

Bachelor's degree Studies - Chemistry

1. Chemical elements, chemical compounds, and mixtures.
2. Atom. Atomic number, mass number, isotopes. Atomic mass.
3. Mole and Avogadro's number
4. Empirical and molecular formula of chemical compounds.
5. Electron configurations. Valence shell.
6. Periodic table of elements: groups, periods. Electron structure and periodic table.
7. Types of chemical bonds.
8. Chemical equations. Stoichiometric calculations.
9. Reactions in aqueous solutions. Electrolytic dissociation. pH.
10. Properties of chemical elements. Metals and non-metals. Allotropy
11. Inorganic compounds: oxides, hydroxides, acids, salts. Formulae, properties, reactions
12. Red-ox reactions. Oxidation numbers. Oxidizing agent and reducing agent
13. Classification of organic compounds
14. Homologous series of alkanes. Isomerism
15. Reactions of organic compounds: addition, elimination, substitution, condensation

Reference:

L. Jones, P. Atkins – Chemistry, Molecules, Matters, and Change: 3rd edition (1997) and newer editions