

SYLLABUS
FOR THE ENTRY EXAM IN BIOLOGY
FOR THE SPECIALTY "MEDICINE"

1. **Tissues.** Epithelial and connective tissue. Muscle and nervous tissue.
2. **The digestive system.** Digestion in the oral cavity – teeth, salivary glands, tongue, pharynx, esophagus. Digestion in the stomach and intestines – stomach, small intestines, pancreas, liver, large intestine.
3. **The respiratory system** - nasal cavity, pharynx, trachea, lungs, gas exchange.
4. **The urinary system.** Excretion, kidneys, ureters, urinary bladder, urethra.
5. **The cardiovascular system.** Heart and blood vessels. Blood – plasma, clotting, formed elements. Heart activity and blood circulation.
6. **Immunity** – innate and acquired.
7. **The locomotor system.** The skull, vertebral column, chest (thorax) and limbs. The muscles – groups, action, function, physiological properties.
8. **The reproductive system.** The male reproductive system. The female reproductive system.
9. **The nervous system.** The spinal cord – structure and function. The brain – parts and function. The cerebrum - structure and function. The autonomic nervous system.
10. **The endocrine system** - pituitary gland, thyroid gland, parathyroid glands, pancreas, adrenal glands, sex glands.
11. **The sensory systems.** The auditory sensory system. The visual sensory system.
12. **The skin** - structure and functions.
13. **Chemical composition of the cell** – proteins, enzymes, nucleic acids.
14. **Viruses** – structure and reproduction.
15. **The prokaryotic cell** – bacteria (structure and reproduction).
16. **The eukaryotic cell** - cell membrane (structure and membrane transport), non-membranous and single-membrane organelles, double-membrane organelles, cell nucleus and chromosomes.
17. **Cell processes** - catabolic processes (glycolysis), Krebs cycle, biological oxidation, oxidative phosphorylation.

- 18. Genetic processes in the cell** – replication, transcription and translation.
- 19. Cell division** - mitosis and meiosis.
- 20. Heredity.** Genetics of sex. Sex determination and differentiation. Sex-linked inheritance. Linked genes and crossing over.
- 21. Variability.** Phenotypic and genotypic variability. Gene and structural chromosomal mutations. Numerical chromosomal mutations. Inherited diseases in humans.
- 22. Reproduction, growth and individual development.** Gametogenesis and fertilization. Embryonic development. Post-embryonic development.