXERCISE № 6

Today in Varanasi, the Air Quality Index is 318.

Task: Name the AQI Category and suggest what the impact on the population will be.

**Test tasks**

**1.Volume of oxygen in dry air is:**

1. 1%
2. 20.95 %
3. 78.09%
4. 0.039%

**2. This gas prevents hemoglobin from carrying oxygen to tissues, effectively reducing the oxygen carrying capacity of blood, resulting in hypoxia:**

1. Sulfur oxides
2. Nitrogen oxides
3. Carbon monoxide
4. Carbon dioxide

**3. Phenomenon, when air pollution levels are high and there is not much wind so the combination of particles and ground-level ozone:**

1. Ozone depletion
2. Toxic smog
3. Acid rain

**4. Devices intended to clean air emissions using water:**

1. dust cyclones,
2. multicyclones
3. electrostatic precipitators
4. particulate scrubbers

**5. The class of standards in the form of a scale with various thresholds, which is used to communicate to the public and shows the relative risk of outdoor activity is:**

1. concentrations for specific pollutants
2. air quality index (AQI)

**6. Volume of carbon dioxide in dry air is:**

1. 1%
2. 20.95 %
3. 78.09%
4. 0.039%

**7. Acid rain is caused by air emissions of:**

1. chlorine-containing gases
2. sulfur dioxide and nitrogen oxide
3. particulate matter
4. carbon monoxide and nitrogen

**8. Diseases with the highest percentage of deaths caused by air pollution:**

1. cardiovascular diseases
2. lung cancer
3. lung disease
4. nervous diseases

**9. Sources of air pollution are divided into:**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**10. How many substances are included in the calculation of the AQI:**

1. 8
2. 3
3. 6
4. 5

**Topic 16.** The soil and its effect on public health.

**Forms of ongoing monitoring of academic performance:**

- recitation

- practical task completion;

- testing

**Assessment materials of the current control of academic performance:**

**Questions and tasks for consideration:**

1. Hygienic significance of soil.

2. Physical properties of soils.

3. Biogeochemical province and geochemical endemic diseases.

4. Role of soil in the transmission of infectious diseases.

5. Hygienic characteristics of the methods of solid waste disposal.

**Practical task completion (independent work of the student)**

**Students should watch a film about waste management and answer questions:**

1. List the types of waste management that you saw in the movie.

2. What are the main ways to solve the problem of waste?

3. What are the types of waste that can be reused?

**Test tasks**

1. The mineral components of soil are:
2. \_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_
4. \_\_\_\_\_\_\_\_\_\_

2. Kashin-Beck disease may be caused by:

1. excess of iodine, calcium and selenium deficiency
2. excess of selenium, strontium deficiency
3. excess of strontium, calcium and selenium deficiency
4. selenium deficiency

3. The most part of microorganisms is found in soil at a depth of:

1. 1-2 m
2. 10-20 cm
3. 1-2 cm
4. 50-60 cm

4. Uncontaminated soil outside settlements usually consists of:

1. coliform bacteria
2. saprophytic microorganisms
3. spore-forming organisms

5. Complete the fallowing sentence:

The regions and areas characterized by the predominance of certain chemical elements and a lack of others are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

6. The soil's ability to retain water is strongly related to:

1. capillarity
2. soil temperature
3. particle size
4. pore space

7.Keshan disease may be caused by:

1. excess of iodine, calcium and selenium deficiency
2. excess of selenium, strontium deficiency
3. excess of strontium, calcium and selenium deficiency
4. selenium deficiency

8. Which microorganisms are permanent inhabitants of soil:

1. spore-forming organisms
2. helminths
3. viruses
4. coliform bacteria

9. The biological process in which micro-organisms, mainly fungi and bacteria, convert degradable organic waste into humus like substance is called:

1. Composting
2. Pyrolysis
3. Putrefaction

10. Complete the fallowing sentence:

The part of the bulk volume of soil that is not occupied by either mineral or organic matter but is open space occupied by either gases or water is called\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Topic 17.** The climate and health

**Forms of ongoing monitoring of academic performance:**

- recitation

- written questionnaire;

- testing

**Assessment materials of the current control of academic performance:**

**Questions and tasks for consideration:**

1. Weather – the notion. Factors influencing the formation of weather.
2. The formation of weather
3. The influence of weather on health:
4. Мeteotropic reactions. Prevention of meteotropic reactions
5. The climate concept. Factors affecting the climate.
6. Acclimatization
7. The problems of climate change

**Practical task completion** (independent work of the student). Answer the questions and write down the answers.

1. What is weather? Give the definition.
2. What does Weather refer to ?
3. What meteorogical elements can weather be described by?
4. What causes pressure differences?
5. Explain the phenomenon known as an inversion.
6. What are the main features characterizing the weather conditions according to P. Fedorov?
7. Tell about 3 degrees (the first degree, the second degree, the third degree) of severity of meteotropic reactions.
8. Enumerate Climate-forming factors.
9. What measures prevent meteotropic reactions? Tell about Prevention of meteotropic reactions.
10. What is sparing climate characterized by?
11. What is irritating climate characterized by?
12. How many phases does the process of adaptation of the body have?
13. What does the development of acclimatization depend on? What are the most important factors contributing to the normal course of acclimatization?
14. What do large-scale and global environmental hazards to human health include?

**Test tasks**

1 The common weather phenomena include……..

1. wind

2. Inversions

3. ice sheets

4. latitude

2 The average weather over a long period is……..

1. Inversions

2. climate

3. droughts

4. weathe

3 Contributing to the deterioration of dissipation of pollution…..

1. altitude

2. Inversions

3. ice sheets

4. latitude,

4 Most weather phenomena occur in….

1 troposphere

2. one place

3. in the mid latitudes

4. Northern Hemisphere

5 The climate of a location is affected by its…….

1 droughts

2. Inversions

3. ice sheets

4. altitude

6 The common weather phenomena include……..

1 Inversions

2. ice sheets

3. latitude.

 4. cloud

7 Most weather phenomena occur in….

1 troposphere

2. one place

3. in the mid latitudes

4. Northern Hemisphere

8 The climate of a location is affected by its…….

1 droughts

2. barometric pressure

3. ice sheets

4. proportion of land to water

9 Contributing to the deterioration of dissipation of pollution…..

1. altitude

2. Inversions

3. ice sheets

4. latitude,

10 The average weather over a long period is……..

1. Inversions

2. climate

3. droughts

4. weathe

**Topic 18.** Urbanization. Living conditions in populated areas, their impact on health

**Forms of ongoing monitoring of academic performance:**

- recitation

- solving problem-situational tasks;

- practical task completion;

- testing

**Assessment materials of the current control of academic performance:**

**Questions and tasks for consideration:**

1. Urbanization – concept.

2. The urban factors influencing health.

3. Problems of city building. City-forming factors.

4. Formation features of the urban environment: atmospheric pollution, the microclimate of the city.

5. The problem of noise in cities, its sources

6. The effect of noise on human health

7. Problems of water supply and of sanitation large cities

**- Practical task completion** (independent work of the student).

Watching a movie: Towards Clean Cities: Addressing Sanitation in Urban India

**Test tasks**

1) Economic elements that lead to the development of existing or construction of new cities and towns

1. City-forming factors

2. Urban development

3. Urbanization

4. Infrastructure of city

2) Optimal centralized water supply for villages and small towns can be considered

1. from imported water

2. from seawater

3. from surface sources

4. from underground sources

3). City-forming factor are

1. Mineral deposit

2. Water supply and sanitation system

3. Object of cultural and consumer and social services

4. Infrastructure of city

4) Environmental impacts of urbanization

1. heat islands in city

2. a lot of cars

3. growth [urban greening](http://www.multitran.ru/c/m.exe?t=1943701_1_2&s1=urban%20greening)

5) Infrastructure includes –

1. Industrial and agricultural enterprises

2. Building organizations

3. Natural resources

4. Objects of cultural and consumer and social services

6) The disturbing or excessive sound that may harm the activity or health of human is – noise pollution

7) The complex of engineering structures and equipment to ensure reception, collection and disposal of waste water from settlements, industrial enterprises and other facilities, as well as cleaning and decontamination before disposal or discharge to the pond is called

8) **T**he disturbing or excessive sound that may harm the activity or health of human is –

**Topic 19.** Basics of working physiology

**Forms of ongoing monitoring of academic performance:**

- recitation

- solving problem-situational tasks;

- practical task completion;

- testing

**Assessment materials of the current control of academic performance:**

**Questions and tasks for consideration:**

1. Hygiene of work. What is work? Types of work (mental, physical)

2. Changes in the body under the action of labor

3. The severity and intensity of work. Criteria.

4. Efficiency. Fatigue, overfatigue.

5. Working conditions. Classes working conditions..

6. Hazards work (chemical, physical, biological).

7. Regime work and rest.

**Typical practical tasks for testing skills:**

1.Assessment of mental performance

**- Practical task completion** (independent work of the student).

Test description

The survey is carried out using special forms with rows of randomly arranged letters (numbers, figures, newspaper text can be used instead of forms). The examinee looks through the text or form row by row and crosses out certain letters or signs indicated in the instructions.

Test instructions

“On the letterhead, cross out all the letters 'E', looking through row by row. Every 60 seconds, at my command, mark with a vertical line how many characters you have already viewed (managed to view). "

**Test tasks**

1. Overfatique is
2. Physiological state
3. Patological condition
4. Working condition
5. In the process of work the heart rate increases to \_\_\_\_\_per minute at rest
6. 90-95
7. 70-75
8. 80-85
9. 110-115
10. Types of work
11. Mental and creative
12. Physical and creative
13. Mental and physical
14. Physical and dynamic
15. How many phases of the curve of efficiency
16. 1
17. 5
18. 3
19. 4
20. Criteria for Intensity of work
21. stereotyped movements
22. moving in the space of the body
23. weight lifted
24. sensor load
25. Fatique is
26. Physiological state
27. Patological condition
28. Working condition
29. In the process of work the pulmonary ventilation rate increases to \_\_\_\_\_per minute at rest
30. 50-100 L
31. 20-30L
32. 10-20 L
33. 150-200L
34. Criteria for severity of work
35. emotional stress
36. load on the visual analyzer
37. weight lifted
38. sensor load
39. How many types of work
40. 1
41. 2
42. 3
43. 4
44. Optimal duration of short rest breaks
45. 10-20 min.
46. 20-30 min
47. 5-10 min.
48. 60 min

**Topic 20.** Occupational hazards and prevention of diseases associated with them.

**Forms of ongoing monitoring of academic performance:**

- recitation

- solving problem-situational tasks;

- practical task completion;

- testing

**Assessment materials of the current control of academic performance:**

**Questions and tasks for consideration:**

1. Meteorological conditions in the workplace. (Overheating, hypothermia)

2. The electromagnetic, electric and magnetic fields

3. The atmospheric pressure in a production environment

4. Industrial noise and vibration.

5. Production poisons.

6. Personal protective equipment.

7. Medical and preventive measures to protect workers from the harmful effects of working conditions.

**Typical practical tasks for testing skills:**

1. Тhe organization of preventive measures to protect workers from the harmful effects of working conditions.

**- Practical task completion** (independent work of the student).

* + - 1. Create a short diagram of the organization of preventive measures by grouping them!
			2. Make an outline of the classification of harmful industrial poisons.

Solve the problem!

During the next preventive medical examination of the workers of the workshop for the production of car batteries, two people complained of frequent headaches of a dull aching nature, fatigue, muscle pain, trembling of the fingers, and periodic involuntary twitching of individual muscles.

From the anamnesis it has been established that the work experience at this enterprise and in this workshop is more than 10 years. On examination, it was found that the skin is pale with a grayish-earthy tinge, the visible mucous membranes are pale. On the gums, mainly in the front teeth, the color of the mucous membrane is changed: there is a purple strip along the teeth. There is a tremor of the fingers. On palpation of the muscles of the hands, pain along the nerves is noted.

The task. 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?

Answer the questions and complete the assignments.

Indicate the ways of penetration of this toxic substance into the human body.

In which organs is the greatest accumulation of toxic substances?

List the main ways of removing the substance from the body.

What kind of poisoning does this substance cause under production conditions?

Is poisoning with this substance possible in everyday life?

**Test tasks**

1. Foot protection equipment
2. Boots
3. Slippers
4. Shoes
5. All of the above
6. Sources of electromagnetic fields
7. Natural sources
8. Anthropogenic
9. Both “a” and “b” are wrong
10. Both “a” and “b” are correct
11. Natural source of EMF
12. X-Rays
13. Vibration
14. Earth’s magnetic field
15. Electricity
16. Fatique may occur dui to
17. Overwork
18. work
19. Rest
20. Sleep
21. Type of microclimate on the bases of changing during the work shift?
22. Monotonous
23. dynamic
24. According to degree, Poisons divide into \_\_\_\_class
25. 1
26. 6
27. 5
28. 4
29. Types of vibration
30. Local
31. Total
32. Local and total
33. The noise spectrum is^
34. voiced and deaf
35. broadband and tonal
36. temporary and permanent
37. General and local
38. The vibration is
39. pulse and dotted line
40. local and total
41. heavy and light
42. audible and inaudible
43. Additive effect is
44. antagonism
45. summation
46. potentiation

**Topic 21.** Topical questions of hygiene of children and adolescents

**Forms of ongoing monitoring of academic performance:**

- recitation

- practical task completion;

- testing

**Assessment materials of the current control of academic performance:**

**Questions and tasks for consideration:**

1.The concept of science - Hygiene of children.

2.The concept of health. Factors influencing health status

3.Criteria of children's health

4. Physical development as an indicator of children's health. Рhysical development.

5. Methods of assessment of physical development. Generalizing method, Individualizing method, Complex assessment of physical development.

6.The concept of acceleration. The main features of the acceleration.

7.Вasic theory of acceleration.

8.Hygienic basics of the day regime of the children

9.Criteria prepare children for learning at school. Мedical criteria, psychophysiological criteria.

**Typical practical tasks for testing skills:**

1. Determine physical development

**Practical task completion (independent work of the student).**

**Determine physical development.**

Measure the indicators of physical development (height, weight, and chest circumference). For the assessment, use a gender-appropriate regression scale.

**1) Height compares to normal**

**2) Look at which group growth belongs to.**

Opposite the Group are written norms for weight and breast circumference.

**3) Define the Norm of breast circumference and weight then compare to measured.**

**4) Estimate the received result.**

**Physical development options:**

-1 +1 - physical development is normal

-1-2 - physical development below normal

-2 and below-physical development is low

+1+2 - physical development is above normal

+2 and higher-physical development is high

**5) Give recommendations.**

**Test tasks**

**1. To somatoscopic features include:**

1 the shape of the foot

2. growth

3. body weight

4. power.

**2. The acceleration is:**

1. acceleration of puberty

2. the increase in body mass

3. accelerating the pace of growth and development compared to last

4. increase in lifespan compared to the previous generation

**3.According to the neurogenic theory, the main reason for the acceleration is:**

1. change of background space radiation

2. intensive insolation

3. the great flow of information

4. improved nutrition

**4.** **Included in the basic criteria for evaluating the health status of children:**

1. physical development

2. neuropsychological development.

3. the level of resistance.

4. the functional state of the organism

5. all of the above

**5. The test used for admission to school:**

1. Eysenck

2.Kern -Ieraseka

3. proof-reading test

4. Nesterov

**6. To Physiometric indicators include:**

1. vital capacity of lungs

2. the shape of the foot

3. growth

4. body weight

**7.** **According to the theory of solar radiation, the main cause of the acceleration is:**

1. the increase in electromagnetic radiation

2. intensive insolation

3. a lot of information

4. improved nutrition

**8. To somatometric features include:**

1. body weight

2. the shape of the foot

3. the backbone

4. the strength of the back muscles

**9. 50% of health depends on:**

1) socio-economic conditions and lifestyle;

2) biology and genetics;

3) the external environment and environmental factors;

4) organization of health

**10. The slowdown in growth and development compared with the previous generation is:**

1. acceleration

2. retardation

3. decelerate

4. reduction development

**Topic 22** Priority areas for the conservation and promotion of public health. The main components of a healthy lifestyle.

**Forms of ongoing monitoring of academic performance:**

- recitation

- solving problem-situational tasks;

- practical task completion;

- testing

**Assessment materials of the current control of academic performance:**

**Questions and tasks for consideration**:

1. Actuality of the problem healthy lifestyles. Indicators of population health.

2. Definitions health and a healthy lifestyle. The rights and obligations of citizens on health issues.

3. Motivation and basic elements of a healthy lifestyle.

4. Problem solving on the formation of a healthy way of life

**- Practical task completion (independent work of the student).**

**Follow 2 questionnaires at the link.**

**1. https://docs.google.com/forms/d/e/1FAIpQLSfbdNgNpqRayrPKdGHkg6iSSaFPkv8USTtKkO7BiltcY52Cdw/viewform?vc=0&c=0&w=1**

**2. https://docs.google.com/forms/d/1iaVa\_UM5xkkvumzxnxTvZQe7fnxKv2QAGbaX\_lcVt2g/edit**

**Test tasks**

1.Among the factors affecting human health include the following components:

1. Genetic;

2. environment;

3. social;

4. The level of care;

5. All of the above

2. Definition: «A healthy lifestyle» -

1. «A healthy lifestyle» - a way of life aimed at preserving and improving the health of people as the conditions and prerequisites for the existence and development of other aspects of lifestyle»

2. «A healthy lifestyle» - prevention of infectious and noninfectious diseases, with the exception of epidemics and other mass diseases.

3. «A healthy lifestyle» - prevention and treatment of addiction (alcohol, drug, tobacco, etc.).

3. The definition of «health» according to the World Health Organization

1. Health - is the absence of disease or infirmity.

2. Health - is «a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity».

3. Health - is an innate property of the organism, depending on heredity.

4. What categories of lifestyle distinguish (by Yu. P. Lisitsyn)?

1. Motivation, health, profession;

2. The level of life, quality of life and style;

3. Age, gender, heredity.

5. By economic category include:

1. Level of life,

2.Quality life

3.Style of life

6. By sociological category include:

1. Level of life,

2.Quality life;

3.Style of life

7. List the motivation for a healthy lifestyle:

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 8. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Primary, secondary and tertiary prevention in medicine

8. List the main components of a healthy lifestyle:

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 8. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

9. Citizens have the right to:

1. Secure the health and life of food, drinking water, working conditions, training, education, living, leisure and the environment;

2. Participation in the development, validation and public evaluation of programs and plans for the provision of sanitary and epidemiological welfare of the population;

3. Compensation for damage caused to their health as a result of violations of enterprises, institutions, organizations, laws citizens;

4. Reliable and timely information about the state of health, public health, as well as existing and potential health risks and their degree of influence.

5. All of the above.

10. Citizens are obliged to:

1. Take care of your health and the health and hygiene education of their children, do not have harm to the health of others;

2. To take part in the conduct of sanitary and antiepidemic measures;

3. Perform other duties stipulated by the law;

4. All of the above.

**Topic 23** Nutrition as a factor in a healthy lifestyle.

**Forms of ongoing monitoring of academic performance:**

- recitation

- solving problem-situational tasks;

- practical task completion;

- testing

**Assessment materials of the current control of academic performance:**

**Questions and tasks for consideration:**

1. The problem of modern human nutrition.

2. Changes in the structure of nutrition. The main ways of contamination of food products and food raw materials

3. The main toxic substances in food. Xenobiotics monitoring in foods.

4. The value of the food factor in reducing the foreign load in adverse environmental conditions

5. Hygienic evaluation of alternative theories of power:

а) Hygienic evaluation vegetarianism,

б). Hygienic evaluation starvation,

в). Hygienic evaluation the theory of separate nutrition.

8. Features of nutrition of pregnant and lactating women,

9. Features of nutrition of the elderly.

10. Power status as a hygienic indicator. Methods of assessment of nutritional status in the practice of medical health care.

**Typical practical tasks for testing skills:**

Define your indicators (Formula Brock, Body mass, Body Mass Index Waist to Height Ratio, The percentage of body fat, Muscle mass) and evaluate them.

Complete practical work. Attach the pdf file

**Practical task completion (independent work of the student).**

Body mass

Determination of the body weight (BW) is a basic indicator for assessing the nutritional status.

Body weight is usually compared with an ideal (recommended) body weight. For the recommended weight can be accepted body weight, calculated on one of the many formulas and nomograms, or body weight, most "comfortable" in the past for this patient.

On the accuracy of estimation of body weight may influence edema syndrome. In the absence of edema weight, calculated as a percentage of the ideal, it is a useful indicator of the adipose tissue, plus lean body mass.

Reducing the ratio of the measured body weight / ideal body weight up to 80% or less usually indicates malnutrition.

 Use https://www.scientificpsychic.com/fitness/diet.html - define:

Body mass index:

Waist to Height Ratio:

The percentage of body fat:

Muscle mass:

The calculations of the recommended body weight

Formula Brock.

Normal values of body weight are in the following ranges: Recommended body weight = (height - 100) ± 10%.

Brock formula does not account for gender and age of the person, so it only allows to approximately determine the ideal body weight.

Formula Bruksha.

Recommended body weight (kg) =

(Growth below 155 cm) × 95

(Height 155-165 cm) × 100

(Height 165-175 cm) × 105

(Height above 175 cm) × 110.

Recommended body weight can be roughly calculated using the formula:

Recommended body weight (kg) = Height (cm) × chest circumference (cm) / 240.

Index Body Mass Index was developed by the Belgian sociologist and statistician Adolphe Quetelet in 1869.

Body mass index is calculated by the formula: I = M/h2 where: M - weight in kilograms, h - height in meters, and is measured in kg/m2.

Body mass index should be used with caution, only for rough estimation. For example, an attempt to evaluate the body with the help of professional athletes can give incorrect results (a high value of the index in this case is due to muscular).

The following table shows the relationship between weight and height of an adult and a body mass index (middle-aged performance).

- Practical task completion (independent work of the student).

Test tasks

1. The power factor does not increase the risk of disease:

1. Cardiovascular

2. mental

3. cancer

4. endocrine

5. digestive system.

2. Risk factors for coronary heart disease are all factors except:

1. hypercholesterolemia

2. smoking

3. hypokinesia

4. The low level of very low density lipoproteins.

3. The adequacy of individual power is estimated on all indicators except

1 correspond to the actual weight of the ideal;

2 corresponds to the daily energy expenditure;

3. The absolute amount and ratio of nutrients and biologically active substances in food;

4. Benign used in food products.

4. Exclusion from the diet of an old man of eggs and vegetable oil leads to a lack of anti-sclerotic factors:

1. Folic acid;

2. PUFAs;

3. Lecithin

4. Ascorbic acid

5. Calcium

5. For successful adaptation to the cold climate in the diet should be corrected components with the exception of:

1. Increase the proportion of carbohydrates;

2. Reduced the proportion of fat;

3. Increased the number of proteins;

4. Increased the number of B vitamins and ascorbic acid;

5. Increased energy value of the diet.

6. Risk factors of obesity are all, with the exception of:

1. high calorie fatty foods;

2. hypokinesia;

3. genetic predisposition;

4. PUFAs;

5. Refined carbohydrates.

7. Risk factors for malignancy is increased content in the diet:

1. nitrosamines;

2. iron;

3 PUFAs

4. pectin

8. Following the competition in the diets of athletes should include everything except:

1. easily assimilated carbohydrates;

2. Dairy products;

4. Eggs;

5. multivitamin preparations.

9. The energy value of the diet for old people:

1. reduced by carbohydrate and fats of animal origin

2. reduced by animal proteins;

3. reduced due to polysaccharides and fiber.

10. Types of nutritional status:

1. Satisfactory, unsatisfactory; abruptly unsatisfactory

2. Optimal, normal, insufficient, excess

3. The average, below average, above average.

**Topic 24** Significance of exercise for maintaining health. Organization of physical education classes, physical training. The content of medical support.

 **Forms of ongoing monitoring of academic performance:**

- recitation

- solving problem-situational tasks;

- practical task completion;

- testing

**Assessment materials of the current control of academic performance:**

**Questions and tasks for consideration:**

1. Significance of exercise for maintaining health.

2. Physical inactivity as a risk factor for health in modern society.

3. Objectives, basic forms and means of physical education.

4. Physiological and hygienic assessment of physical training. Functional load tests. Evaluation of the functional state. Reaction types cardiovascular system functional tests.

5. The medical control of physical education of different population groups.

6. Diseases and injuries during physical training and sports. Prevention of sports injuries.

**Typical practical tasks for testing skills:**

Perform the proposed tests *(Single component functional test with squats, Sample Stange, the sample Genchi, two-component test),* fill out the results on an A4 sheet, attach the pdf file in your account in the information system.

**Practical task completion (independent work of the student).**

**Single component functional test with squats.**

Before carrying out simultaneous tests resting standing without moving for 3 minutes. Then measure the heart rate per minute. Then perform 20 deep squats in 30 seconds from the starting position with your feet shoulder width apart, arms at your sides. When you squat hand brought forward and return to its original position when straightening. After performing squats counts the heart rate for one minute. In assessing the value determined by the increased frequency of the heart rate after exercise as a percentage. The value of 20% means excellent response of

the cardiovascular system to the load from 21 to 40% - good; from 41 to 65% - satisfactory; from 66 to 75% - poor; 76 and over - very bad.

Samples apnea

Sample Stange to evaluate the stability of the human body to hypoxia and hypercapnia mixed, reflecting the overall kislorodoobespechivayuschih systems of the body when the breath against the backdrop of a deep breath, and Genchi Trial - against the backdrop of a deep exhalation. They are used for judging the oxygen supply of the body and assess the overall fitness level of the person.

**Sample Stange.** Sit. After 2-3 deep breaths man asked to hold your breath for a deep breath at the maximum possible time for him. After the first trial need to rest for 2-3 minutes. Or this: The subject takes a deep breath and exhale and then inhale again (approximately 80% of the maximum), covers her mouth and nose with your fingers grips, holding her breath. As noted stopwatch delay time breathing. An excellent result for the young and healthy people are considered to be: not less than 50 seconds. males and at least 40 seconds. among women.

**The sample Genchi. Sit.** After 2-3 deep breaths a person is asked to breathe deeply and hold their breath for as long as possible for him. Or this: The subject takes a breath, then exhale and hold your breath. If the test is carried out after another breath test, it is necessary to make a break for 5-7 minutes. An excellent result for the young and healthy people are considered to be: not less than 40 seconds. males and at least 30 seconds. among women.

**Two-component test.**

After 3-5 minutes of rest in supine pulse count for 1 min, and then slowly rise after 1 min pulse count again. A healthy, well-trained human difference between lying and standing heart rate is about 6-8 punches in less trained - 10-14 strokes. Increased heart rate more than 20 bpm. / Min may indicate a reduced performance of the heart, or the poor state of regulation of the cardiovascular system of the central nervous system. This acceleration can be one of the signs of overwork, over-training, as well as the "pre-disease" state.

**Test tasks**

1. According to the WHO conclusion, hypodynamia occurs:

1.in adults with sedentary work (at least 5 hours a day) and insufficient (less than 10 hours a week) physical activity outside of working hours;

2. in adults with sedentary work (at least 3 hours a day) and insufficient (less than 10 hours a week) physical activity outside of working hours;

3. in adults with sedentary work (at least 8 hours a day) and insufficient (less than 8 hours a week) physical activity outside of working hours.

2. Hypokinesia -

1. lack of muscle movement;

2. lack of physical stress.

3. Physical education is

1.organic part of general education; socio-pedagogical process aimed at strengthening health, harmonious development of the forms and functions of the human body, its physical abilities and qualities, at the formation and improvement of motor skills and abilities;

2. a set of morphological and functional properties of an organism that characterize the process of its growth and development;

3. part of the general culture of society, combining various activities aimed at achieving a person's physical improvement.

4. Write the types of physical inactivity:

one. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; five. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; 6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; 7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

four. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;

5. Write the basic means for physical education:

one. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; five. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; 6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; 7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

four. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;

6.Physical culture -

1.organic part of general education; socio-pedagogical process aimed at strengthening health, harmonious development of the forms and functions of the human body, its physical abilities and qualities, at the formation and improvement of motor skills and abilities;

2. a set of morphological and functional properties of an organism that characterize the process of its growth and development;

3. part of the general culture of society, combining various activities aimed at achieving a person's physical improvement.

7. A sports facility is:

1. specially allocated open areas or premises for public events and recreation of the population;

2. a purpose-built and appropriately equipped indoor or outdoor facility designed for the training process and sports competitions in various sports.

8. Physical inactivity -

1. lack of muscle movement;

2. lack of physical stress.

9. Write the diseases and conditions in case of improperly organized physical education:

one. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; five. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; 6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; 7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

four. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;

10. Write the main forms of physical education:

one. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; five. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; 6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; 7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

four. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;

**Topic 25.** Formation of a healthy way of life without bad habits, addictions. Optimization and measures to improve living standards.

**Forms of ongoing monitoring of academic performance:**

- recitation

- solving problem-situational tasks;

- practical task completion;

- testing

**Assessment materials of the current control of academic performance:**

**Questions and tasks for consideration:**

1. The history of tobacco smoking.

2. The main components of tobacco smoke (organic and inorganic), their effect on the human body. The phases of the tobacco smoke. Tobacco filters, properties and applications.

3. Reasons why people smoke. Illusions smokers.

4. Socio-economic consequences of smoking.

5. The impact of smoking on women's and children's organism. Preventing youth smoking.

6. The problem of passive smoking. The legal basis of the fight against smoking.

7. Characteristics of the main groups of drugs. Their definition in humans.

8. The main symptoms of drug use, and their effects on the body.

9. Prevention of drug addiction, substance use, and their analogues.

10. The main stages of drug treatment.

11. The history of the use of alcoholic beverages.

12. The prevalence of alcoholism in the world at the present stage. Legislative basis for the reduction of alcohol consumption.

13. The problem of alcoholism among children and adolescents..

14. The effects of alcohol on human organs and systems.

15. Drunkenness and alcoholism.

16. The problem of "beer" alcoholism. Energetic drinks.

17. Internet addiction. The consequences of the negative impact.

18. The basic rules of personal hygiene.

19. Adverse effects from the use of cosmetic means.

21. The negative consequences of non-fulfillment of the rules of personal hygiene

22. Hygiene clothing. Hygienic requirements to clothing for children.

23. Hygienic requirements to the shoes diseases and conditions when wearing incorrect shoes.

24. Functional and fortified foods. The value of genetically modified foods.

25. The use of biologically active additives to food.

26. Food additives, the use in the food industry.

27. Formation of food addiction and diseases due to improper eating behaviors (obesity, anorexia).

**Situational tasks on the topic of the practical lesson:**

**Typical practical tasks for testing skills:**

Create a presentation on the topics (4) proposed and nibble the ppt file. in your account

- **Practical task completion (independent work of the student).**

**Test tasks**

1.Among the factors affecting human health include the following components:

1. Genetic;

2. environment;

3. social;

4. The level of care;

5. All of the above

2. Definition: «A healthy lifestyle» -

1. «A healthy lifestyle» - a way of life aimed at preserving and improving the health of people as the conditions and prerequisites for the existence and development of other aspects of lifestyle»

2. Prevention of infectious and noninfectious diseases, with the exception of epidemics and other mass diseases.

3. Prevention and treatment of addiction (alcohol, drug, tobacco, etc.).

3. The definition of «health» according to the World Health Organization

1. Health - is the absence of disease or infirmity.

2. Health - is «a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity».

3. Health - is an innate property of the organism, depending on heredity.

4. What categories of lifestyle distinguish (by Yu. P. Lisitsyn)?

1. Motivation, health, profession;

2. The level of life, quality of life and style;

3. Age, gender, heredity.

5. By economic category include:

1. Level of life,

2.Quality life

3.Stil of life

6. By sociological category include:

1. Level of life,

2.Quality life;

3.Stil of life

**Topic 26** Hygienic characteristics of the living conditions in large cities and their impact on health.

**Forms of ongoing monitoring of academic performance:**

- Report

- Presentation

**Assessment materials of the current control of academic performance:**

**Topics for presentations:**

1) Hygienic problems of large cities in India.

2) Motor as the main source of air pollution in India.

3) India's water pollution problem.

4) The problem of drinking water shortage in India.

5) Sources of air pollution of cities of India.

6) Soil contamination problem in India.

7) Sources of electromagnetic radiation in major cities.

8) The state of health of the population of India.

9) Hygienic characteristics of construction materials that are used in India.

10) Disposal of solid and liquid waste in urban India.

11) Sources of noise in cities of India and the valuation problem.

12) The main sources of environmental pollution facilities in urban India.

13) Fast food problem in the big cities of India.

14) Hygienic issues of planning and building cities in India.

The student must prepare a presentation (slides 12-15) and to make a report on it (5-7minut)

**Topic 27 Hygiene education and training in creating a healthy lifestyle.**

**Forms of ongoing monitoring of academic performance:**

- recitation

- solving problem-situational tasks;

- practical task completion;

- testing

**Assessment materials of the current control of academic performance:**

**Questions and tasks for consideration:**

1. Principles and objectives for hygiene training and education of the population.

2 Characteristics and basic means of verbal method.

3. Characteristics and basic means of printing method.

4. Description and basic means of visual method.

5. Description and basic means of the combined method

6. The role of health professionals in training and educating people on healthy lifestyles.

7. Types of medical prevention.

**Situational tasks on the topic of the practical lesson:**

**Typical practical tasks for testing skills:**

Create a disease prevention brochure and jail up the pdf. file. in your account information system

(The order number of the topic corresponds to the student number in the group list.)

1. Influenza.

2.Coronovirus.

3. Lung cancer.

4. Atherosclerosis.

5. Obesity.

6. Vitamin C hypovitaminosis

7. Tuberculosis.

8. Hepatitis a

9. A stomach ulcer.

10. Type 2 diabetes.

11. Hypertension.

12. Caries

13. Myopia

- **Practical task completion (independent work of the student).**

**Test tasks**

1. Definition of prevention in health care:

1. The complex of legislative measures aimed at reducing the mortality from external causes;

2. The set of socio-economic activities, which are supported by the standard of living of the population;

3. Practical activities aimed at preserving the health and population growth;

4. The totality of health promotion, prevention and elimination of the causes of human diseases.

2. Types of prevention, depending on the health status, risk factors for the disease, or the severity of disease in humans:

1. Individual and public prevention

2. Primary, secondary and tertiary prevention

3. Industrial, educational, medical, and others. prevention

3. Types of prevention, depending on the population:

1. Direct, indirect;

2. Individual, public;

3. Depending on the age and sex.

4. Methods for the prevention of the use of funds:

1. Verbal, printed, visual, combined;

2. Transfer on radio and television, Internet resources;

3. Talks, lectures, discussions

5. Means of printed propaganda:

1. The individual impact, the impact on a group of persons; mass communication;

2. verbal propaganda; printed propaganda; pictorial propaganda (visual); combined method;

3. Conversations, lectures, discussions;

4. Leaflets, brochures, magazines, memos.

6. Means of public verbal propaganda:

1. The individual impact, the impact on a group of persons; mass communication;

2. Leaflets, brochures, magazines, memos;

3. Conversations, lectures, discussions, quizzes, conferences.

7. Write the principles of hygiene training and education:

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, 5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, 6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, 7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;

4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8. Write goals and objectives of hygiene training and education:

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, 5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, 6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, 7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;

4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

9. Primary prevention measures are aimed at:

1. Prevention of deviations in health and disease in populations;

2. Early detection and prevention of exacerbations, complications, and chronic diseases.

10. Secondary prevention measures aimed at:

1. Prevention of deviations in health and disease in populations;

2. Early detection and prevention of exacerbations, complications, and chronic diseases.

**Characteristics of assessment criteria**

|  |  |
| --- | --- |
| **Monitoring form**  | **Assessment criteria** |
| **Recitation** | On "FIVE POINTS" the answer is assessed, which shows solid knowledge of the main questions of the studied material, is distinguished by the depth and completeness of the disclosure of the topic; knowledge of the terminological apparatus; the ability to explain the essence of phenomena, processes, events, draw conclusions and generalizations, give reasoned answers, give examples; fluency in monologue speech, consistency and consistency of the answer. |
| On "FOUR POINTS" the answer is assessed, which reveals a solid knowledge of the basic questions of the studied material, differs in the depth and completeness of the disclosure of the topic; knowledge of the terminological apparatus; the ability to explain the essence of phenomena, processes, events, draw conclusions and generalizations, give reasoned answers, give examples; fluency in monologue speech, consistency and consistency of the answer. However, one or two inaccuracies in the answer are allowed. |
| On "THREE POINTS" the answer is assessed, which testifies mainly to the knowledge of the studied material, which is characterized by insufficient depth and completeness of the disclosure of the topic; knowledge of the basic issues of theory; poorly formed skills in analyzing phenomena, processes, insufficient ability to give reasoned answers and give examples; lack of fluency in monologue speech, logic and consistency of the answer. Several mistakes are allowed in the content of the answer. |
| On "TWO POINTS" the answer is assessed, revealing ignorance of the studied material, characterized by a shallow disclosure of the topic; ignorance of the main issues of theory, unformed skills in the analysis of phenomena, processes; inability to give reasoned answers, weak command of monologue speech, lack of consistency and consistency. Serious errors in the content of the answer are allowed. |
| ZERO POINTS" is given if there is no answer |
| **Testing** | "FIVE POINTS" is given on condition of 90-100% correct answers |
| "FOUR POINTS" is given on condition of 75-89% correct answers |
| "THREE POINTS" is given on condition of 60-74% correct answers |
| "TWO POINTS" is given on condition of 59% or less correct answers. |
| "ZERO POINTS" is given if there is no answer |
| **Written questionnaire** | "FIVE POINTS" is given to a student if he knows the conceptual apparatus, demonstrates the depth and complete mastery of the content of the educational material, in which he is easily oriented. |
| "FOUR POINTS" are given to the student for the ability to correctly present the material, but the content and form of the answer may have some inaccuracies. |
| "THREE POINTS" is awarded if a student discovers knowledge and understanding of the main provisions of the educational material, but expresses it incompletely, inconsistently, makes inaccuracies in the definition of concepts, does not know how to substantiate his judgments with evidence. |
| "TWO POINTS" is given if a student has scattered, unsystematic knowledge, does not know how to distinguish the main and the secondary, makes mistakes in the definition of concepts, distorts their meaning. |
| "ZERO POINTS" is set if there is no answer. |
| **Problem-situational tasks** | "FIVE POINTS" - the student correctly and fully conducts the initial assessment of the condition, independently identifies the satisfaction of which needs are violated, determines the patient's problems, sets goals and plans nursing interventions with their justification, conducts current and final assessment. |
| "FOUR POINTS" - the student correctly conducts the initial assessment of the condition, identifies the satisfaction of what needs are violated, determines the patient's problems, sets goals and plans nursing interventions with their justification, conducts the current and final assessment. Some minor difficulties in answering are allowed; justification and final assessment is carried out with additional comments from the teacher. |
| "THREE POINTS" - the student correctly but incompletely conducts the initial assessment of the patient's condition. Identifying the satisfaction of what needs are violated, determining the patient's problem is possible with leading questions from the teacher. Sets goals and plans for nursing interventions without justification, conducts ongoing and final assessment with leading questions from the teacher; Difficulties with a comprehensive assessment of the proposed situation. |
| "TWO POINTS" - wrong assessment of the situation; incorrectly chosen tactics of action. |
| "ZERO POINTS" is set if there is no answer. |
| **Practical skills** | "FIVE POINTS". The student has shown full knowledge of the program material, the workplace is equipped with all the requirements for preparation for performing manipulations; practical actions are performed sequentially in accordance with the algorithm for performing manipulations; all requirements for the safety of the patient and medical staff are observed; the time limit is observed; the workplace is cleaned in accordance with the requirements of the sanitary and epidemiological supervision; all actions are justified. |
| "FOUR POINTS". The student has shown complete knowledge of the program material, the workplace is not fully independently equipped to perform practical manipulations; practical actions are performed consistently, but not confidently; all requirements for the safety of the patient and medical staff are observed; time regulations are violated; the workplace is cleaned in accordance with the requirements of the sanitary and epidemiological regime; all actions are justified with clarifying questions of the teacher, made small mistakes or inaccuracies. |
| "THREE POINTS". The student showed knowledge of the basic program material in the amount necessary for the upcoming professional activity, but made no more than one fundamental mistake, the workplace is not fully equipped to perform practical manipulations; the sequence of their implementation is broken; unsure actions, leading and additional questions and comments of the teacher are needed to justify actions; all requirements for the safety of the patient and medical staff are observed; the workplace is cleaned in accordance with the requirements of the sanitary and epidemiological regime. |
| "TWO POINTS". The student discovered significant gaps in the knowledge of the practical skill algorithm, made more than one fundamental mistake, difficulties in preparing the workplace, the inability to independently perform practical manipulations; actions are taken that violate the safety of the patient and the medical staff, the requirements of the sanitary and epidemiological regime, safety measures when working with the equipment and materials used are violated. |
| "ZERO POINTS" is given if there is no answer |
| **Abstract defense** | "FIVE POINTS" is awarded if the student fulfills all the requirements for writing and defending the abstract: the problem is identified and its relevance is justified, a brief analysis of various points of view on the problem under consideration is made and their own position is logically stated, conclusions are formulated, the topic is fully disclosed, the volume is maintained, requirements for the external design, the correct answers to additional questions are given. |
| "FOUR POINTS" is given if the students meet the basic requirements for the abstract and its defense, but at the same time there are some mistakes. In particular, there are inaccuracies in the presentation of the material; there is no logical consistency in judgments; the volume of the abstract is not kept; there are omissions in the design; incomplete answers were given to additional questions during the defense. |
| "THREE POINTS" is given if the student allows significant deviations from the requirements for abstracting. In particular, the topic is covered only partially; factual errors were made in the content of the abstract or when answering additional questions; there is no output during protection. |
| "TWO POINTS" is given if the topic of the abstract is not disclosed to the students, a significant misunderstanding of the problem is revealed. |
| "ZERO POINTS" is given if there is no answer |
| **Presentation demonstration** | "FIVE POINTS" is awarded if there is a connection between the presentation and the program and curriculum, the corresponding section; the didactic and methodological goals and objectives of the presentation were achieved; provides reliable information about historical references and current events; all conclusions are confirmed by reliable sources; the language of the presentation is clear to the audience; the chronology is followed, the priorities are correctly set; logical transition to the conclusion; correct conclusions; the font is readable, the color (background, font, headers) is correctly selected, animation elements are present; no grammatical errors. |
| "FOUR POINTS" is given if the students meet the basic requirements for the presentation, but there are some mistakes. In particular, there are inaccuracies in the presentation of the material; a topic was chosen without taking into account the curriculum; there is no logical consistency in judgments; requirements for graphic content are not met; there are omissions in the design; incomplete answers were given to additional questions during the defense. |
| "THREE POINTS" is given if the student makes significant deviations from the requirements for presentation design. In particular, the topic is covered only partially; errors of fact were made in the content of the presentation or when answering additional questions; no output was presented during the demo. |
| "TWO POINTS" is given if the topic of the abstract is not revealed to the students, a significant misunderstanding of the problem is revealed. |
| "ZERO POINTS" is given if there is no answer. |

**THE LIST OF QUESTIONS TO THE COURSE EXAM ON HYGIENE**

1. The concept of hygiene and sanitation
2. Main tasks of hygiene.

**Modern problems of medical hygiene**

1. Definition of Medical hygiene. General requirements for hospitals.
2. Prevention of hospital acquired infections.
3. Safe disposal of medical waste.
4. Handling with medical waste in India.
5. The concept of microclimate. Microclimate factors. Types of microclimate. Influence of climate on human health.
6. Heat exchange. Chemical and physical thermoregulation.
7. Apparatus and methods for assessing microclimate.
8. The value of solar radiation for humans. The biological significance of the visible, infrared and ultraviolet parts of the solar spectrum.
9. External and internal factors affecting the lighting in the room.
10. Indicators of natural lighting.
11. Hygiene requirements for artificial lighting. Integrated and combined lighting.
12. The features of air composition of the hospital. Sources of air pollution in hospitals.
13. The main indicators for indoor air quality in hospitals (bacteriological, chemical).
14. Polymer materials in medicine. Classification of polymer materials.
15. Natural and artificial ventilation. Types of ventilation. The role of ventilation in the prevention of nosocomial infections.
16. Sanitary and hygienical requirements which are necessary for the planning and regime of hospital emergency rooms.
17. Planning of ward department (section). Set of rooms in the ward section. Types of ward section.
18. Sanitary and hygienical requirements which are necessary for the planning of operation block. Types of operation block. Accommodation plan in the operation block. Arrangement of sanitary inspection room.
19. Code of good practice of the medical personnel with surgical patients who have infection (contagion), caused by resistant staphylococcus aureus
20. Sanitary and hygienical requirements which are necessary for the planning of infectious hospital. Layout of Isolation ward.
21. Sanitary and hygienical requirements which are necessary for the planning and regime of wards for the patients with depressed immunity
22. Sanitary and hygienical requirements which are necessary for the planning of maternity hospitals (obstetric). Structure of obstetrical department. Types of obstetrical department
23. Requirements for the hospital interior.
24. Requirements for the air in the rooms of hospitals.
25. Main terms and the subject matter of Radiation Hygiene. Ionizing radiation sources.
26. Types of ionizing radiation (directly or indirectly ionizing). Factors causing ionizing radiation effects on the human body.
27. The biological effects of radiation on human body. "Deterministic effects" and "Stochastic effects".
28. The use of ionizing radiation sources in medicine.
29. Radiation protection during the exploitation of ionizing radiation sources.
30. Types of radiation exposure, internal or external exposure.

**Food and health of the population**

1. Basis of health nutrition its rational nutrition. Four principles of healthy nutrition.
2. Quantitative characteristic of a diet (caloric intake). Food standards for people of various ages and professions.
3. Requirements for a balanced diet. Qualitative characteristic and a diet balance.
4. Nutrition regime as principle of rational nutrition.
5. The significance of food quality. Indicators of the safe use of food.
6. Degrees of quality of foods. The foodstuffs adulteration
7. Vitamins: definition, classification and significance for human health
8. Biological role, deficiency manifests and sources of water-soluble vitamins in the diet.
9. Biological role, deficiency manifests and sources of dietary fat-soluble vitamins.
10. Purpose and function of nutrition
11. The main functions of carbohydrates and significance for health. The sources of carbohydrates.
12. The main functions of fats and its significance for health. The sources of fats.
13. The main function of proteins and its significance for health. The sources of proteins.
14. The main functions of macronutrients and micronutrients its significance for health. The sources of microelements.
15. Alimentary diseases. Classification. (Obesity, kwashiorkor, alimentary marasmus, malnutrition (alimentary dystrophy).
16. Classification of food poisonings.
17. Microbial Food Poisonings.
18. Non[-microbial Food Poisonings.](https://www.leatherheadfood.com/micro-for-non-micro)
19. Mycotoxicoses, clinical forms of diseases.

**The factors of environment**

1. The problem of water supply. Physiological and hygienic significance of water.
2. Diseases associated with salinity or microelement content of water.
3. Hygienic requirements imposed on the quality of drinking water.
4. The significance of water and public water supply conditions in the spread of infectious diseases and infestations.
5. Infectious diseases transmitted through water. Classification of WHO of diseases water borne associated.
6. Mechanism of transmission and signs of outbreaks of water infections.
7. Basic methods and facilities for water treatment
8. Atmospheric air significance for human. Air pollution.
9. Health effects of air pollution.
10. Global problems of air pollution.
11. Biogeochemical province and geochemical endemic diseases.
12. Role of soil in the transmission of infectious diseases.
13. Hygienic characteristics of the methods of solid waste disposal in the settlements.
14. The concept of weather. Factors influencing the formation of weather. The influence of meteorological factors on health.
15. The concept of climate. Factors affecting the climate.
16. The problems of climate change. The influence of climate change on health.
17. The concept of urbanization. The urban factors influencing health.
18. The problem of noise in cities, its sources. The effect of noise on human health

**Topical questions of hygiene of children and adolescents**

1. The concept of health. Factors influencing health status
2. Criteria of children's health
3. Physical development as an indicator of children's health. Рhysical development.
4. Methods of assessment of physical development. Generalizing method, Individualizing method.
5. Complex assessment of physical development.
6. The concept of acceleration. The main features of the acceleration.
7. Basic theory of acceleration.
8. Hygienic basics of the day regime of the children.
9. Criteria prepare children for learning at school. Medical criteria, psychophysiological criteria.

**Occupational hygiene and protection of workers' health**

1. Hygiene of work. Definition of work. Types of work (mental, physical).
2. Changes in the body under the action of labor.
3. The severity and intensity of work. Criteria.
4. Efficiency (definition, graph). Fatigue, overfatigue (definitions)
5. Working conditions. Classes working conditions. Influence working conditions on the health.
6. The electromagnetic, electric and magnetic fields. Influence on the health.
7. Industrial noise and vibration. Influence on the health.
8. Production poisons. Classification.
9. Industrial Personal protective equipment of workers.

**The basic components of a healthy lifestyle. Hygienic training and education of the population**

1. Actuality of the problem healthy lifestyles. Indicators of population health.
2. Definitions health and a healthy lifestyle. Factors influencing the health of the population.
3. Motivation and basic elements of a healthy lifestyle.
4. Contaminants in food products. The main ways of contamination of food products and food raw materials. The value of the food factor in reducing the foreign load in adverse environmental conditions.
5. Hygienic evaluation of alternative theories of nutrition (vegetarianism, starvation, the theory of separate nutrition).
6. Nutrition status as a hygienic indicator. Methods of assessment of nutritional status in the practice of medical health care.
7. Features of nutrition of certain population groups (pregnant and lactating, the elderly, athletes, etc.)
8. The significance of exercise for maintaining health. Objectives, basic forms and means of physical education.
9. Physical inactivity as a risk factor for health in modern society. Types of inactivity, changes in organs and systems, arising under the influence of low physical activity.
10. Physical activity guidelines for different age groups. Functional loading tests as methods evaluation of functional state health.
11. Characteristics and basic means of verbal, printed, visual and combined methods of hygiene training and education.
12. Types of medical prevention. The concept of primary, secondary and tertiary prevention

**Example of** **examination ticket**

**FSBEI of HE OrSMU of the Health Ministry of Russia**

**Hygiene department**

**The Full-time studying, specialist**

**Speciality: 31.05.01 – General medicine**

**Discipline: Hygiene**

**Form of intermediate certification: Exam**

**ФГБОУ ВО ОрГМУ Минздрава России**

**Кафедра общей и коммунальной гигиены**

**Высшее образование – специалитет**

**Специальность 31.05.01 лечебное дело**

**Дисциплина: Гигиена**

**Форма промежуточной аттестации: Экзамен**

|  |
| --- |
| **Examination ticket/card №1 – Экзаменационный билет №1**1. Definition of Medical hygiene. General requirements for hospitals.2. The biological effects of radiation on human body. "Deterministic effects" and "Stochastic effects".3. Global problems of air pollution.Head of the Hygiene departmentMD, PhD, Professor V.M. BoevDean of the Foreign students facultyMD, PhD A.O. Mironchev |