УТВЕРЖДАЮ
Первый проректор учреждения образования «Гродненский государственный медицинский университет»,
доцент
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Перечень вопросов
для вступительного
собеседования
для иностранных граждан, поступающих
на факультет иностранных учащихся с английском языком обучения

List of topics for admission testing in English

Grammar

1. **Verb Tenses (Active and Passive)**
   - Simple/Indefinite Tenses
   - Continuous Tenses
   - Perfect Tenses
   - Perfect Continuous Tenses

2. **Verb forms**
   - Infinitive
   - Gerund
   - Participle

3. **Modal verbs**
   - Can / Could
   - May / Might
   - Must
   - Have to / Have got to
   - Be to
   - Need
   - Ought to
   - Should
   - Would

- Shall, Will
- Dare
- Used to

4. **Noun**

5. **Article**

- Definite article
- Indefinite article
- Zero article

6. **Adjective and adverb**

7. **Pronoun**
- Personal
- Possessive
- Reflexive
- Demonstrative

8. **Reported speech**

9. **Clauses**
- Adjective clauses
- Adverb clauses
- Noun clauses
- Defining/Non-defining relative clauses

10. **Conditionals**
- First conditional
- Second conditional
- Third conditional
- Zero conditional

English vocabulary on topics:
- Body parts
- Musculoskeletal system
- Cardiovascular system
- Respiratory system
- Sensory organs
- Digestive system
- Nervous system
- Endocrine system

List of topics related to Biology

1. General characteristics of living organisms: chemical structure, cellular structure, metabolism, homeostasis, mobility, irritability, reproduction, growth and development, heredity and variability, adaptation to the conditions of the environment.
2. The chemical elements found in Living systems. The macronutrients and the micronutrients. Inorganic substances. Water and its role in the cell. Acids and bases, buffers.
3. Chemical compounds in Living systems. Organic compounds. Biopolymers and monomers.
4. Proteins. Amino acids are protein monomers. Protein structure: primary, secondary, tertiary, quaternary.
5. Functions of proteins: structural, enzymatic, transport, contractile, regulatory, signal, protective, toxic, energy, storage.
6. Carbohydrates. Monosaccharides and disaccharides. Polysaccharides. Starch. Glycogen. Cellulose. Chitin. Functions of carbohydrates: energy, storage, structural, metabolic.
7. Lipids. Fats and phospholipids. Lipid functions: energetic, construction, protective, heat-insulating, regulatory.
8. Nucleic acids. The structure and functions of DNA. The structure, types and functions of RNA.
9. A cell is a structural and functional unit of living organisms. Cytoplasmic membrane. Chemical structure. Functions: barrier, receptor, transport.
10. A cell is a structural and functional unit of living organisms. The structure of the cytoplasm (hyaloplasm, organelles).
11. A cell is a structural and functional unit of living organisms. The nucleus: structure and function
12. Cell cycle. Interphase. Mitosis. Phases of mitosis. The biological significance of mitosis.
13. Meiosis and its biological significance. Phases of meiosis. Genetic recombination in meiosis. The biological significance of meiosis.
14. General characteristics of metabolism: assimilation and dissimilation, plastic and energy metabolism.
15. Storage of hereditary information. The genetic code and its properties. Realization of hereditary information - protein biosynthesis.
16. Reproduction of organisms. Asexual reproduction and its forms (cell division, budding, fragmentation, vegetative reproduction).
17. Heredity and variability. Mendel`s experimental design. The principle of dominance, dominant and recessive traits. Monohybrid cross.
18. Principle of segregation. The testcross. The cytological basis of Mendel`s principles.
19. Dihybrid cross. The principle of independent assortment. Cytological basis of the princile of independent assortment.

20. Anthropogenesis. Factors that regulate population. Biological and social factors influence on the human population growth.

List of topics related to Chemistry

Section: General and inorganic chemistry

1. Goals and objectives of chemistry. Atom. Molecule. Ion.
2. Chemical element. Simple substances and complex compounds. The phenomenon of allotropes.
3. Relative atomic and relative molecular masses. Mol. Molar mass.
4. The law of mass conservation. Its use in chemical calculations and practice.
5. Avogadro's law and its consequences. The concept of normal conditions with respect to gases.
6. The nature and types of chemical bonds. Covalent bond (polar and nonpolar). The exchange and donor-acceptor mechanisms of covalent bond formation.
7. Ionic bond. Metallic bond. Hydrogen bond. Substances with bonds of different types.
8. Valency. Oxidation degree. Elements with constant and variable valence.
9. The structure of an atom. The concept of electron cloud. Atomic orbital. The energy level and sublevel.
10. The electronic structure of an atom. The system of quantum numbers as a characteristic of electronic states in the atom. Pauli's principle. Aufbau principle (Klechkovsky's rules).
11. Periodic law and periodic system of chemical elements by D.I. Mendeleev. Relation of periodic law with the electronic structure of atom.
12. The structure of Periodic System by D.I. Mendeleev. Change of chemical elements atoms properties (radius, ionization energy, electron affinity, electronegativity) and their compounds in groups and periods of the Periodic System.
13. Classification of chemical reactions on the base of different principles. Chemical reaction of additions, decomposition substitution exchange. Redox reactions.
14. Reversible chemical reaction. Chemical equilibrium and conditions that affect the shift of chemical equilibrium. Le Chatelier's principle.
15. Rate of chemical reactions. Dependency of chemical reaction rate of temperature.
16. Rate of chemical reactions. The phenomenon of catalysis and catalysts.
17. Rate of chemical reactions. The dependency of reaction rate of reactants nature and concentration.
18. The concept of solutions. Ways of expression for composition of solutions.
19. The concept of electrolytes and non-electrolytes. Electrolytic dissociation by Arrhenius. Strong and weak electrolytes.
20. Oxides. Classification of oxides.

21. Bases. Alkalis and insoluble bases.
22. Acids. Classification of acids.
23. Chemical properties of acids, bases and salts.
24. Hydrogen, its physical and chemical properties. Laboratory synthesis of hydrogen and its uses.
25. Halogens, their comparative characteristics based on it position in the Periodic System and the structure of atoms. Chemical properties of the example of chlorine.
26. General characteristics of VIA group elements. Oxygen, its physical and chemical properties. Allotropy oxygen. Getting oxygen.
27. General characteristics of VIA group elements. Sulfur, its physical and chemical properties.
28. General characteristics of VA group elements. Nitrogen, its physical and chemical properties.
29. General characteristics of VA group elements. Phosphorus. Phosphoric acid and its salts.
30. General characteristics of elements IVA group elements. Carbon, its physical and chemical properties. Allotropic forms of carbon. Carbon (II) and (IV) oxides and their chemical properties.
31. General characteristics of IVA group elements. Silicon oxide (IV) and silicic acid. Silicates.
32. Metals and their position in the Periodic System. Features of the electronic structure of atoms. Typical physical and chemical properties of metals. Uses of metals.
33. Natural compounds of metals. Main methods of metals preparation. The role of metals in plant and animal organisms.

Section: Fundamentals of Organic Chemistry

1. The theory of chemical structure of organic substances by A.M. Butlerov.
2. Principles of organic substances nomenclature. Classification of organic substances.
3. Hybridization of carbon atoms in organic substances.
4. Alkanes. Homologous series of saturated hydrocarbons. Nomenclature of alkanes.
5. Alkanes. Physical and chemical properties of alkanes (on the example of methane and ethane oxidation and substitution reactions).
6. Alkenes. The structure of molecules. Chemical properties of alkenes. Addition reactions: hydration, hydrogenation, hydrohalogenation halogenation.
7. Alkenes. The polymerization reaction of ethylene hydrocarbons. Polyethylene. Polymers uses.
8. Alkynes and their nomenclature. The structure of molecules. Chemical properties of alkynes. Addition reactions: hydration, hydrogenation, hydrohalogenation halogenation.
9. Oxygen-containing organic compounds: alcohols, carboxylic acids, esters.

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