

## **TOPICS FOR THE ENTRANCE TEST**

1. Types of tissues. Epithelial and connective tissue.
2. Muscle and nerve tissue.
3. Structure of bones and joints. Skull.
4. Bones and joints of the spine, chest and limbs.
5. Muscles. Muscle physiology.
6. Blood.
7. Immunity.
8. Heart and blood vessels. Cardiac activity and blood circulation.
9. Respiratory organs. Breathing.
10. Digestion. Digestion in the oral cavity.
11. Digestion in the stomach and intestines.
12. Organs of the urinary system.
13. Skin.
14. Male reproductive system.
15. Female reproductive system.
16. Spinal cord.
17. Brain. Telencephalon.
18. Pituitary gland, thyroid gland, parathyroid glands.
19. Population - species, composition and structure.
20. Biocenoses (natural communities).
21. Interaction between populations in the biocenosis.
22. Ecosystems - structure and productivity. Substance cycle and energy flow in ecosystems.
23. Proteins. Polypeptide chains.
24. Structure and properties of proteins: primary, secondary, tertiary and quaternary structure; properties of proteins.
25. Biological catalysts - enzymes.
26. Nucleic acids. Deoxyribonucleic acids - structure, role in heredity.
27. Ribonucleic acids - structure, types, functions.
28. Eukaryotic cells – size, shape and structure.
29. Interactions between cells and the environment - structure of the plasma membrane and transport across membranes.

30. Cellular uptake and secretion - lysosomes, Golgi complex, phagocytosis, pinocytosis, secretion.
31. Cell energy - mitochondria, chloroplasts.
32. Nucleus - definition, structure and function.
33. Chromosomes.
34. Photosynthesis. Light phase of photosynthesis.
35. Dark phase of photosynthesis. Influence of various factors on photosynthesis.
36. Degradation of nutrients in the cell - glycolysis, Krebs cycle.
37. Biological oxidation.
38. Replication - DNA biosynthesis.
39. Transcription - RNA biosynthesis.
40. Translation - protein biosynthesis.
41. Cell division. Mitosis - essence and regulation.
42. Meiosis - essence, phases, meaning.
43. Monohybrid cross.
44. Dihybrid cross.
45. Genes interaction.
46. Gender genetics.
47. Linked inheritance and crossover.
48. Modification variability.
49. Genotypic variation.
50. Germ cell development.
51. Fertilization.
52. Embryonic development.
53. Postnatal development. Aging. Death.
54. Charles Darwin's theory of evolution.
55. Evidence of evolution: paleontology.
56. Evidence for evolution: anatomy, embryology and molecular biology.
57. Modern theories of evolution. Microevolution and macroevolution
58. Human origin and evolution.