

**SUBJECTS FOR THE SECOND MIDTERM TEST
BIOPHYSICS I. (DENTISTRY) 2015.**

Radiations

Light scattering

Biological effects of light

penetration distance

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

medical application of lasers

Thermal radiation

absolute black body

emission spectrum of thermal radiation

Stefan-Boltzmann law; Wien's law

light sources based on thermal radiation

Emission of human body, telethermography

X-radiation

Principle of production of X-radiation

Medical X-ray tube

The X-ray spectra

Origin of Bremsstrahlung, parameters affecting Bremsstrahlung

Origin of characteristic X-rays

Topics from laboratory practices

measurements on the 6th and 7th weeks

Light absorption

Optics of the eye

Nuclear medicine

Chapters: *Damjanovich-Fidy-Szöllősi:* II/2.2, II/2.3, II/3.1.1- II/3.1.4., VIII/2.2, IX/1
 Lab. manual: 6, 8, 9, measurements on the 6th and 7th weeks
 Problems: 9, 10, 11, 13, 15, 16, 17, 20, 21, 39