

BIOLOGY SYLLABUS

Admission examination topics

Medical University-Pleven

1. Biology as a science. Methods and important tools. The living and the nonliving.
2. The organism a united whole. Organization of the human body
3. Epithelial and connective tissue.
4. Muscular and nerve tissue.
5. Bone and joint structures. Skull.
6. Bones and joints of the vertebral column, thorax and limbs.
7. Muscle system. Muscle physiology.
8. Body fluids. Characteristics of blood plasma.
9. Blood cells.
10. Immunity functions of blood.
11. Heart and blood vessels.
12. Heart activity. Blood circulation. Lymph circulation.
13. Respiratory system. Function of the respiratory organs.
14. The digestive system. Digestion in the mouth.
15. Digestion in the stomach and intestines.
16. Nutrition. Food. Vitamins. Chemical breakdown of food.
17. Excretory system.
18. The skin. Thermoregulation.
19. Human reproduction and development.
20. Male reproductive system.
21. Female reproductive system.
22. Fertilization and embryonic development.
23. Postnatal development.
24. The nervous system
25. Spinal cord.
26. Brain.
27. Autonomic nervous system.
28. The endocrine system. Pituitary gland, thyroid gland, parathyroid glands.
29. The endocrine system. Pancreas, adrenal glands, testes and ovaries.
30. System of common sensitivity.
31. Sight (Visual system).
32. Hearing (Auditory system).
33. Taste and smell.
34. Motor and balance sensory systems (Sensory system for equilibrium and movement).
35. Cell – the basic structural and functional unit of organism.
36. Chemical composition of the cell.
37. Inorganic substances - water and minerals.
38. Carbohydrates – monosaccharides and polysaccharides.
39. Lipids.
40. Proteins and polypeptide chains.
41. Structure and properties of proteins.
42. Biological catalysts - Enzymes.
43. Nucleic acids. DNA.
44. RNA.
45. Viruses – on the boundary between living and non-living matter.

46. Viruses – agent of diseases.
47. Prokaryotic cells – structure and functions.
48. Organization of eukaryotic cells. Cytoplasmic organelles.
49. Exchange of substances between cell and environment.
50. Providing the cell with proteins.
51. Taking particles in and secretion.
52. Providing the cell with a program of existence.
53. Chromosomes – carriers of the cell program.
54. Cellular surface.
55. The cell – a highly automated laboratory.
56. Breakdown of nutrients within the cell. Providing the cell with energy.
57. Metabolism and energy balance.
58. Biological oxidation.
59. The role of ATP in cell energetics. Oxidative phosphorylation.
60. Replication – biosynthesis of DNA.
61. Transcription – biosynthesis of RNA.
62. Translation – biosynthesis of proteins.
63. Cell cycle. Cell reproduction.
64. Cell division – mitosis.
65. Meiosis.
66. Monohybrids cross. Dihybrids cross. Mendel's laws.
67. Sex chromosomes and sex-linked traits.