

TOPICS ON BIOLOGY FOR ADMISSION TEST (Non-Medical Programs)

1. Basic structure and characteristics of the eukaryotic cell (cellular organelles, structure, function).
Comparison of the prokaryotic and eukaryotic cell. Supracellular organization levels (tissues, organs, organism).
2. Basic biomolecules (nucleotides, amino acids, carbohydrates, lipids) and their polymers.
3. Thermodynamics, energy and metabolism (the laws of thermodynamics, potential, kinetic, free and activation energy, ATP).
4. Basic metabolic pathways: glycolysis, biological oxidation, photosynthesis (the biological role and basic characteristics of enzymes).
5. The DNA and its role in regulation and heredity: the structure of DNA, the genetic code, transcription, translation and protein synthesis, the replication of the genetic material.
6. The evolution of life and origin of species.
7. Basic systematics of plants and animals, major taxonomic groups.
8. Sexual and asexual modes of reproduction in plants and animals.
9. Population and community ecology (demography, environmental factors, ecosystem dynamics).
10. Animal and human behavior.

Textbook: Life. The Science of Biology. 8th. edition. Sadava, Heller, Orians, Purves, Hillis (ed.) Sinauer Associates, INC. VHPS/W.H. Freeman and Co. Gordonsville, VA, U.S.A