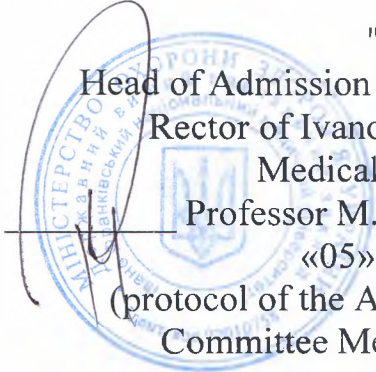


**Ministry of Health of Ukraine**  
Ivano-Frankivsk National Medical University

"Approved"  
Head of Admission Committee  
Rector of Ivano-Frankivsk  
Medical University  
Professor M.M. Rozhko  
«05» April 2019  
(protocol of the Admission  
Committee Meeting № 4)



**Program**  
**of complex entrance exam in Biology, Chemistry and English**  
**for foreigners and people without citizenship**  
who enter the Ivano-Frankivsk National Medical University in 2019  
in accordance with section XIV of the Admission Rules  
and select English as a language of study

**Ivano-Frankivsk – 2019**

# EXPLANATORY NOTE

The purpose of the complex entrance examination is to assess the knowledge of foreigners in three subjects: 1) Biology; 2) Chemistry; 3) English.

Complex entrance examination takes place in written form during 2.5 astronomical hours without a break. When writing a complex entrance exam, the entrant must answer one question in each subject. The results of the answer for each subject are evaluated by a scale from 1 to 5 points. For each subject, the entrant must receive at least 3 points. If the respondent's answer is rated one or two points in one subject, then such an applicant has not entered the Ivano-Frankivsk National Medical University.

The content of the program material for a complex entrance exam consists of three parts that correspond to the names of the subjects: 1) Biology; 2) Chemistry; 3) English.

Each part of the program material contains criteria for evaluating the answers of applicants.

## PROGRAM MATERIAL CONTENT

### EDUCATIONAL SUBJECT: BIOLOGY

Applicant must **KNOW**:

- main signs of living, level of life organization, organisms elemental composition;
- inorganic and organic compounds of organisms, metabolism and energy transformation;
- structure and function of cells, cell division;
- the structure and function of viruses, prions, viroids, bacteria;
- structure and processes of plant life, the variety of plants;
- structure and function of fungi, lichens;
- the structure and function of animals, the variety of animals.
- the structure and functions of the human body;
- reproduction of organisms, individual development of organisms, basis of selection;
- historical development of the organic world;
- the basic laws of heredity and variability;

Applicant **MUST BE ABLE**:

- to characterize the basic biological concepts, laws and theories, biological phenomena and processes;
- to compare the processes of life at different levels of the organization (molecular, cellular, organismic, population-species, ecosystem, biosphere) and to identify the relationships between them;

- to establish causal, functional, structural connections in wildlife, to classify objects;
- to apply biological knowledges to analyze situations that arise in different spheres of life;
- to carry out calculations using the mathematical apparatus;
- to substantiate the conclusions.

## MAIN SECTIONS

### INTRODUCTION. GENERAL BIOLOGY

Biology is a science about living nature. The main signs of the living. Levels of life organization: molecular, cellular, organism, population-specific, ecosystem, biosphere.

#### 1. MOLECULAR LEVEL OF LIFE ORGANIZATION.

**Elemental composition of organisms.** Classification of chemical elements according their content in organisms.

**Inorganic compounds of organisms.** The role of water, salts and other inorganic compounds in the body.

**Organic compounds of organisms.** Structure, properties and functions of organic compounds.

Carbohydrates: monosaccharides, oligosaccharides, polysaccharides.

Lipids. Features of the structure, basic properties and functions in organisms.

Proteins: structural features. Amino acids, peptides and polypeptides.

Enzymes, their structure and properties.

Nucleic acids. Structure, properties and functions of DNA. The concept of the gene. RNA and their types.

Division of cells. The mitotic division of cells into eukaryotes, its phases. Meiotic cell division, its phase.

Metabolism and energy conversion. Metabolism. Assimilation and dissimilation.

Biosynthesis of proteins and its stages. Genetic code and its properties.

Transcription. Genes (structural and regulatory). Exons and introns.

Photosynthesis. The main processes occurring in the light and dark phases of photosynthesis.

#### 2. CELLULAR LEVEL OF LIFE ORGANIZATION.

**Organization of cells.** Modern Cell Theory.

Membranes, their structure, properties and basic functions. Plasma membrane. Transport of substances through membranes.

Cytoplasm and its components.

Organelles. Unicellular organelles: Endoplasmic Reticulum, Golgy apparatus, lysosomes, vacuoles. Double membrane organelles: mitochondria, plastids and their types (peculiarities of their structure and functions). Non-membrane organelles: ribosomes, polyribosomes, cell center, organelle movements.

Nucleus, its structure and functions.

Chromosomes, their structure and chemical composition. Human kariotype.

**Division of cells.** The mitotic cell division, its phases. Meiotic cell division, its phases.

**Metabolism and energy conversion.** Assimilation and dissimilation.

Protein synthesis and its stages. Genetic code and its properties. Transcription. Genes. Exons and introns.

Photosynthesis. The main processes occurring in the light and dark phases of photosynthesis. The value of photosynthesis.

### **3. UNCELLULAR FORMS OF LIFE.**

**Viruses, prions.** Viruses, their chemical composition, structure and reproduction. The mechanism of viruses penetration into the organism. Role of viruses in nature and human life.

### **4. ORGANIZMIC LEVEL OF LIFE ORGANIZATION.**

**Bacteria.** General characteristics of prokaryotes (bacteria, cyanobacteria). Pathogenic bacteria and diseases caused by them. Prevention of bacterial diseases.

**Plants.** General characteristics of Plant kingdom. Classification of plants.

**The structure of plant organism.** Features of unicellular and multicellular plants organization. Tissues of multicellular plants.

Vegetative organs of plants. Root and its features. The structure of the root. Types of the root. The root system and its types (rod, blubber).

Sprout and its functions. Structure of sprout.

Stem and its functions. Inner structure of a stem.

Leaf, its structure and functions.

The bud is the germ of the stem. The structure of the bud.

Generative organs of Angiospermae: (flower, seed, fruit).

Flower is an organ of sexual reproduction of plants. The structure and functions of the flower. Inflorescences, their biological significance.

Seed and Fruit. Structure and function. Seed and fruit development.

**Life processes, reproduction and development of plants.** Nutrition of plants (mineral nutrition, air supply - photosynthesis). Breathing of plants. Transpiration.

Forms of reproduction of plants: sexual and asexual. Spores. Fertilization.

Variety of plants.

Green algae: unicellular (chlorella, chlamydomonade) and multicellular (spirogir, hara, ulva, ulotrix).

Brown algae (laminaria, fucus).

Red algae (phyllophora, porphyry, coral).

Diatomaceous algae (navelula, pinotratia).

Vascular spore plants (Lycopodiales, Equisetales, Pteropsida)

Phylum Gymnospermae (ginkgo, berry thistle, thuja, pine, spruce, larch, juniper, cedar, velvichia, stalk).

Angiospermae. Classification of angiospermae. Monocotyledones and Dicotyledones Classes.

### **Fungi. Lichenes.**

General characteristics of the Fungi kingdom. A variety of fungi.

Lichenes – symbiotic organisms. A variety of Lichenes.

**Animals.** General characteristics of Animal kingdom. Principles of animal classification. Animal tissues.

Unicellular animals. General characteristics. Features of the structure and processes of life.

Freshwater (amoeba proteus, euglena green, infuzoria-shoe) their role in nature and human life.

Symbiotic unicellular animals: parasites (dysentery amoeba, trypanosomes, malaria plasmodiae).

Multicellular animals. Characteristic features of multicellular animals, their difference from unicellular.

Phylum Coelenterata or Cnidaria. General characteristics of the type.

Phylum Flatworms. General characteristics of the type. Class Fluck (liver fluck), features, distribution, structure and processes of life. Class Cestodeae (Taenia solium and Taenia saginata), peculiarities of distribution, structure and processes of life.

Phylum Roundworms (nematodes). General characteristics of the type. Round worms - parasites of plants, animals and humans (Ascaris, Enterobius, Trichinella), diseases that they are caused.

Phylum Carnivorous worms. General characteristics of the type.

Phylum Mollusca. General characteristics and variety of the type.

Phylum Arthropoda. General characteristics of the type. Variety of arthropods.

Class Crustaceae. General characteristics, features of external and internal structure.

Class Arachnida. General characteristics, features of external and internal structure.

Class Insecta. General characteristics. Variety of insects.

Phylum Chordata. General characteristics, habitats. A variety of Chordatae.

The subphylum Vertebrata. General characteristics. Class Cartilage Fish (Chondrichthyes). Features of the structure, processes of life. A variety of cartilaginous fishes (sharks and tinker).

Class Bone Fish. Features of external and internal structure, processes of life.

Class Amphibia. General characteristics. Features of the structure and processes of life in connection with the exit to land.

Class Reptilia. Features of external and internal structure, processes of life.

Class Birds. Features of external and internal structure, processes of life.

Class Mammalia. General characteristics. Features of external and internal structure. Diversity of mammals.

**Human.** The position of a human in the organic world.

Human body tissues (epithelial, muscular, nervous, internal tissues: connective, blood, skeletal) their structure and functions.

Musculoskeletal system. Chemical composition, structure, growth and connection of bones.

Muscle tissue. Structure and function of skeletal muscles.

Structure and functions of the blood. The structure and functions of erythrocytes, leukocytes and platelets.

Blood groups. Immunity, types of immunity.

Functions and structure of the circulatory and lymphatic systems. Blood circulation. The structure of the heart.

Blood vessels, their structure and functions. Blood circulation.  
Functions and structure of the respiratory organs.  
Nutrition and digestion. Structure and functions of the digestive system.  
Digestive glands. Vitamins, their properties.  
Functions and structure of the kidneys.  
Structure and functions of the skin.  
Nervous regulation. Reflex. Reflex arc.  
Nervous system: central and peripheral. Structure and functions of the spinal cord and brain.  
Sensory systems of their significance. Structure and functions of the organs of vision. The structure and functions of the hearing organs. The structure and functions of the equilibrium system.  
Higher human nervous activity. Unconditional and conditioned reflexes.

**Reproduction of organisms.** Forms of reproduction of organisms (asexual, sexual). Methods of asexual type of reproduction of unicellular organisms (division, schizogony, budding, spore formation) and multicellular organisms (vegetative reproduction, spore formation).

Sexual reproduction. Processes of formation of germ cells. Fertility and its forms.

**Individual development of organisms.** Ontogenesis. Periods of individual development of organisms.

**Heredity and variability.** Genetics. Methods of genetic research.

Basic concepts of genetics: genes (structural and regulatory), gene allele, gene locus, dominant and recessive states of signs, homozygotes, heterozygotes, genotype, phenotype, gene pool, heredity, variability, pure line.

Patterns of heredity. Patterns of heredity, established by G. Mendel and their statistical nature. Autosomal linkage. Chromosomal theory of heredity. Sex linked inheritance. Interaction of genes and their types.

Patterns of variability. Modification variability.

Hereditary variability and its types: combinative and mutational. Types of mutations. Mutagenic factors.

Selection. Tasks and methods of selection.

Biotechnology, genetic and cellular engineering. Genetically modified and bizarre organisms.

## **5. SUPRAORGANISMAL LEVELS OF LIFE ORGANIZATION.**

Environmental factors: abiotic, biotic, anthropogenic. Population-specific level of organization of life. Kind. Population.

Ecosystems, their composition and diversity. Producers, Consumers, Reducers. Power Chains. Trophy level.

Biosphere. Noosphere. Circulation of substances and energy flows in the biosphere as the necessary conditions for its existence.

## **6. HISTORICAL DEVELOPMENT OF THE ORGANIC WORLD.**

The main ideas of evolutionary doctrine by Charles Darwin.

Synthetic theory of evolution. Microevolution. Natural selection. Species formation. Macroevolution.

## **EVALUATION CRITERIA**

of the entrant answers in Biology

**Grade "5"** is given for the answer, which is full and consistently reveals the content of the question in Biology. The biological theories, hypotheses and laws are clearly and correctly formulated, scientific concepts and terms are defined and used. The conclusions and examples are given, which successfully illustrate the understanding of the material.

**Grade "4"** is given for the answer, which is full, but there are 1 or 2 inaccuracies or minor mistakes;

**Grade "3"** is given for the answer, which is limited only to the statement of the main things, does not cover it fully or contains significant errors;

**Grade "2"** is given for the answer, which does not fully cover the issue, does not apply modern biological terminology, with 3 or more errors.

**Grade "1"** is given for the answer, in which the number of errors exceeds the grade "2" criterion.

### **Classification of errors and inaccuracies in the Biology answer**

#### **Significant errors:**

1. Wrong formulation of biological theories, hypotheses, laws and concepts.
2. Wrong examples to justify the theoretical positions.
3. The answer does not correspond to the question.
4. Lack of knowledge of structure and processes of living organisms life.

#### **Insignificant errors:**

1. Inaccurate or partly incomplete explanation of biological theories, hypotheses, laws and concepts.
2. There are no examples that illustrate and justify the answer to the question.

If the answer of the entrant in Biology is estimated 1 or 2 points, then such an entrant is not enrolled to studying at the Ivano-Frankivsk National Medical University.

## **EDUCATIONAL SUBJECT: CHEMISTRY**

#### **Applicant must KNOW:**

- the most important laws and theories of chemistry;
- the connection between the composition, structure, physical and chemical properties of matter, methods of their extraction, fields of application;
- the most important natural and artificial substances, their structure, methods of extraction and field of application;
- scientific basis of chemical production;
- ecological problems related to chemistry;
- The role of chemistry in overcoming the global problems of mankind.

Applicant **MUST BE ABLE**:

- to know chemical terminology;
- to use the names and symbols of chemical elements, the modern nomenclature of simple and complex substances;
- to formulate the formulas and equations of chemical reactions, solve calculation and experimental problems.

## **MAIN SECTIONS**

### **1. General chemistry**

#### **Basic chemical concepts. Substance**

Concept of matter, physical body, simple substance (metal, nonmetal), complex substance, chemical element; the smallest particles of matter - atom, molecule, ions (cation, anion).

Composition of the substance (qualitative, quantitative). Valence of the chemical element. Chemical (simplest) and graphic (structural) formulas. Physical phenomenon.

Relative atomic and molecular masses, molar mass, amount of matter. Units of measurement of the amount of substance, molar mass, molar volume; values of temperature and pressure which correspond to normal conditions; molar volume of gas (in normal condition).

The Avogadro's Law; Avogadro's number; average relative molecular mass of gas mixture, air. The mass fraction of the element in the compound.

#### **Chemical reaction**

Chemical reaction, reaction scheme, chemical equation. Laws of conservation of mass of substances during the chemical reaction, volume correlations of gases in the chemical reaction. External effects that accompany chemical reactions.

The term oxidizer, reducing agent, oxidation, recovery. Types of chemical reactions. The speed of the chemical reaction. Catalysis.

#### **Periodic law and periodic system of chemical elements**

Periodic law (modern formulation). Structure of short and long variants of the periodic system; periods, groups, subgroups (main (A), side (B)). Sequential (atomic) element number.

Placement of metallic and non-metallic elements in the periodic system, periods and groups; alkaline, alkaline earth, inert elements, halogens.

#### **The structure of the atom**

The composition of the atom (nucleus, electron shell). Nuclei, isotopes, proton number, nucleon number, orbital, energy level and sublevel, coupled and unpaired electrons, radius of atom (simple ion).



The essence of the phenomenon of radioactivity. Forms s- and p-orbitals, placement of p-orbitals in space.

The sequence of electron filling of energy levels and sublevels in the atoms of elements No. 1-20, No. 26, electronic and graphic formulas of atoms and simple ions of elements No. 1-20, No 26.

### **Chemical bond**

The main types of chemical bond (ionic, covalent, hydrogen, metallic).

Characteristics of covalent bond - multiplicity, energy, polarity.

Types of crystal lattices (atomic, molecular, ionic, metallic); dependence of physical properties of a substance on the type of crystal lattices.

Electronic formula molecule. Elemental electronegativity. The degree of oxidation of an element in a substance.

### **Mixture of substances. Solutions**

Mixtures are homogeneous (solutions) and inhomogeneous (suspension, emulsion, foam, aerosol). Mass and volumetric (for gas) particles of matter in the mixture. Methods of separation of mixtures (settling, filtration, centrifugation, evaporation, distillation). Solution, solvent, soluble substance, crystalline hydrate. Mass fraction of dissolved substance in solution. Structure of water molecule; hydrogen bond in water.

### **Oxides**

Definition, names, classification of oxides, chemical properties of sulfur oxides, methods of obtaining oxides.

### **Foundations**

Definitions (general and in terms of electrolytic dissociation), names, classification, chemical properties, methods of obtaining bases.

### **Acids**

Definitions (general and in terms of electrolytic dissociation), names, classification, chemical properties, methods of obtaining acids.

### **Salt**

Definitions (general and in terms of electrolytic dissociation), names, classification, chemical properties, methods of obtaining salts.

### **Amphoteric compounds**

The phenomenon of amphotericity (on examples of oxides and hydroxides of aluminum and zinc); chemical properties, methods of obtaining amphoteric hydroxides. Genetic links between classes of inorganic compounds .

## **2. Metal elements and their compounds. Metals**

### **General information about metal elements and metals**

The position of metal elements in the periodic system. Features of electronic structure of atoms of metal elements; features of the metal connection. General physical and chemical properties of metals, general methods of their extraction. A series of metal activity.

### **Alkaline and alkaline earth elements**

Chemical properties of sodium, potassium, magnesium, calcium; names and formulas of the most important compounds of alkaline and alkaline earth elements. Application of compounds of Sodium, Potassium, Magnesium, Calcium. Hardness of water. Qualitative determination of sodium ions, potassium, magnesium, calcium.

### **Aluminum**

Chemical properties, extraction and application of Aluminum; names and formulas of the most important Aluminum compounds.

### **Ferum**

Chemical properties and extraction of iron; names and formulas of the most important compounds of the Ferum; application of iron and ferrum compounds.

## **3. Non-metallic elements and their compounds. Nonmetals**

### **Halogens**

Chemical formulas of fluorine, chlorine, bromine, iodine. Chemical formulas, names and physical properties of the most important compounds of halogens (hydrogen chloride, halides of metallic elements). Methods of obtaining in the laboratory and chemical properties of hydrogen chloride and hydrochloric acid; the most important branches of chlorine application, hydrogen chloride, chloride acid. Qualitative reaction to detect chloride ions.

### **Oxygen and Sulfur**

Chemical formulas for oxygen, ozone, sulfur and the most important compounds of Oxygen and Sulfur. Physical and chemical properties of oxygen, ozone, sulfur, sulfurous oxides, sulfate acid, sulfates.

Methods of extracting oxygen in the laboratory; the most important branches of oxygen, ozone, sulfur, sulphate and sulfate use.

Qualitative reaction to detect sulfate ions.

### **Nitrogen and Phosphorus**

Chemical formulas of nitrogen, white and red phosphorus, the most important compounds of nitrogen and phosphorus. Physical and chemical properties of

nitrogen, white and red phosphorus, nitrogen (II) oxide, nitrogen (IV) oxide, phosphorus (V) oxide, ammonia, ammonium salts, nitric acid, nitrates, orthophosphoric acid, orthophosphates.  
Methods of obtaining ammonia, nitrate and orthophosphoric acids in the laboratory; the most important fields of nitrogen, ammonia, nitric acid, nitrates, orthophosphoric acid, orthophosphates.  
Qualitative reactions for the detection of ammonium ions and orthophosphate ions.

### **Carbon and Silicon**

Simple substances Carbon; adsorption, adsorption properties of activated carbon.  
Chemical formulas of the most important compounds of Carbon and Silicon.  
Physical and chemical properties of carbon, silicon, oxides of carbon, carbonates, silicates (IV) oxide, silicate acid, silicates.  
Ways of getting Carbon oxides in the laboratory.  
Qualitative reactions to detect carbonate and silicate ions.

## **4. Organic Chemistry**

### **Theoretical Foundations of Organic Chemistry**

The most important elements-organogens, organic compounds; natural and synthetic organic compounds.  
Molecular structure of organic compounds. Chemical bond in organic molecules: energy, length, spatial orientation, polarity.  $\sigma$ - and  $\pi$ -connections. Single, multiple (double, triple), aromatic bonds.  
Hybridization of the electron orbitals of the Carbon atom;  $sp^3$ ,  $sp^2$ ,  $sp$  hybridization.  
Classification of organic compounds in the structure of the carbon chain and the presence of characteristic (functional) groups.  
The phenomenon of homology; homologues, homologous series, homologous difference. Classes of organic compounds. General formulas of homologous series and classes of organic compounds.  
The notion of primary (secondary, tertiary, quaternary) Carbon atom.  
Nomenclature of organic compounds.  
The phenomenon of isomerism, isomers, structural and spatial (geometric, or cis-trans-) isomerism.  
Classification of chemical reactions in organic chemistry (reactions of joining, substitution, isomerization).

### **Hydrocarbons**

#### **Alkanes**

General formula of alkanes, their nomenclature, isomerism, structure of molecules, physical and chemical properties: substitution reaction, complete oxidation of alkanes, thermal decomposition of methane, cracking. Methods of extraction, application.

### **Alkenes**

General formula alkenes, their nomenclature, isomerism, structure of molecules. Chemical properties: complete oxidation, reaction of hydrogen, halogens, water, polymerization of ethene. Methods of extraction, application. Qualitative reactions to double bond.

### **Alkines**

General formula of alkines, their nomenclature, isomerism, structure of molecules; chemical properties and methods for the production of ethin, application. Qualitative reactions to triple bond.

### **Aromatic hydrocarbons. Benzen**

The general formulas of the arenas of the homologous series of benzene. Structure, physical and chemical properties, methods of obtaining benzene. The notion of aromatic bonds,  $6\pi$ -electronic system.

## **Oxygen-containing organic compounds**

### **Alcohols**

Characteristic (functional) group of alcohols. Classification of alcohols. The general formula of monoatomic saturated alcohols. Structure, nomenclature, isomerism. Physical and chemical properties of methanol and ethanol, methods of extraction and application. The notion of hydrogen bond.

Ethylene glycol and glycerol as representatives of polyhydric alcohols; qualitative reaction to polyhydric alcohols. Phenol. Formula of phenol. Structure of phenol molecule, physical and chemical properties, extraction, application. Qualitative reactions to phenol.

### **Aldehydes**

General formula of aldehydes. Structure of aldehyde molecules, characteristic (functional) group, nomenclature, isomerism. Physical and chemical properties of methanal and ethanal, extraction, application. Qualitative reactions on the aldehyde group.

### **Carboxylic acids**

Characteristic (functional) group of carboxylic acids. Classification of carboxylic acids. The general formula of saturated monobasic carboxylic acids. Structure, nomenclature, isomerism of monobasic carboxylic acids. Chemical properties of methane and ethane acids, extraction, application.

### **Esther. Fats**

General formula of carboxylic esters. Structure, nomenclature, isomerism, properties, extraction, application. Fats - esters of glycerol and higher carboxylic acids. Classification of fats, properties, extraction, application. Soaps and synthetic detergents.

## **Carbohydrates**

Classification of carbohydrates. Composition, molecular formulas for glucose, fructose, sucrose, starch and cellulose; structural formula of the open form of the glucose molecule.

Physical and chemical properties of glucose, sucrose, starch and cellulose. Extraction of glucose, production of sucrose and starch. Application of glucose, starch, cellulose.

Qualitative reactions for determining glucose and starch.

## **Nitrogen-containing organic compounds**

### **Amines**

Characteristic (functional) group of amines. Classification of amines. Nomenclature, isomerism, structure, physical and chemical properties, methods of extraction and application of amines.

Aniline: physical and chemical properties, methods of extraction and application

### **Aminoacids. Proteins**

Composition and structure of molecules, nomenclature, properties, extraction, application of amino acids.

The notion of amphoteric amino acids, bipolar ion; di-, tri-, polypeptides, peptide bond (peptide group of atoms).

The structure of proteins, their properties, application, colour reactions to proteins.

### **Synthetic high molecular substances and polymeric materials on their basis**

The concept of polymer, monomer, elemental link, degree of polymerization. Classification of macromolecular substances; methods of synthesis of high molecular weight substances.

Structure and properties of polymers; thermoplastic polymers and plastics on their basis; the notion of natural and synthetic rubbers, synthetic fibers; the importance of polymers in the social economy and everyday life.

## **EVALUATION CRITERIA**

of the entrant answers in Chemistry

**Grade "5"** is given for the answer, which is full and consistently reveals the content of the question in Chemistry. The applicant knows perfectly modern chemical terminology, is able to think logically, clearly, briefly summarize the theoretical material, which is supported by examples, equations of chemical reactions and chemical formulas.

**Grade "4"** is given for the applicant who has given correct and complete answer to the question, knows modern chemical terminology, is able to think logically, but one or two minor errors or inaccuracies have been made, or the theoretical material is not

always supported by examples, equations of chemical reactions and formulas of compounds.

**Grade "3"** is given to the entrant who correctly, but not completely, answers the question, applies modern chemical terminology, but makes three or four minor errors, the theoretical material is partially supported by examples, in the equations of chemical reactions and formulas compounds there are three or four nonessential errors.

**Grade "2"** is given for the answer, which is partially correct but not complete, without modern chemical terminology, with two and more significant errors, the theory is not supported by examples, in the equations of chemical reactions and formulas of compounds there are three to four significant errors.

**Grade "1"** is given for the answer, in which the number of errors exceeds the grade "2" criterion.

### **Classification of errors and inaccuracies in the Chemistry answer**

#### **Significant errors:**

1. Wrong formulation of chemical laws, definitions and concepts.
2. Wrong examples to justify the theoretical positions. Ignorance of chemical terminology, nomenclature and formulas of compounds, features of their structure, physical and chemical properties, basic methods of extraction and application.
3. The answer does not correspond to the question.

#### **Insignificant errors:**

1. Inaccurate or partially incomplete explanation of chemical laws, definitions and concepts.
2. There are not enough examples illustrating and justifying the answer to the question.
3. Minor mistakes when composing chemical formulas of compounds.

#### **Inaccuracies:**

1. Minor errors in coefficients in the reaction equation.
2. Minor mistakes when applying the nomenclature of compounds, units of measurement of quantities.
3. Calculation errors.

If the answer of the entrant in Chemistry is estimated 1 or 2 points, then such an entrant is not enrolled to studying at the Ivano-Frankivsk National Medical University.

### **EDUCATIONAL SUBJECT: ENGLISH**

The material in the English language program is chosen to meet the goals and objectives that determine the general and professionally oriented levels of the formation of the communicative competence of foreigners and people without citizenship.

In the course of carrying out a task in English, the entrant should set out in writing the content of the given topic, maintaining the logic of the presentation of the material, using the active vocabulary of the given topic, correct spelling, stylistic and grammatical norms of the English language.

### **Communicative Competence Content**

The applicant should be ready to answer in written form to one of the following questions:

1. Autobiography.
2. About myself.
3. My family.
4. Description of a person's appearance.
5. My friend.
6. My native country.
7. The weather in my country.
8. The capital city of my country.
9. Interesting places in my country.
10. Excursion around my native city.
11. Holidays in my country.
12. Customs and traditions in my country.
13. My favorite holiday.
14. Gifts. How do I choose gifts?
15. Travelling. Why do people travel?
16. The journey of my dream.
17. What do I know about Ukraine?
18. My hometown.
19. Famous people of my native country.
20. Famous writers of my native country.
21. My school years.
22. Seasons and Weather.
23. Sports. Popular kinds of sports.
24. My favourite sport.
25. My favourite sportsman.
26. The films I like to watch.
27. My favourite actor (actress).
28. The music that I love.
29. My favourite book.
30. The Internet in Modern Life.
31. Television in Modern Life.
32. Professions. My future profession.
33. Why have I chosen Medicine?
34. My plans for the future.
35. My hobby.
36. Free time and leisure activities.
37. My house.

38. The house of my dream.
39. What does it mean "to be happy"?
40. The happiest day of my life.
41. The brightest memories of my childhood.
42. My lifestyle.
43. Socializing with friends.
44. Problems of a modern world.
45. Life in the countryside: advantages and disadvantages.
46. Life in the city: advantages and disadvantages.
47. Ecology and environment.
48. Healthy diet and proper nutrition.
49. Healthy way of life.
50. The most valuable things in my life.
51. The profession of a doctor: advantages and disadvantages.
52. My working day.
53. Eating out.
54. My weekends.
55. The way I celebrate my birthday.
56. The most popular means of transport.
57. My summer holidays.
58. My meals during the day.
59. What cannot be bought with money?
60. We are not doing enough to protect our world.

### **EVALUATION CRITERIA** of the entrant answers in English

**Grade "5"** is given for the answer of the applicant who fully reveals one of the suggested topics. The statement is constructed logically and indicates the proper level of English language proficiency. In his/her answer the entrant uses an active vocabulary corresponding to the topic, demonstrates a thorough knowledge of grammar. It is possible to have a few non-rough errors that do not impede the understanding.

**Grade "4"** is given for the applicant who reveals one of the proposed topics in a sufficient volume, has an active vocabulary on the topic, demonstrates the broad vocabulary and knowledge of the grammatical material at the proper level. Minor mistakes are allowed in the terminology or style; and one or two grammatical errors or a few minor ones.

**Grade "3"** is given to the entrant who reveals one of the suggested topics partially. In the answer, an active vocabulary is used that corresponds to the proposed topic, but with tautology and demonstrates a limited vocabulary and imperfect knowledge of



grammar. 3-5 spelling mistakes, 3-5 lexical or grammatical mistakes may occur in the answer.

**Grade "2"** is given for the answer of the applicant who reveals inadequate scope of one of the proposed topics. Poor active vocabulary and grammar on the proposed topic are demonstrated with many significant spelling mistakes.

**Grade "1"** The entrant does not reveal the proposed topic, demonstrates the complete lack of knowledge of the active vocabulary, a low level of grammar with a large number of mistakes of various types.

If the answer of the entrant in Chemistry is estimated 1 or 2 points, then such an entrant is not enrolled to studying at the Ivano-Frankivsk National Medical University.