1. Describe as a block diagram a *generalized measurement system* of physiological signals. Describe the data and information flow, name the functional components and state their main function. Apply the general schema of the recording system to the ECG recording.

2. Describe (draw) a typical *ECG signal waveform*, name its components and argue why this typical waveform is usually observed. Give examples what kind of clinical information about the functioning of the heart muscle can be obtained with the ECG?

3. Clarify, why and how you as a biomedical engineer must be aware of *noise problem* in the recording of physiological signals.

4. Describe how you can model with *intuitive concepts* the generation of the ECG.

5. Explain the principle of medical *tomographic imaging system*. Name what kinds of tomography imaging modalities there are in clinical use?

6. Explain principle of the *pulse-echo ultrasound imaging system*. State why ultrasound is so popular (benefits) in medical practice.

7. Clarify the concepts of *forward and inverse problems* and the role of modelling in solving these problems. Give an illustrative example of the use of both problems from biomedical field.

8. Describe as a block diagram an *automatic control system* based on a closed-loop negative feedback system. Apply this schema to an artificial cardiac pacemaker.