**Questions for final exam Stom, test SIMU (2024-2025)**

**Introduction. Cellular pathological processes**

1. What conditions are considered favorable for the organism?
2. What conditions are considered unfavorable for the organism?
3. What conditions are necessary for the disease onset?
4. What do pathogenetic factors represent?
5. What does a pathological reaction mean?
6. What does a physiological reaction mean?
7. What does clinical pathophysiology study?
8. What does general pathophysiology study?
9. What does injury represent?
10. What are the endogenous causes of diseases?
11. What are the exogenous causes of diseases?
12. What does the pathological process include?
13. What is characteristic for the latent period of the disease?
14. What is characteristic for the period of complete disease manifestation?
15. What is characteristic for the prodromal period of the disease?
16. What is compensatory reaction?
17. What is general etiology?
18. What does the physiological regeneration represent?
19. What does the sclerosis of organ mean?
20. What is adaptive reaction?
21. What structures of cytoplasmic membrane are damaged and lead to disintegration of the cell?
22. What structures of cytoplasmic membrane are damaged and lead to disintegration of the cell?
23. What intracellular dyshomeostasis results from cessation of membrane ionic pumps function?
24. What are the consequences of annihilation of intra - and extracellular Na+ ions gradient?
25. What are the consequences of annihilation of the transmembrane Ca2+ ions gradient?
26. What are the consequences of activation of the non specific intracellular phospholipases?
27. What are the consequences of the intracellular ATP-ases activation?
28. What are the consequences of the intracellular proteases activation?
29. What are the consequences of the intracellular nucleoproteases activation?
30. What is the significance of the increased intracellular enzymes activity in the blood?

**Dystrophy, apoptosis, necrosis, tissue pathologic process**

1. What are the general causes of energy depletion that trigger cell dystrophy?
2. What pathological processes are developed in dystrophy of desmodontal structures?
3. What are the organs that most often are prone to develop lipid dystrophy?
4. What are the etiological factors of lipid dystrophy?
5. What are the pathogenic mechanisms of lipid dystrophy?
6. What are the pathogenic mechanisms of lipid dystrophy?
7. What is the pathogenetic factor of fatty liver?
8. What are the consequences of dystrophy?
9. What is the biological significance of apoptosis?
10. What cells are involved in apoptosis?
11. What is characteristic for the first period of apoptosis?
12. What is characteristic for the second period of apoptosis?
13. What is characteristic for the final period of apoptosis?
14. What conditions are necessary for apoptosis?
15. What are the consequences of exaggerated apoptosis?
16. What are the general consequences of necrosis for the organism?
17. What are the general consequences of the cell necrosis for the whole organism?
18. What are the manifestations of cell necrosis?
19. What are the local consequences of necrosis?
20. What factors can cause necrosis of the oral cavity?
21. In what conditions can develop atrophy of the mouth mucosa?
22. What are the trigger factors for development of hypertrophy?
23. What atrophy is considered as physiological?
24. What does the sclerosis of organ mean?
25. What factor induces sclerosis?
26. Which structures from oral cavity have high regenerative potential?
27. What are the pathogenetic mechanisms of scleroderma in oral cavity?

**Fibrinolytic system**

1. What are the conditions for formation of parietal thrombus?
2. What are the mechanisms of primary hemostasis?
3. What are the mechanisms of secondary hemostasis?
4. What is the physiological role of fibrinolytic system?
5. What are the main components of fibrinolytic system?
6. What are the effects of fibrinolysis?
7. What are the causes of hypercoagulation?
8. What are the pro-coagulant factors?
9. In what condition can develop insufficiency of anti-coagulant system?
10. When can develop heparin deficiency?
11. In what blood vessels there is more frequently thrombi formation?
12. What are the consequences of thrombosis in the arteries with their obstruction?
13. What can be pathological evolution of thrombus?
14. What pathological processes can lead to development of vascular purpura?
15. What does represent thrombocytopathy?
16. What does represent the hemorrhagic syndrome of plasmatic origin?
17. What are the causes for thrombus development?

**Microcirculatory pathologic disorders**

1. What ions have vasoconstrictive effect?
2. What ions have vasodilatory effect?
3. What is characteristic for neurotonic mechanism of arterial hyperemia?
4. What is characteristic for neuroparalytic mechanism of arterial hyperemia?
5. What mechanisms are specific for functional arterial hyperemia?
6. What are the hemodynamic changes of arterial hyperemia?
7. What are the metabolic changes of arterial hyperemia?
8. What are the external changes of arterial hyperemia?
9. What are the consequences of arterial hyperemia?
10. What etiological factors are responsible for developing of vinous hyperemia?
11. What etiological factors are responsible for developing of vinous hyperemia?
12. What is the main link of venous hyperemia?
13. What is the cause of venous hyperemia?
14. What are the hemodynamic changes of venous hyperemia?
15. What are the metabolic changes in venous hyperemia?
16. What are the external manifestations of venous hyperemia?
17. What are the external manifestations of venous hyperemia?
18. What are the pathogenetic mechanisms of edema in venous hyperemia?
19. What are the pathogenetic mechanisms of external changes in venous hyperemia?
20. What are the consequences of venous hyperemia?
21. What is characteristic for the development of ischemia?
22. What are the pathogenetic mechanisms of ischemia?
23. What are the hemodynamic changes of ischemia?
24. What are the metabolic changes in ischemia?
25. What are the external manifestations of ischemia?
26. What are the general consequences of ischemia are:
27. What does the embolism represent?
28. What types of embolisms are considered as endogenous?
29. What types of embolisms are considered as exogenous?
30. How are classified emboli by the direction of their circulation?
31. What are the causes of air embolism?
32. In what conditions can develop gaseous embolism?
33. What are the local consequences of embolism?
34. What are the pathogenetic factors of capillary stasis?
35. What are the pathogenetic factors of capillary stasis?
36. What are the manifestations of stasis?
37. What are the manifestations of stasis?
38. What are the manifestations of stasis?

**Metabolic imbalance**

1. What is normal blood glucose level?
2. How does carbohydrate metabolism change in liver failure?
3. How does lipid metabolism change in liver failure?
4. How does protein metabolism change in liver failure?
5. Lack of what digestive enzymes lead to lipid maldigestion?
6. Lack of what digestive enzymes lead to protein maldigestion?
7. What are the causes of carbohydrate malabsorption?
8. What are the compensatory reactions in hyperglycemia?
9. What are the compensatory reactions in hypoglycemia?
10. What are the metabolic and digestive disorders in maldigestion of proteins?
11. What lipid substances are synthesized in the body?
12. What are the metabolic consequences of excessive consumption of fat?
13. What are the metabolic consequences of lipid maldigestion?
14. What are the possible consequences of hyperglycemia in healthy persons?
15. What are the possible consequences of hypoglycemia in healthy persons?
16. What are the consequences of excessive carbohydrate intake?
17. What are the consequences of lipid deficiency in the diet?
18. What are the factors that may cause hyperlipidemia?

**Hydroelectrolytic imbalance**

1. What disorders can be associated with hyperkalemia?
2. From what value of K+ ion concentration in the blood is hypokalemia considered?
3. From what value of K+ ion concentration in the blood is hyperkalemia considered?
4. From what value of Ca++ ion concentration in the blood is hypocalcemia considered?
5. From what value of Ca++ ion concentration in the blood is hypercalcemia considered?
6. From what value of Na+ ion concentration in the blood is hyponatremia considered?
7. From what value of Na+ ion concentration in the blood is hypernatremia considered?
8. What can be the causes of hypokalemia?
9. What are the causes of hypercalcemia?
10. What are the causes of hyperphosphatemia?
11. What are the causes of hypocalcemia?
12. What are the clinical manifestations of hypercalcemia?
13. What are the main manifestations of hyperphosphatemia?
14. What are the main manifestations of hypophosphatemia?
15. What is the cause of hypophosphatemia?
16. What are the main pathogenetic mechanisms of hypercalcemia?
17. What are the main pathogenetic mechanisms of hypernatremia?
18. What are the main pathogenetic mechanisms of hyponatremia?
19. What are the main pathophysiological mechanisms of hypocalcemia?

**Inflammation**

1. What are exogenous infectious pyrogenic factors?
2. What are exogenous non-infectious pyrogenic factors?
3. What are general manifestations of inflammation?
4. What are the cellular sources of proliferation in the inflammatory focus
5. What are the characteristics of inflammatory stasis?
6. What are the hallmarks of serous exudate?
7. What are the manifestations of cellular alterations in the inflammatory focus?
8. What is the definition of fever?
9. What is the hallmark of purulent exudate?
10. What are the mechanisms of phagocytosis?
11. What is the pathogenesis of inflammatory venous hyperemia?
12. What is the result of proliferation in the inflammatory focus?
13. What are the primary endogenous pyrogenic factors?
14. What are the secondary endogenous pyrogenic factors?
15. What are the effects of mediators released from neutrophils?
16. What chemotactic factors are released form basophiles?
17. What is the sequence of processes in the synthesis of prostaglandins?
18. What are the biological effects of IL-1?
19. What inflammatory mediators are released from eosinophils?
20. What inflammatory mediator is released from thrombocytes?
21. What inflammatory mediators are released from lymphocytes?
22. What are the biological effects of active complement fraction?
23. What are the kinin effects in the inflammatory focus?

**Hypersensitivity disorders**

1. What is the feature of delayed hypersensibility?
2. What is the feature of immediate hypersensibility?
3. What are the characteristics of complete antigen?
4. What are the characteristics of incomplete antigen?
5. What are the characteristics of type I allergic reactions?
6. What are the end-effectors in anaphylactic allergic reactions?
7. What are the cells involved in anaphylactic allergic reactions?
8. How can be performed the specific hyposensitisation in anaphylactic reaction?
9. What are the characteristics of type II allergic reactions?
10. What is the pathogenesis of allergic reaction type II?
11. What are the final effects in type II allergic reactions?
12. What can be the antigen in type II allergic reaction?
13. What disorders underlie on the basis of II allergic reactions?
14. What are the characteristics of allergic reactions type II?
15. What is the mechanism of cytolysis in allergic reactions type II (cytotoxic, cytolytic)?
16. What are local manifestations in allergic reaction type III?
17. What are the characteristics of type III allergic reaction?
18. What are the effects of mediators involved in the allergic reaction type III?
19. What are the characteristics of type III allergic reaction?
20. What are the pathogenetic factors involved in pathochemical phase of allergic reactions type III?
21. What structures are frequently involved in allergic reactions type III?
22. What does represent allergic reactions type IV?
23. What is the final effect of allergic reactions type IV?
24. What mediators are produced in the mast cells via cyclooxygenase pathway?
25. What mediators are produced in the mast cells via lipoxygenase pathway?
26. What are the mediators of pathochemical phase of allergic reactions type IV?
27. What is the pathogenesis of physiological phase in allergic reactions type IV?

**Pathophysiology of blood**

* + - 1. What are the parameters of normovolemia?
      2. In what states is simple hypovolemia (normovolemia) found?
      3. What are the parameters of oligocyte hypervolemia?
      4. In what state is oligocythemic hypovolemia found?
      5. What are the parameters of polycythemic hypovolemia?
      6. In what state is polycythemic hypovolemia found?
      7. What are the parameters of oligocythemic hypervolemia?
      8. In which states is oligocythemic hypervolemia found?
      9. What are the parameters of polycythemic hypervolemia?
      10. In what conditions is polycythemic hypervolemia found?
      11. Which types of anemias are based on decreased erythropoiesis as a pathogenetic mechanism?
      12. Which types of anemias have as their pathogenetic mechanism the disturbance of nucleic acid synthesis and therefore hemacyte maturation?
      13. What type of anemia has as its underlying pathogenetic mechanism a disorder of hemoglobin biosynthesis and therefore hemacyte maturation?
      14. Which types of anemias are based on dysregulation of erythrocyte hemolysis as a pathogenetic mechanism?
      15. What are the pathogenetic mechanisms that explain the pallor of the skin, mucous membranes and nail beds in anemia?
      16. Which anemias are characterized by MCV (mean erythrocyte volume) > the reference values?
      17. What are the types of anemia in which the MCH (mean hemoglobin content in an erythrocyte) < the normal reference values?
      18. Which laboratory indices establish the diagnosis of iron deficiency anemia?
      19. Which laboratory tests establish the diagnosis of iron deficiency anemia?
      20. Which pathologies are responsible for dysregulation of vitamin B 12 metabolism ?
      21. Which pathologies are responsible for dysregulation of vitamin B 12 metabolism
      22. What are the clinical manifestations of pernicious vitamin B 12 deficiency anemia ?
      23. What are the clinical manifestations of folic acid anemia?
      24. What are the peripheral blood manifestations in anemia B12  deficient?
      25. What are the peripheral blood manifestations in folic acid anemia?
      26. What are the manifestations of agranulocytosis in the oral cavity?
      27. What are the manifestations of agranulocytosis in the oral cavity?
      28. What are the manifestations of B12-deficient anemia in the oral cavity?
      29. What are the manifestations of B12-deficient anemia in the oral cavity?
      30. What are the manifestations of hemolytic anemia in the oral cavity?
      31. What are the manifestations of hemolytic anemia in the oral cavity?
      32. In what pathologic conditions can neutrophilia occur?
      33. What causes neutrophilia?
      34. What is is neutrophilia with "nuclear shift to the left" ?
      35. What is neutrophilia with "nuclear right shift"?
      36. In which pathologic conditions can secondary absolute lymphocytosis occur?
      37. In which pathologies can secondary absolute lymphocytosis occur?
      38. Under what pathologic conditions can monocytosis occur?
      39. What is agranulocytosis?
      40. In what pathologic conditions can agranulocytosis occur?
      41. What are the manifestations of iron deficiency anemia in the oral cavity?

Cardiovascular pathophysiology

1. What are the signs of systolic heart failure?
2. What are the signs of vascular insufficiency?
3. What causes heart failure due to heart volume overload?
4. What are the characteristic manifestations of left heart failure?
5. What are the characteristic manifestations of right heart failure?
6. What are the characteristic manifestations of right heart failure?
7. What are the characteristic manifestations of right heart failure?
8. What are the characteristic manifestations of right heart failure?
9. What are the immediate compensatory cardiac reactions in heart failure?
10. What are the immediate compensatory cardiac reactions in heart failure?
11. What are the immediate extracardiac compensatory mechanisms in heart failure?
12. What are the immediate compensatory cardiac reactions in heart failure?
13. What are the immediate extracardiac compensatory mechanisms in heart failure?
14. What is one of the immediate extracardiac compensatory mechanisms in heart failure?
15. What are the late extracardiac compensatory mechanisms in heart failure?
16. What is one of the late extracardiac compensatory mechanisms in heart failure?
17. What are the immediate extracardiac mechanisms of compensation in circulatory failure?
18. What are the late extracardiac mechanisms of compensation in circulatory failure?
19. What late extracardiac compensatory mechanisms are included in circulatory failure?
20. How does the structure of hypertrophic myocardium change?
21. What are the consequences of venous stasis in circulatory insufficiency?
22. What are the consequences of venous stasis in circulatory insufficiency?
23. What are the consequences of venous stasis in circulatory failure?
24. How is cardiac excitability disturbed?
25. How is cardiac excitability disturbed?
26. How is cardiac automatism disturbed?
27. How is cardiac automatism disturbed?
28. What causes cardiac automaticity disorder?
29. What causes cardiac automaticity disorder?
30. What are the forms of cardiac excitability disorders?
31. What are the forms of myocardial conduction disorders?
32. What causes resistance overload of the heart?
33. What are the conditions associated with resistance overload of the heart?
34. What are the pathogenetic factors of renal arterial hypertension?
35. What are the pathogenetic factors of renal arterial hypertension?
36. Which cardiac compartments suffer hyperfunction in hypertensive disease?
37. What are the consequences of venous stasis in the liver?
38. What are the pathogenetic factors of cardiac edema?
39. What causes intracardiac conduction dysregulation?
40. What are the pathogenetic factors of renal arterial hypertension?
41. Which heart compartment hyperfunction occurs in hypertensive disease?
42. In which endocrine diseases does secondary hypertension occur?
43. What causes heart volume overload?
44. What are the compensatory reactions in long-term hypoxia?
45. What are the compensatory reactions in long-term hypoxia?
46. What are the consequences of venous stasis in circulatory insufficiency?
47. What are the consequences of venous stasis in circulatory insufficiency?
48. Where does venous stasis develop in left ventricular failure?
49. What is the consequence of venous stasis in the liver?
50. What are the consequences of venous stasis in the liver?
51. What are the pathogenetic factors of cardiac edema?
52. What are the pathogenetic factors of cardiac edema?
53. What is one of the pathogenetic factors of cardiac edema?

**Pathophysiology of the respiratory system**

1. What is hypercapnia?
2. What is hypoxemia?
3. What is lung restriction?
4. What is dyspnea?
5. What is expiratory dyspnea?
6. What is inspiratory dyspnea?
7. Which disorders lead to extraparenchymal restriction?
8. Which disorders lead to extraparenchymal restriction?
9. What causes restrictive lung disease?
10. What causes restrictive lung disease?
11. What is intra-parenchymal lung restriction?
12. What is pulmonary obstruction?
13. What factors can lead to upper airway obstruction?
14. What causes upper airway obstruction?
15. What factors can lead to lower airway obstruction?
16. What are the consequences of hypoxia?
17. What are the changes in respiratory hypoxia?
18. What is hyperpnea?
19. What is polypnea?
20. What is bradypnea?
21. What is hyperventilation?
22. What causes extrapulmonary restriction?
23. What causes intraparenchymal restrictive lung disease?
24. What is pulmonary obstruction?
25. What is asphyxia?
26. What changes in arterial blood gas composition are seen in hyperventilation?
27. What changes in acid-base balance are seen in hyperventilation?
28. What is hypoventilation?
29. What changes in alveolar air composition are seen in hypoventilation?
30. What changes in arterial blood gas composition are seen in hypoventilation?
31. What factors can cause upper airway obstruction?
32. What factors can cause lower airway obstruction?
33. What factors can cause lower airway obstruction?
34. What causes deep and slow (stenotic) breathing?
35. What causes deep and slow (stenotic) breathing?
36. What causes deep and slow (stenotic) breathing?
37. What causes deep, slow (stenotic) breathing?
38. Which biologically active substances have a bronchoconstrictor effect?
39. Which biologically active substances have a bronchoconstrictor effect?
40. Which biologically active substances have a bronchoconstrictor effect?
41. Which biologically active substances have a bronchoconstrictor effect?
42. What changes in acid-base balance are seen in hyperventilation?
43. What changes in acid-base balance are seen in hypoventilation?

**Pathophysiology of the digestive system**

1. How does carbohydrate metabolism change in liver failure?
2. How does lipid metabolism change in liver failure?
3. How does protein metabolism change in liver failure?
4. How does stomach tone and motility change in hyperchlorhydria?
5. How does stomach tone and motility change in hypochlorhydria?
6. How is stomach outlet function affected in hypersecretion with hyperacidity?
7. Lack of which digestive enzymes leads to lipid maldigestion?
8. Lack of which digestive enzymes leads to protein maldigestion?
9. What are the consequences of the absence of HCl in gastric juice?
10. What are the digestive changes in bile secretion insufficiency?
11. What are the digestive disorders in case of salivary amylase deficiency?
12. What are the factors involved in stomach ulcerogenesis?
13. What are the manifestations of intestinal autointoxication?
14. What are the manifestations of intestinal autointoxication?
15. What causes pathologic hyposalivation?
16. What exogenous factor causes stomach hypersecretion?
17. What exogenous factor causes stomach hypersecretion?
18. What exogenous factor causes stomach hypersecretion?
19. What endogenous factor causes stomach hypersecretion?
20. What endogenous factor causes stomach hypersecretion?
21. What causes exocrine insufficiency of the pancreas?
22. What causes intestinal autointoxication?
23. What are the consequences of dietary lipid deficiency?
24. What are the local manifestations of glossalgia?
25. What are the metabolic and digestive disorders in protein maldigestion?
26. What are the metabolic consequences of lipid maldigestion?
27. What can cause achlorhydria?
28. What can cause intestinal autointoxication?
29. What can cause pathologic hypersalivation?
30. What can cause steatosis?
31. What can be the consequences of disaccharide maldigestion?
32. What can be the consequences of lipid maldigestion?
33. What can be the consequences of protein maldigestion?
34. The consequences of protein maldigestion?
35. What can be the consequences of vomiting?
36. What can cause carbohydrate maldigestion?
37. Which carbohydrates can be absorbed from the gastrointestinal tract?
38. What digestive changes can be seen in exocrine pancreatic insufficiency?
39. What conditions can lead to ulcerative changes of the oral mucosa?
40. What are the consequences of insufficient pancreatic secretion?
41. What are the oral manifestations of infectious hepatitis?
42. What are the biochemical manifestations of severe cholemia?
43. Which substances are affected in large bowel disorders?
44. Which substances are affected in small bowel mucosal disorders?
45. What factors lead to intestinal maldigestion?
46. What is acholia?
47. What is colemia?
48. What are the digestive disorders in the absence of salivary amylase?
49. What is hypersalivation?
50. What can cause pathologic hypersalivation?

**Pathophysiology of the renal system**

1. What factors cause decreased water reabsorption in the distal and collecting tubules?
2. What factors cause decreased water reabsorption in the distal and collecting tubules?
3. What factors cause decreased distal Na ion reabsorption?
4. What condition causes tubular proteinuria?
5. What condition causes tubular proteinuria?
6. What factors stimulate renin secretion?
7. What factors stimulate renin secretion?
8. What stimulates renin secretion?
9. What are the endocrine functions of the kidney?
10. What are the endocrine functions of the kidney?
11. What are the pre-renal causes of acute kidney failure?
12. What are the pre-renal causes of acute kidney failure?
13. What is the underlying cause of acute kidney failure?