FINAL EXAMINATION:

Written test (50 points) + oral examination.
Passing the exam: minimal 60%.

Registration of students for the first date of the final examination will be specified in lectures.

The thematic area of the final examination covers topics of lectures, practicals and seminars.

LECTURES:

Pathobiochemistry of saccharides. Basic principles of digestion and absorption: saccharides, proteins, fat. Disorders of mono- and di-saccharide metabolism, pathobiochemistry of lactose/fructose/galactose: lactose maldigestion/intolerance, fructose intolerance, galactosemias. Disorders of glycogen metabolism - glycogen storage diseases GSDs, liver GSDs, muscle GSDs, generalized GSDs.


Pathobiochemistry of the heme metabolism. Characterization of the porphyrin structures. Heme biosynthesis of heme, degradation of heme: production of bile pigments. Pathobiochemistry of the blood- and bile- pigments metabolism, heme biosynthesis diseases (porphyrias), heme degradation diseases (hyperbilirubinemias), hemoglobin diseases (hemoglobinopathies).


Pathobiochemistry of the water and mineral „household“. Characterization of the water and mineral „household“, biochemical functions of water, ion distribution, mechanisms of regulation. Pathobiochemistry of the water „household“, basic malfunction types, malfunctions related to the disorders of regulation mechanisms, malfunctions related to the disorders of endocrine organs. Pathobiochemistry of the mineral „household“, Ca²⁺.

Clinical enzymology. Functional and non-functional enzymes, enzymes as diagnostic markers - clinical significance. The importance of isoenzymes in clinical enzymology, clinically significant enzymes. General characteristic of hormones, causes of hormonal alteration. Pathobiochemistry of selected hormonal disorders, growth hormone, adenocorticotropic hormone, antidiuretic hormone, thyroid hormones.


PRACTICALS / SEMINARS:

Enzyme diagnostic of liver diseases. Activity determination of aminotransferases AST, ALT. Activity determination of gamma-glutamyl transferase and alkaline phosphatase in serum. Evaluation under physiological and pathological conditions and graphical presentation of results.


Use of clinical-biochemistry knowledge in diagnostic of diseases. Overview of the basic reference parameters, their practical application. Clinical enzymology. Diagnostical importance of enzymes and isoenzymes.