

# EVICAB

## Bioelectromagnetism

Examination 2013.03.04 at 09.00-12.00 o'clock

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### Examination

For the part a) of the questions, please give a short answer.

For the part b) of the questions, please give a more detailed answer including discussion.

1)

- a) What are the ion concentrations in- and outside the cell membrane in the resting state?
- b) What factors affect to the flow of ions through the cell membrane?

2)

- a) What is the voltage clamp method?
- b) For what purpose the voltage clamp method is used?

3)

- a) What is the standard clinical EEG-recording system?
- b) What benefits and drawbacks a considerable increase of the number of EEG electrodes brings?

4)

- a) What VCG system is most insensitive to misplacement of electrodes and why?
- b) What are the benefits and drawbacks of this system in clinical practice compared to other VCG systems?

5)

- a) What and how do the biomagnetic measurements measure?
- b) What are the main differences between the measurements of electroencephalography, EEG and magnetoencephalography, MEG?