GENERAL TOPICS INCLUDED IN ENTERY TESTS
IN CHEMISTRY
FOR SPECIALTY MEDICINE
TRAKIA UNIVERSITY, STARA ZAGORA, BULGARIA

General and Inorganic Chemistry

1. Structure of the atom.
2. Electronegativity. Oxidation numbers.
3. Types of chemical bonds. Ionic bonding, covalent bonding, hydrogen bonding – definition, examples.
3. Inorganic and organic compounds – nomenclature
4. Types of chemical reactions.
5. Chemical equations and their balancing. Stoichiometry.
6. Oxidation and reduction - definition. Oxidizing and reducing agents – definition and examples. Oxidation-reduction
equations – balancing.
7. Chemical equilibrium and equilibrium constant. Principle of Le Chatelier's
8. Rate of chemical reactions. Factors influencing the rate of a chemical reaction.
10. Solutions and solubility. Concentration and related calculations.
11. Electrolytes and nonelectrolytes. Ionization. Arrhenius and Bronsted-Lowry
definitions of acid and base
12. Ionization of water. pH - definition. Calculations of pH of a strong acid or base.
13. Hydrolysis of salts.
14. Electrolysis. Electrolytic cells.
15. Periodic table of elements. General characteristic of the groups.
16. The utilization of the periodic table for predicting oxidation numbers. Properties,
chemical formulas and types of bond within the compounds.

Organic Chemistry

1. Classification of organic compounds. Isomers.
2. Saturated, unsaturated and aromatic hydrocarbons.
3. Organic halides.
4. Alcohols, phenols and ethers.
5. Aldehydes and ketones.
6. Carboxylic acids (mono- and polyfunctional).
7. Functional and substitutional derivatives of carboxylic acids.
8. Amines. Nitro compounds.
9. Monosaccharides, disaccharides, and polysaccharides.
10. Triglycerides. Fats and oils.
11. Amino acids. Peptides. Proteins.