1st SEMESTER
GENERAL MEDICINE

BIOCHEMISTRY PRACTICAL TOPIC LIST for End Semester Exam

1. Photometry
- principle of the photometric method
- photometric assay in practice, possibilities for the calculation of results

2. Determination of total protein in serum
- commonly used methods
- normal serum total protein concentration, conditions with increased and decreased serum total protein value

3. Determination of albumin in serum
- functions of albumin
- normal serum albumin concentration, conditions with increased and decreased serum albumin value
- principle of the assay

4. Conditions of optimal enzyme activity
- modelling of substrate specificity
- investigation on the influence of temperature on catalytic activity

5. Characterize the hydrolysis of starch
- enzymatic hydrolysis
- acidic hydrolysis

6. Characterization of non-specific phosphatases
- types, substrates and functions of phosphatases
- conditions with increased and decreased serum alkaline phosphatase activity

7. Assay on the dependence of enzyme activity on substrate concentration
- how can we make a bisecting dilution series?
- interpretation of the plot (Michaelis-Menten)

8. Linearization method of the Michaelis -Menten equation and the direct linearization
- linearization of the results of the alkaline phosphatase enzyme assay

9. Determination of glucose-6-phosphatase activity
- function of the enzyme, its role in the metabolism, consequences of related enzyme deficiency
- principle of turbidimetry, principle of the assay
- protocol of glucose-6-phosphatase assay, evaluation of the results

10. Determination of uric acid concentration in serum
- synthesis of uric acid
- conditions with hyperuricemia, gout
- principle of the assay, diagnostic role of uric acid assay

11. Investigation on the functioning of the respiratory chain by methylene blue reduction
- characterization of mitochondrial respiration, uncoupling agents and inhibitors
- principle of the assay