

**Approved**  
**Vice-Chancellor for Academic Affair**  
**Prof. J.Guminsky**  
**31.08.2017** \_\_\_\_\_

**THE LIST OF STUDENTS INDEPENDENT WORK TOPICS**  
**to discipline “Biological and bioorganic chemistry” for students of stomatological faculty, speciality «Stomatology»**  
**2017-2018 academic years**

№	Themes	Time(h)
1	Place of biochemistry among biomedical disciplines. History of biochemistry. Development of biochemical studies in Ukraine, scientific biochemical school	2
2	Structures of enzymes and their activities regulation. Isoenzymes: use in enzymodiagnosics	2
3	Multienzyme complexes and its roles in cellular metabolism. Inhibitors of enzymes - mechanisms of action and values in medicine	2
4	History of the discovery and biological value of Citric Acid Cycle	2
5	O.M.Bah and V.I.Palladin - famous Ukrainian biochemists, authors of the theory of biological oxidation	2
6	Roles of vitamin coenzymes of the 1-st group in cellular energy metabolism	2
7	Oxidative phosphorylation – Mitchell’s theory. ATP-synthetase - its structure and functioning. Disconnectors of oxidative phosphorylation and thermogenesis regulation.	2
8	History of glycolysis discovery and the contribution of certain scientists in its researches. Glycolysis and carcinogenesis. Scientific works of O.Varburg	2
9	Food value of carbohydrates. Digestion of carbohydrates. Fermentation: types, mechanisms, biological significance. Inherited disorders of carbohydrate metabolism: fruktosemia, galactosemia, abnormalities of glucose-6-phosphate dehydrogenase activity, glycogen storage diseases	2
10	Food value of lipids. Digestion of lipids. Bile acid. Transport and deposition of lipids. Biological values of polyunsaturated fatty acids and their synthesis in human body. Disorders of sphingolipids metabolism.	2
11	Problems of digestion and uptake of proteins in human. Putrefaction of proteins in the intestine. Inherited disorders of urea synthesis cycle. Enzymopathies amino acids metabolism.	2
12	History of molecular biology. I-st and II-nd Crick’s postulates. Modern aspects of genetic engineering. Genes cloning. DNA – diagnosis. Regulation of gene expression in human.	2
13	History of discovery and significance of diffuse endocrine system. Physiologically active eicosanoids	2
14	History of thiamine discovery and its biological value	2
15	Biochemistry of blood coagulation and fibrinolysis	2
16	Rational nutrition - component longevity. Biological role and manifestations of deficiency of some trace elements - Zn, Mn, Mg	2
17	Immunochemistry. Immunosuppressants and adjuvants	2
18	Features of collagen synthesis and degradation	2
19	Biochemistry of muscle training and fatigability	2
20	Fundamentals of molecular psychobiology	2
	<b>Total</b>	<b>40</b>

**Head of Biochemistry Departament**

**Prof. Zaichko N.V.**