

ELT-61106 Human Anatomy and Physiology

Mid-term exam 13.10.2015

Aim at constructive and compact answers. Use clear handwriting. Use pencil. Use graphs, if possible. Draw a margin on the exercise papers.

1. **Answer graphically** to the following problems (max. 10 points):
 - a) **Draw** a schematic figure of the anatomy of the ear, and briefly **explain** how the sound wave is propagated through the ear and what the role of each anatomical structure in hearing is.
 - b) **Draw** a schematic figure of different motor units and briefly **explain** what role of the motor unit is playing in muscle contraction.

2. **Explain** briefly the following physiological concepts (max. 10 points)
 - a) negative feedback
 - b) hypertonic and hypotonic solutions
 - c) osteoporosis
 - d) receptive field
 - e) lateral inhibition

3. **Describe** the following neural transmission stages phase-by-phase (max 15 points):
 - a) transmission of the signal as a propagation of action potential in presynaptic cell
 - b) transmission of the signal at chemical synapses
 - c) generation of the action potential in the postsynaptic cell as a response to synaptic stimulation

4. **Describe** the integrated response and regulation of the body to the acute stress. (max. 15 points)