

Faculty of Chemistry
MAGISTRACY
Examination Card – 2019

1. Main types of chemical bonds. Characteristics of chemical bonds in molecules: energy, length, valence angle, order (multiplicity) and polarity. The idea of hybridization of atomic orbitals. The geometry of polyatomic molecules: the Gillespie model on the example of particles H_2O , SF_4 , ICl_4^- .

2. Electrochemical methods of analysis: General characteristics, classification. Direct potentiometry and potentiometric titration. Measuring potential. Classification of indicator electrodes. Practical application of ionometry.

3. The rate of chemical reaction. Elementary and complex reactions. The basic postulate of chemical kinetics. Molecularity and order of reaction. Rate constant. Methods for determining the reaction order and the rate constant.