Questions for the oral exam in pathophysiology – general medicine

I. General pathophysiology

1. Disease and its course
2. Terminal states, cell death, death of the individual
3. Ageing
4. Aetiology of diseases
5. Intrinsic aetiological factors of diseases
6. Mutations, mutagenic factors, epigenetics
7. Autosomal hereditary diseases
8. Gonosomal hereditary diseases
9. Biological effects of radiation
10. Effects of electric current on the organism
11. Biological etiological factors
12. Chemical etiological factors
13. Effects of changes of pressure of the environment on the organism
14. General and local effects of high temperature on the organism
15. General and local effects of low temperature on the organism
16. Fever
17. Pathophysiology of thermoregulation
18. Inflammation
19. Systemic inflammatory response, sepsis
20. Autoimmunity
21. Immune deficiency
22. Allergy
23. Transplantation
24. Growth disorders
25. Disorders of the development
26. Pathophysiology of tumours
27. Aetiology of tumours
28. Stress
29. Psychosomatic diseases
30. Pathophysiology of wound healing

II. Pathophysiology of organ systems 1

1. Mechanisms of circulatory disorders
2. Inborn heart defects
3. Valvular defects
4. Arterial hypertension
5. Arrhythmias – aetiology, pathogenesis, classification
6. Disorders of impulse transfer in the heart
7. Disorders of origin of the heart impulse
8. Heart insufficiency and failure
9. Ischemic heart disease
10. Myocardial infarction and its complications
11. Atherosclerosis
12. Peripheral disorders of blood perfusion
13. Circulatory shock
14. Thromboembolic disease
15. Pulmonary hypertension
16. Haemorrhagic diatheses - disorders of haemocoagulation

17. Haemorrhagic diatheses - pathophysiology of the thrombocytes
18. Haemorrhagic diatheses – vasculopathies
19. Pathophysiology of the leukocytes
20. Disorders of proliferation of blood elements
21. Changes of erythrocyte number, classification of anaemias, anaemic syndrome
22. Anaemias caused by insufficient erythrocyte production
23. Bleeding, anaemias caused by blood loss
24. Haemolytic anaemias
25. Hypoxia
26. Respiratory insufficiency, disorders of breathing control
27. Acute respiratory distress syndrome
28. Disorders of the lung ventilation, diffusion and perfusion
29. Asthma bronchiale, chronic obstructive pulmonary disease, pulmonary fibrosis
30. Pathophysiology of manifestation of respiratory system diseases, pulmonary oedema and pleural cavity
31. Acute renal failure
32. Chronic renal failure
33. Uraemia, substitution of renal function
34. Disorders of the urinary efferent pathways
35. Pathophysiology of the muscle

III. Pathophysiology of organ systems 2

1. Mechanisms of endocrine disorders
2. Pathophysiology of the adrenal medulla
3. Hypofunction of the adrenal cortex
4. Hyperfunction of the adrenal cortex
5. Pathophysiology of the thyroid gland, goitre
6. Pathophysiology of the parathyroid gland
7. Pathophysiology of the endocrine pancreatic function
8. Pathophysiology of the adenohypophysis
9. Pathophysiology of the neurohypophysis
10. Pathophysiology of the gonads and sex hormones
11. Disorders of reproduction
12. Diabetes mellitus
13. Diabetic coma
14. Chronic complications of diabetes mellitus
15. Metabolic (Reaven’s) syndrome
16. Disturbances of glycaemia regulation
17. Acid-base balance disorders
18. Pathophysiology of the body fluid volume and osmolality
19. Oedema
20. Disturbances of calcium metabolism
21. Disturbances of sodium, potassium and chloride metabolism
22. Disorders of lipid metabolism
23. Disorders of carbohydrate metabolism
24. Disorders of protein and aminoacid metabolism
25. Disturbances of nutrition and energy metabolism, obesity
26. Lipid soluble vitamins
27. Water soluble vitamins
28. Pathophysiology of trace elements
29. Pathophysiology of the liver and biliary ducts

30. Portal hypertension, ascites
31. Icterus
32. Pathophysiology of the exocrine pancreas
33. Pathophysiology of the stomach and oesophagus
34. Pathophysiology of the intestine
35. Diarrhoea, constipation

IV. Nervous system

1. General principles, manifestations, causes and mechanisms of nervous system disorders
2. Disorders of the peripheral nerves
3. Pathophysiology of the spinal cord
4. Pathophysiology of the brain-stem and reticular formation
5. Pathophysiology of the cerebellum
6. Pathophysiology of the thalamus and hypothalamus
7. Pathophysiology of the basal ganglia
8. Pathophysiology vegetative nervous system
9. Pathophysiology of the neuromuscular transmission
10. Disorders of neurotransmitters and synaptic transmission
11. Disorders of the behaviour and affectivity
12. Pathophysiology of learning and memory
13. Disorders of symbolic functions
14. Developmental, congenital and hereditary disorders of the nervous system
15. Vascular disorders of the nervous system
16. Pathophysiology of nervous system trauma
17. Excitotoxicity, secondary brain injury
18. Metabolic, toxic, and infectious damages to the nervous system
19. Neurodegenerative and demyelinising diseases
20. Alzheimer’s disease
21. Epilepsy
22. Palsy
23. Ataxia
24. Extrapyramidal disorders, hypo- and hyperkinetic symptoms, muscle tone disorders
25. Disorders of consciousness
26. Pathophysiology of the sleep and biorhythms
27. Intracranial hypertension, brain oedema, hydrocephalus
28. Pathophysiology of the visual pathways
29. Pathophysiology of the eye
30. Pathophysiology of the somesthesia, dissociation of the sensation
31. Pathophysiology of the vestibular system
32. Pathophysiology of hearing
33. Pain and its mechanisms, processes of nociception, pain types
34. Painful syndromes, endogenous pain modulation, principles of pain treatment
35. Pain perception disorders, neuropathic pain