

## **SUBJECTS FOR THE SECOND MIDTERM TEST BIOPHYSICS I. (DENTISTRY) 2017.**

### **Radiations**

#### *Absorption of light*

light scattering  
the law of attenuation, differential form, integral form  
attenuation (absorption) coefficient ( $\mu$ ), half-value thickness (D)  
Lambert-Beer law

#### *Luminescence*

relation of absorption and emission spectrum, Stokes rule, Kasha's rule  
fluorescence; phosphorescence  
lifetime, quantum yield  
spectrofluorimetry  
light sources based on luminescence, flame photometer

#### *Laser*

preconditions to produce laser light; stimulated (induced) emission; generation of laser light  
properties of laser light; comparison of laser light and spontaneously emitted light  
types of lasers

### **Topics from laboratory practices**

Microscopy

Light emission

Resonance

**Chapters:** *Damjanovich-Fidy-Szöllősi:* II/2.2.4, II/2.2.5, II/2.2.6, II/2.2.7, II/2.2.8, II/2.3.1, II/2.3.2, VI/3.1, VI/3.3, IX/1

*Lab. manual:* 2, 5, 21

*Problems:* 9, 10, 11, 12, 13, 20, 21, 39, 40 further calculations: Microscopy, Light emission,

Resonance 1-5