**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.