

## Questions for the module test 1

1. Cell injury: causes, types. Progression of cell injury. Specific and unspecific manifestations of injury.
2. Mechanisms of cell injury: ATP depletion, membrane damage, oxidative stress, DNA damage.
3. Mechanisms of cell injury: ions and fluid imbalance, endoplasmic reticulum stress. Selected examples of cell injury
4. Compensatory and adaptive mechanisms in cell injury. Cellular and subcellular adaptation.
5. Cell death: classification. Distinctive features of apoptosis, necrosis, necroptosis, autophagy, cornification, NETosis, pyroptosis.
6. Apoptosis: definition, causes, types, extrinsic pathway, stages. Role of apoptosis in physiological and pathological conditions.
7. Apoptosis: definition, causes, types, intrinsic pathway, stages. Role of apoptosis in physiological and pathological conditions.
8. Necrosis: definition, causes, mechanisms, role in human diseases. Cornification.
9. Autophagy: causes, mechanisms, role in human diseases.
10. NETosis, necroptosis, pyroptosis: causes, mechanisms, role in human diseases.
11. Acid-base balance: pH, definition, buffer systems, regulatory mechanism of lungs, kidneys, gastrointestinal tract and bones in pH control.
12. Respiratory acidosis: definition, diagnostic criteria, causes, symptoms.
13. Metabolic acidosis: definition, diagnostic criteria, causes, symptoms.
14. Respiratory alkalosis: definition, diagnostic criteria, causes, symptoms.
15. Metabolic alkalosis: definition, diagnostic criteria, causes, symptoms.
16. Hypohydration: causes, types, pathogenesis, clinical manifestations.
17. Hyperhydration: causes, types, pathogenesis, clinical manifestations.
18. Alterations in calcium balance: causes, pathogenesis, mechanisms of clinical manifestations.
19. Alterations in phosphate balance: causes, pathogenesis, mechanisms of clinical manifestations.
20. Alterations in potassium balance: causes, pathogenesis, mechanisms of clinical manifestations.
21. Alterations in magnesium balance: causes, pathogenesis, mechanisms of clinical manifestations.
22. Hypoglycemia: etiology, pathogenesis, diagnosis, treatment.
23. Diabetes mellitus type 1: definition, etiology, pathogenesis. Clinical manifestations of hyperglycemia in diabetes.
24. Diabetes mellitus type 2: definition, etiology, pathogenesis. Clinical manifestations of hyperglycemia in diabetes.
25. Other types of diabetes: monogenic, diabetes in pregnancy, diseases of the pancreas, glucagonoma and other endocrine disorders with hyperglycemia.
26. Acute complications of diabetes mellitus: causes, mechanisms, clinical manifestations.
27. Chronic complications of diabetes mellitus: causes, mechanisms, clinical manifestations.
28. Proteins metabolism disorders: causes, pathogenesis, clinical manifestations.
29. Hyperuricemia and gout: causes, pathogenesis, clinical manifestations.
30. Lipids metabolism disorders. Typical forms of lipids deficiency and lipids exceed.
31. Dyslipoproteinemia: definition, types, risk factors, causes, pathogenesis, clinical manifestations.
32. Obesity: definition, types, risk factors, causes, pathogenesis, obesity as a cause of other diseases.
33. Atherosclerosis: causes, risk factors, pathogenesis.
34. Atherosclerosis: clinical manifestation in different organs, complications, diagnostic principles.
35. Fat-soluble vitamin alterations: causes, pathogenesis, clinical manifestations.
36. Water-soluble vitamin alterations: causes, pathogenesis, clinical manifestations.
37. Arterial hyperemia: definition, causes, mechanisms, symptoms, features of microcirculation and outcomes of arterial hyperemia.
38. Venous hyperemia (congestion): definition, causes, mechanisms, symptoms, features of microcirculation and outcomes of venous hyperemia.
39. Ischemia: definition, causes, mechanisms, symptoms, features of microcirculation and outcomes of ischemia.
40. Reperfusion injury (syndrome): causes, pathogenesis, features of cell injury, role in clinical practice after revascularization.

41. Stasis: definition, causes, mechanisms, symptoms, features of microcirculation and outcomes of stasis.
42. Thrombosis: definition, causes, mechanisms, Virchow's triad. Features of microcirculation and outcomes of thrombosis.
43. Embolism: definition, causes, mechanisms of emboli formation. Types of embolisms. Microcirculation in embolism.
44. Edemas: definition, causes, mechanisms, clinical types of edemas, features of different types (e.g. nephrotic syndrome, hypothyroidism, liver insufficiency, inflammatory edema, heart failure).