Biology Examination Topics

1. The types and the role of adaptation in the evolutionary process.
2. The composition, structure and growth of bones in length and thickness. Bone connection.
3. The first and second Mendel's laws, their cytological study.
4. The diversity of parasitic worms and fighting with them.
5. Modern definition and criteria of species.
6. Microevolution. Macroevolution and the ways of its implementation.
7. Type of Coelenterates. Feature. Classification. Origin. Value.
8. Vital capacity of lungs. Respiratory reflexes. The regulation of breathing.
9. The main forms of natural selection (according to the synthetic theory of evolution).
10. The general characteristics of mosses. The peculiarity of structure and reproduction of folliage-caulescent mosses. The importance of mosses.
11. The mutation process, its influence on the population gene pool.
12. The human skin: structure and functions.
13. The medical leech. Systematic positioning. The peculiarity of vital activity processes. The importance of leech.
14. Analyzers. Auditory analyzers. Structure and functions of hearing organs. The hearing hygiene.
15. The elementary evolutionary phenomenon. Stages, ways, methods of species forming.
16. Parts of plants, used in anemophilous and entomophilous plants for pollination. Floscules and their biological importance. Autopollination.
17. Analyzers. Visual analyzer. Vision hygiene.
18. Natural selection as a factor, directing evolutionary process. The kinds of the natural selection.
19. Gymnosperm. The structure and replication of Gymnosperm. The propagation and significance of the coniferous in nature, medicine and national economy.
20. The significance of endocrine glands. Hormones. The role of humoral regulation in the body.
21. Population waves, their relation to economic reasons and influence on the population gene pool.
22. The root zones of plants and their functions. The growth of the root. Plant tissues. Absorption of water and mineral salts by roots.
23. Morphological and physiological characteristics of the human endocrine system.

24. The ecological characteristic of populations as an elementary evolutional structure.
25. Type Mollusks. General characteristics of the type. Specific features of their living activity. The diversity and significance of representatives of mollusks.
26. Morphological and physiological features of the human excretory system.
27. The genetic characteristic of populations as an elementary evolutional structure.
28. Fungi kingdom. General characteristics of fungi. Mold fungi. Yeast. Parasitic fungi which cause diseases. The role of fungi in nature, in household.
29. Morpho-physiological peculiarities of digestive system of a human being.
30. Elementary evolutionary factor: isolation, its types. Its importance.
31. Annelides type. General characteristics. Classification. The main representatives. The significance.
32. Morpho-physiological peculiarities of respiratory system of a human being.
33. Elementary evolutionary factor: genetically automatic process or genetic drift. The significance.
34. Amphibians class. General characteristics of the class. Reproduction and development. Variety of amphibians and their importance. The origin of amphibians.
35. Morpho-physiological peculiarities of lymphatic system of a human being.
36. Formation and development of modern synthetic theory of evolution.
37. Class of Birds. General characteristics of the class. Diversity of birds, their adaptation to different habitats. The origin of birds.
38. Internal environment. Composition of human blood.
39. Ch. Darwin's idea about mechanisms of the evolution of living organisms. Modern understanding of mechanisms of the evolution.
40. Class of Dicotyledonous plants. Characteristic features of plants of the class Dicotyledons.
41. Morphophysiological peculiarities of the nervous system of a human.
42. Elementary unit of evolution.
43. Bacteria. Structure, vital activity and spread of bacteria. Role of bacteria in nature, in medicine. Malignant bacteria and struggle against them.
44. Skin of a human. Structure and functions of skin. Strengthening of an organism.
45. Rules of the evolution. Macroevolution: directions and pathways.
46. Double impregnation of flowering plants. Formation of seeds and fruits. The meaning of blossoms, fruits and seeds in nature and human life.
47. Morphophysiological peculiarities of locomotor system of a man.

48. Anthropogenesis and its main stages.
49. Type round worms. General description of the type. Variety of round worms and struggle against them.
50. Unconditioned reflexes, their meaning. The conditions of unconditional reflexes formation and classification.
51. Methods of human genetics studying.
52. One-celled organisms. General description. The main systematic groups. Representatives and the importance of one-celled animals.
53. The main provisions and arguments of chromosome theory of inheritance.
54. The peculiarities of higher nervous activity in a man.
55. Modifications of the root and stem. The biological and economic significance.
56. Heart, its structure and work. Automaticity of the heart. The concept of neural and humoral regulation of the heart.
57. Human ecology: biological, environmental, social and genetic risk factors and their influence on health.
58. The main features of the class of mammals. Classification of the class.
59. Digestive enzymes of the pancreatic juice. The types and conditions of action.
60. Environmental factors and their effect on the body.
61. Pulmonary and systemic circulation. Hygiene of the cardiovascular system.
62. Phylum Flat warms. Characteristics of the phylum. Classification. Special features of reproduction and development. Significance.
63. Ecological classification of organisms: the types of food, life forms. The classification of life forms of plants and animals.
64. Class Tapeworms. Features of the class. The cycle of porcine and bovine tapeworms development.
65. Single-membrane organelles, their structure and function.
66. Population genetics. Hardy-Weinberg Law.
67. Viruses, characteristics of their structure and functioning.
68. The interim nature of inheritance with mono- and two-hybrid crossing. The statistical nature of cleavage events.
69. Selection of bacteria, fungi, its importance for the microbiological industry. The main directions of biotechnology.
70. Vegetative reproduction of plants. Methods of vegetative reproduction. The biological and economic importance of vegetative reproduction.
71. Nucleic acids structure and their role for the cell.
72. The notion of biocoenosis, biogeocoenosis, ecosystem.

73. The Sporozoa. Main signs of the class. Malarial plasmodium, development cycle, value.
74. Internal environment of an organism: blood, tissue liquid, lymph. Blood structure: plasma, formic elements. Erythrocytes, platelets and leukocytes, their structure and functions.
75. Main regularities of heredity and variability of organisms and their cytological bases.
76. Bodies of blood circulation: heart and vessels. Blood movement in vessels. Pulse. Blood pressure. Hygiene of cardiovascular system.
77. The Arthropods. General characteristics of the type. Classification. Distinctive signs of the class. Its role in nature and a human life.
78. The linked inheritance. Coupling violation. Recross of chromosomes.
79. Interaction of allelic and nonallelic genes. Genotype as a complete system.
80. Human blood types. Blood transfusion. Indications, rules.
81. Vital and mitotic cells' cycles.
82. The plant family Monocotyledonae, biological peculiarities. Typical cultivated and the wild-type. Importance in the field of national economy.
83. Genesic organs of flowers, the functions of flowering plants. The differentiation of flowering plants.
84. The floral mutations, its effect.
85. Human body (organs and systems). The structure and missions of the tissues (epithelial, connective, muscular and neural).
86. Protozoa. Structure. Medical importance.
87. The variations for chromosome sex determination.
88. Urinary system. Kidneys. The importance of metabolic-waste products.
89. The definition and classification of hereditary variation. The peculiar features of each type, sources and importance.
90. Meiosis. Its distinctive characteristics and importance.