

***MEDICAL UNIVERSITY OF PLOVDIV
FACULTY OF PHARMACY
DEPARTMENT OF CHEMICAL SCIENCES***

**BIOINORGANIC CHEMISTRY
SEMINARS – THESES**

II – semester

SEMINAR № 1 – 2 hours

s-ELEMENTS IN THE BIOSHERE AND THEIR COMPOUNDS (part I)

1. Hydrogen – atomic structure and properties of hydrogen compounds
2. Types of hydrogen bonding
3. Biological buffer systems

SEMINAR № 2 – 2 hours

s-ELEMENTS IN THE BIOSHERE AND THEIR COMPOUNDS (part II)

1. Alkali and alkaline earth metals, intracellular and extracellular functions
2. Homeostasis of redox metal ions

SEMINAR № 3 – 2 hours

PRESENTATION OF AN ABSTRACT RELATED TO THE CHARACTERIZATION OF A SPECIFIC BIOELEMENT ELEMENT AND ITS COMPOUNDS

1. Place in Periodic table, structure of atoms and its ions
2. Chemical bonds in biomolecules
3. Biological significance
4. Dosage forms and/or food supplements

III – semester

SEMINAR № 4 – 2 hours

p-ELEMENTS IN THE BIOSHERE AND THEIR COMPOUNDS (part I)

1. CO and CO₂ – impact on the human body
2. Ways to regulate pH in the human body (homeostasis) – bicarbonate, hydrogen phosphate and protein buffer system
3. Nitrogen compounds – ammonia, nitrogen(II) oxide, nitrates and nitrites – biological role
4. Hydrogen sulphide and sulfur dioxide – biological activity
5. Hydrochloric acid – biological significance

SEMINAR № 5 – 2 hours

d-ELEMENTS IN THE BIOSHERE

1. Iron containing proteins – biological importance
2. Copper containing proteins – biological importance

SEMINAR № 6 – 2 hours

PRESENTATION OF AN ABSTRACT RELATED TO THE CHARACTERIZATION OF A TOXIC ELEMENT AND ITS COMPOUNDS

1. Place in the Periodic table, structure of the atom and its ions
2. Chemical bonds in biomolecules
3. Toxicity
4. Therapy

Prof. K. Gavazov, PhD

Head of the Department “Chemical Sciences”