Syllabus of Entrance Exams

BIOLOGY

Systematic subtyping

Protozoa, their subtyping and impact, Sporozoa, Ciliata, Porifera, Cnidaria and Acnidaria, Plathelminthes, Nemathelminthes, Mollusca, Annelida, Arthropoda - their characteristic and subtyping, Deuterostomia, Chordata, Vertebrata, Fish, Amphibians, Reptiles, Mammalia, Primates, Viruses, Bacteria

The general biology


The biology of the man

PHYSICS

- Standard prefixes used to denote multiples of ten
- Conversion of metrical units of length, surface and volume, density of water
- Kinematics
- Newton’s laws of motion
- Circular motion
- Work, energy, impulse of force, momentum
- Hydrostatics and hydrodynamics
- Isotherm, isobaric and isochoric processes
- Laws of thermodynamics
- Sound
- Current, voltage and resistance, AC and DC current
- Basic electrical elements, capacitors, resistors, coils. Series and parallel wiring.
- Light, lenses and mirrors, focal equation, microscope, telescope, human eye
- The nature of the atom, x-rays
- Radioactivity, radioactive decay, half life

CHEMISTRY

- Atoms, atomic structure, the periodic table, electron structure, electron configuration and the periodic table
- Chemical bonds, ionic and covalent bonds, H-bonds
- Chemical names and formulas, chemical equations, the mole
- Acids and bases, pH, strong and weak acids and bases
- Oxidation ad reduction
- The common inorganic compounds, chemistry of the Earth
- The common compounds of H, Na, K, Cu, Ag
- Water, concentration of the solutions in mol and %
- The common compounds of Mg, Ca, Sr, Ba, Zn, Cd, Hg
- The common compounds of B, Al, C, Si, Sn, Pb
- The common compounds of A, P, As, Sb, Bi
- The properties of oxygen
- The common compounds of S, Se, Cr, Mo, W
- The common compounds of F, Cl, Br, I, Mn
- The common compounds of Fe, Co, Ni, Os, Pt
- Chemical calculations based on chemical equations, the use of Avogadro+s number
- Organic compounds, aliphatic and aromatic hydrocarbons, isomers, saturated and unsaturated aliphatic hydrocarbons the common halogen derivatives
- Alkohols, aldehydes and acids, phenols and quinones
- Carboxylic acid derivatives – esters, amides, anhydrides
- Heterocyclic derivatives, pyridine, pyrrole, pyrimidine, purine, imidazole and some derivatives
- Aminoacids, peptides, proteins
- Saccharides – the most important mono-, di- and polysaccharides
- Lipids – fats oils, phospholipids, Steroids – cholesterol
- Nucleic acids and their components, Vitamins
The list of recommended books for the entrance exam

According to fact that students/applicants come from different countries with different level of high/secondary school we cannot insist on strictly recommended literature/books for preparation for the admission exams in Biology, Chemistry and Physics. The following selection of the books just represents some Study guides for A Levels (corresponding with A Levels in U.K.):