

# Medical biophysics 2

2019

## Topic list #2

### Topics asked in the second midterm

#### A) Lectures: weeks 6–9

- Bioelectric phenomena (III/4.)
- Sound, ultrasound (II/2.4. and VIII/4.2.)
- Biophysics of sensory organs, vision, hearing (IV.)
- Building blocks of life (I/4)

Sources required for preparation:

- Lectures: everything told and written by the lecturer including the demonstrated experiments and the projected material, as well as the lecture slides uploaded to the website
- The Textbook (Damjanovich–Fidy–Szöllősi: Medical Biophysics): all chapters shown in brackets

#### B) Laboratory Practices: weeks 6–9

- Pulse generator (Lab Manual: 22.; Textbook: VII/1.7. and IX/4.)
- Audiometry (Lab Manual: 25; Textbook: II/2.4., IV/3. and VII/3.)
- Isotope diagnostics (Lab Manual: 12.; Textbook: II/3.2.4. and VIII/3.2.)
- ECG (Lab Manual: 27.; Textbook: VII/2.1.)

Sources required for preparation:

- Laboratory practices: material told and written by the lab teacher and/or TA including the demonstrated experiments and the projected material, as well as the individual measurements
- The evaluation and drawings/graphs prepared for the lab report (according to the tasks listed on the website)
- The Lab Manual (Kellermayer: Medical Biophysics Practices): all chapters shown in brackets
- The Textbook (Damjanovich–Fidy–Szöllősi: Medical Biophysics): all chapters shown in brackets

#### C) Calculation Problems:

- Lab Manual: 61, 73, 74, 76-80, 88, 89, 92, 93
- Pulse generator further calculations: [all of them](#)
- Audiometry further calculations: [all of them](#)
- Isotope diagnostics further calculations: [all of them](#)
- ECG further calculations: [all of them](#)

Sources required for preparation:

- The Lab Manual (Kellermayer: Medical Biophysics Practices): chapter 31: "Problems"
- .pdf documents under the "Homework problems" tab of the subject on the website

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[Besides everything mentioned above, we assume that you know – even though we will not explicitly ask – the complete material of the "Mathematical and Physical Basis of Medical Biophysics" and the "Medical biophysics I" subject](#)

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The form of the midterm is a written test containing open questions about theory, labs, drawings, and calculations. One may partake in the midterm only if a **passport** or **residence card** is presented. One may use a **pen** with blue ink (for drawings: **pencil**), a non-programmable **calculator** that cannot store textual information in its memory, and a **ruler** during the midterm – all these have to be provided for by oneself. Formula collections are provided by the department; own copies may not be used. Results of the midterm will be announced by the lab teacher.