Date ..... **Name** ..... **Group** .....

Instructions and lab report form for the practical lesson on biochemistry

Topic: Electrophoresis, properties of proteins

Tasks 1 & 2: Electrophoresis of serum proteins in agarose, comparison with SDS-PAGE

Principle of experiment:
Summarize what both techniques of protein electrophoresis have in common and in what aspects they differ from each other.

Result:
Describe or make a drawing of the protein bands that you can see on the stained agarose gel, and compare with the results of separation of the same samples by SDS-PAGE.

Task 3: Selected reactions of amino acids and proteins

3.1 Ninhydrin reaction

Principle:

Results:

Sample:	**1** Alanine	**2** Tyrosine	**3** Proline	**4** Albumin	**5** Gelatin
Color change:					
Evaluation:					

Conclusion:

3.2 Xanthoproteic reaction

Principle:

Results:

Sample:	**1** Alanine	**2** Tyrosine	**3** Albumin	**4** Gelatin
Color change:				
Evaluation:				

Conclusion:

3.3 Reaction of cysteine – proof of sulfur in protein molecules

Principle:

Results:

Sample:	**1** Alanine	**2** Cysteine	**3** Albumin	**4** Gelatin
Color change:				
Evaluation:				

Conclusion:

3.4 Biuret reaction

Principle:

Results:

Sample:	**1** Alanine	**2** Biuret	**3** Albumin	**4** Gelatin
Color change:				
Evaluation:				

Conclusion:

Task 4: Reversible precipitation of proteins

Principle – how can protein get precipitated reversibly?

Results/Observations:

4.1 Precipitation of proteins with alcohol:

4.2 Precipitation of egg-white protein with sodium chloride and its reversal:

Conclusion:

Task 5: Precipitation of proteins by denaturation

Principle – what is denaturation?

Result/observation:

5.1 Precipitation of proteins with heavy metal salts

5.2 Precipitation of proteins with mineral acids

5.3 Precipitation of proteins with organic acids

5.4 Precipitation of proteins with high temperature (boiling)

Conclusion:

Summarize what agents caused protein denaturation. Why in certain conditions denaturation did not lead to protein precipitation?