

Portal: Questions for Final Examination in Physiology (1LF, D)

The cell

1. The cell (cell membrane, nucleus, organelles, function)
2. Transport across cell membranes
3. Ionic currents underlying membrane potentials
4. Contraction in skeletal muscle
5. Sensory transduction
6. Tissue maintenance

Body fluids

1. Homeostasis
2. The blood
3. The blood cells
4. Hemostasis
5. Blood Groups
6. Mechanisms of immunity

Blood circulation

1. Electrical activity of the heart
2. The normal electrocardiogram
3. Events of the cardiac cycle
4. Function of cardiac valves, heart sounds
5. Cardiac output, regulation
6. Blood pressure in the heart, arteries, capillaries and veins
7. Exchange of materials in capillaries
8. Control of the cardiac output
9. Control of the blood pressure
10. Control of the blood volume
11. Control of the regional blood flow
12. Fetal and neonatal circulation
13. The coronary circulation
14. The circulation of the lungs
15. Cerebral circulation
16. Splanchnic circulation

The Respiratory System

1. Ventilation
2. Diffusion and transport of respiratory gases
3. Transport of oxygen in blood
4. Transport of carbon dioxide in blood
5. Control of respiration
6. pH regulation in body fluids

The Digestive System

1. Motility of the gastrointestinal system
2. Chewing and swallowing
3. Secretion in the gastrointestinal system
4. Digestion
5. Absorption in the gastrointestinal system
6. Functions of the liver
7. Metabolism of nutrients
8. Temperature regulation

The excretory system

1. The physiology of the skin
2. Glomerular filtration, its regulation
3. Processing of the filtrate in the proximal and distal tubules
4. Control of extracellular fluid osmolality

5. Control of extracellular fluid volume, sodium and potassium balance
6. Body acid-base state and its regulation
7. Renal regulation of the acid-base balance
8. Micturition

The endocrine system

1. Mechanisms of cell signaling
2. The adrenocortical hormones
3. Growth hormone, growth factors, and control of the body growth
4. Regulation of the carbohydrate metabolism
5. Hypothalamo-hypophyseal relations
6. The thyroid hormones secretion and its regulation
7. The adrenal medulla
8. Stress and Emergency Reaction
9. Control of the calcium and phosphate balance
10. Hormones of the anterior pituitary
11. Neurohypophyseal hormones
12. Endocrine and Biological Rhythms
13. Reproductive and hormonal functions of the male
14. Reproductive and hormonal functions of the female
15. The ovarian cycle
16. Physiology of pregnancy
17. Fetal and neonatal physiology

Principles of neurophysiology

1. Structure and function of nerve cells
2. Membrane Potentials
3. Synaptic Transmission
4. Integration activity of neurons
5. Reflex arc, classification of reflexes
6. Milieu of Central Nervous System

The motor system

1. Physiology of the muscle contraction
2. The neural control of movements
3. Muscle tone and its control
4. Motor functions of the spinal cord, brain stem, basal ganglia and the cerebellum
5. Cortical control of motor functions

The autonomic nervous system

1. Characteristics of sympathetic and parasympathetic action

The sensory physiology

1. Signal transformation in receptor cells and coding
2. Somatic sensations
3. Perception of pain
4. Function of the auditory system
5. The vestibular apparatus
6. Function of the visual system
7. The sense of taste and smell

Integrative function of the CNS

1. Function of the spinal cord
2. Function of the limbic system
3. Function of Cerebral Cortex
4. Intellectual functions of the brain, language
5. Mechanism of learning and memory
6. Waking and sleeping
7. Bioelectrical activity of the CNS