5. Propagation of action potentials along the nerve fibers. Refractory periods.
11. White blood cells (leukocytes). Functions of the different types of leukocytes.
19. Microcirculation and circulation in special regions: pulmonal, cerebral, myocardial and splanchnic one. Typical characteristics of the circulation in the facial region and in the oral cavity.
22. Gas exchange in the body. Composition of the inspired, alveolar and expired air. Gas diffusion through the respiratory membrane.
24. Regulation of respiration.
25. Structure and functions of the digestive system. Regulation of the gastrointestinal functions: neural and humoral control.
29. Gastric and pancreatic juice: volume, composition and regulation of the secretion.
31. Digestion and absorption of carbohydrates, lipids and proteins in the gastrointestinal tract. Regulation of intestinal absorption.
32. Liver functions.
33. Carbohydrate metabolism. Control of blood glucose level.
34. Protein metabolism. Lipid metabolism. Regulations.
40. Volume and composition of body fluids. Water and electrolyte balance in the body. Regulation of fluid-electrolyte homeostasis.
41. Acid-base balance in the body.
42. Physiology of the skin.
45. Control of calcium-phosphate balance. Calcium-phosphate balance in the teeth: typical characteristics.
46. Thyroid hormones: mechanism of action, physiological effects and control of their secretion.
47. Endocrine pancreas. Pancreatic hormones: physiological effects and control of their secretion.
49. Male reproductive function. Control of spermatogenesis and hormonal secretion.
54. Somatosensory system. Receptors, afferent pathways and central processing of information.
56. Somatic sensations in the facial region and oral cavity.
57. Auditory system. Structure and function of the ear.
59. Vestibular system. Functions of utricle, saccule and semicircular canals.
60. Olfactory and gustatory sensory systems.
62. Brainstem and cortical control of movement. Cerebellum and basal ganglia participation in the motor control.
63. Sleep and wakefulness. Electroencephalogram. Biological rhythms.
64. Autonomic nervous system. Effects of the autonomic nervous system on the activity of different organs.
65. Hypothalamus and limbic system. Physiological basis of emotions and motivations.
66. Higher functions of the nervous system. Neurophysiological basis of learning, memory and speech.
67. Physiology of exercise. Changes in the body functions during exercise and in hypo-and hyperbaric conditions, acceleration and weightlessness.

Signed by the Head of the Department of Physiology,
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