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

Lab report from the practical lesson on biochemistry

Topic: **Biochemical examination of cerebrospinal fluid**

Task 1: Qualitative estimation of protein in CSF (Pandy's test)

Principle:

Result/observation:

Task 2: Quantitative estimation of protein in CSF

Principle:

Results:

	Test tube 1 CSF sample	Test tube 2 Standard	Test tube 3 Blank
A 600 nm			0

Calculation:

$$\text{Sp-Total protein (g/l)} = \frac{A_{CSF}}{A_{standard}} \times \text{standard concentration}$$

Sp-Total protein (g/l) = ———————— × …… = ……..

Conclusion:

Task 3: Estimation of albumin concentration in CSF and serum

Principle:

Results:

	Test tube 1 CSF sample	Test tube 2 Serum sample	Test tube 3 Standard	Test tube 4 Blank
A 610 nm				0

Calculation:

a) Concentration of albumin in CSF:

$$\text{Sp-Albumin (g/l)} = \frac{A_{CSF}}{A_{standard} \times 10} \times \text{standard concentration}$$

Sp-Albumin (g/l) = ———————— × …… = ……..

b) Concentration of albumin in serum:

$$\text{S-Albumin (g/l)} = \frac{A_{Serum}}{A_{standard}} \times \text{standard concentration}$$

$$\text{S-Albumin (g/l)} = \frac{\quad}{\quad} \times \ldots\ldots\ldots\ldots\ldots = \ldots\ldots\ldots\ldots\ldots..$$

c) Albumin quotient:

$$Q_{alb} = \frac{\text{Albumin in CSF}}{\text{Albumin in serum}} = \frac{\quad}{\quad} = \ldots\ldots\ldots\ldots\ldots.$$

Conclusion:

Task 4: Estimation of glucose concentration in CSF and serum

Principle:

Results:

	Test tube 1 CSF sample	Test tube 2 Serum sample	Test tube 3 Standard	Test tube 4 Blank
A 500 nm				0

Calculation:

a) Concentration of glucose in CSF:

$$\text{Sp-Glucose (mmol/l)} = \frac{A_{CSF}}{A_{standard}} \times \text{standard concentration}$$

Sp-Glucose (mmol/l) = ———————— × …… = ……..

b) Concentration of glucose in serum:

$$\text{fS-Glucose (mmol/l)} = \frac{A_{Serum}}{A_{standard}} \times \text{standard concentration}$$

fS-Glucose (mmol/l) = ———————— × …… = ……..

c) Glucose quotient:

$$Q_{glu} = \frac{\text{Glucose in CSF (mmol/l)}}{\text{Glucose in serum (mmol/l)}} = \text{————————} = \text{…….}$$

Conclusion:

Task 5: Spectrophotometry of CSF

Principle:

Results and evaluation:

Spectrum of sample 1:

Absorption maxima:

Evaluation:

Spectrum of sample 2:

Absorption maxima:

Evaluation:

Spectrum of sample 3:

Absorption maxima:

Evaluation:

Task 6: Evaluation of isoelectrophoreograms of CSF and serum

Principle:

Results and evaluation:

	Electrophoreogram 1		**Electrophoreogram 2**	
	Serum	*CSF*	*Serum*	*CSF*
Type:	……..		……..	
Possible condition:	……..		……..	