

PRACTICAL TASKS IN HUMAN PHYSIOLOGY – DENTAL MEDICINE STUDENTS

WINTER SEMESTER - 2018/2019 ACADEMIC YEAR

WEEK	TOPIC
1 17.09.-23.09. 3 acad. hours	General physiology of excitable systems. The living organism. Homeostasis. Irritability and excitability of living organism. (Seminar Questions NN 1,2, 3, of the Examination Synopsis.) Practical tasks: 1. Elaboration of a frog neuromuscular preparation. 2. Galvani's experiments. 3. Mateucci's experiment. 4. Types of stimuli. 5. Determination of the threshold of the stimulus (both direct and indirect) as applied to a muscle.
2 24.09-30.10. 3 acad. hours	General physiology of excitable systems. Excitation and excitability. Physiology of the nerve cells and peripheral nerves. Functions of the nervous system. (Seminar questions NN 3, 5 of the Examination Synopsis.) Practical tasks: 1. Determining the relationship between the response grade and stimulus strength (voltage/frequency). 2. The effect of cold on the excitability of the frog sciatic nerve. 3. Electroneurogram (ENG) of a frog mixed nerve (the sciatic nerve). 4. Determining the conduction velocity of different nerve fibres of the sciatic nerve. 5. Relationship between intensity (I) and duration (t) of the threshold stimulus causing an electrical response of the nerve (The Horveg-Weiss curve).
3 01.10.-07.10. 3 acad. hours	General physiology of excitable systems. Synapses. Reflex activity of the nervous system. Unconditioned reflexes. (Seminar Questions 4, 6 of the Examination Synopsis). Practical tasks: 1. Testing a reflex arc. 2. Measurement of the reaction time (after Turk). 3. Irradiation of excitation in the CNS. 4. The effect of Strychnine on the CNS. 5. The effect of narcosis on reflex activity.
4 08.10-14.10. 3 acad. hours	General physiology of excitable systems. Nerve centres. Unconditioned reflexes (continued). Clinically important reflexes. (Seminar questions NN 6 of the Examination Synopsis). Practical tasks: 1. Reflexes in a spinal frog. 2. Investigating frog segment reflexes. 3. Clinically important reflexes. 4. Examination of the papillary reflex to light, convergence and accommodation. 5. The orthostatic test.
5 15.10-21.10. 3 acad. hours	General physiology of excitable systems. Conditioned reflexes. The electroencephalography (EEG). (Seminar Questions NN 6, 7, 68 of the Examination Synopsis). Practical Tasks: 1. Conditioned reflexes in animals. 2. Conditioned reflexes in man. 3. The EEG – a method for recording the electrical activity of the brain.
6 22.10-28.10. 3 acad. hours	General physiology of excitable tissues. Colloquium on the Chapter "General physiology of excitable tissues". . (Seminar questions NN 1, 2, 3, 4, 5, 6, 7, 8 of the Examination Synopsis).
7 29.10-04.11. 3 acad. hours	Blood. Components and function. Blood types. (Seminar questions NN 21, 23 of the Examination Synopsis). Practical tasks: 1. Taking blood. 2. Haematocrit determination. 3. The erythrocyte sedimentation rate (ESR) by the Westergren method. 4. Determination of blood types.
8 05.11.-11.11. 3 acad. hours	Blood. Erythrocytes. Haemoglobin. (Seminar Questions NN 22 of the Examination Synopsis). Practical Tasks: 1. The chamber method for counting of erythrocytes. 2. Measurement of haemoglobin concentration of the blood. 3. Measurement of osmotic resistance of erythrocytes. 4. Measurement of erythrocyte indices.
9 12.11.-18.11. 3 acad. hours	Blood. Leukocytes. The Lymphatic System. (Seminar questions NN 24, 26 of the Examination Synopsis). Practical Tasks: 1. The chamber method for counting of leukocytes. 2. Differential white blood cell count. 3. Trombocyte count. 4. Electronic methods for blood cell counting.
10 19.11-25.11. 3 acad. hours	Blood. Haemostasis and coagulation. Review questions on Blood. Colloquium on the Chapter "Blood". (Seminar question N 25 of the Examination Synopsis). Practical Tasks: 1. Determination of bleeding time (after Ducke). 2. Determination of recalcification time (after Howell). 3. Determination of clotting time (after Firort).
11 26.11.-02.12. 3 acad. hours	The Endocrine System. Hormonal regulation of functions. (Seminar Questions NN 9, 10, 11, 12, 13, 14, 15, 16 of the Examination Synopsis). Practical Tasks: 1. Examination of the thyroid gland. 2. Examination of the adrenal gland. 3. Examination of the pancreas. 4. Hypoglycaemic shock in rabbit.
12 03.12.-09.12. 3 acad. hours	The Endocrine System. Hormonal regulation of functions (continued) – sex hormones. Review questions on the Endocrine system. Colloquium on the Chapter "Endocrine system". (Seminar Questions NN 17, 18 of the Examination Synopsis). Practical Tasks: 1. The Galli-Mainini Test. 2. Immunological tests for early pregnancy.
13 10.12.-16.12. 3 acad. hours	The Sensory Systems. (Seminar Questions NN 62, 63, 64, 65, 66 of the Examination Synopsis). Practical Tasks: 1. Measurement of visual acuity. 2. Perimetry testing. 3. Examination of colour vision. 4. Audiometry. 5. Acoumetry. 6. Esthesiometry. 7. Coetaneous sensation. 8. Kinesthetic sensation.
14 17.12.-23.12 3 acad. hours	The Locomotor System. Skeletal muscles. (Seminar question N 19 of the Examination Synopsis). Smooth muscles. (Seminar Question N 25 of the Examination Synopsis). Practical Tasks: 1. Recording of a single muscle contraction. 2. Recording of incomplete and complete tetanus. 3. Measurement of the specific and absolute muscle strength of a frog muscle. 4. Effect of loading on amplitude and performance. 5. Myoneural transmission- the Claude Bernard test. 6. Recording of the muscle fatigue curve from an isolated frog muscle. 7. Measurement of muscle strength. 8. Ergography.
15 24.12.-28.12 3 acad. hours	The Locomotor System. Smooth muscles. (Seminar Question N 20 of the Examination Synopsis). Practical Tasks: 1. Registration of the contractions of a smooth muscle from an isolated loop of the small intestine.

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