


**МИНИСТЕРСТВО ОБРАЗОВАНИЯ И НАУКИ
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Зав. кафедрой, к.м.н., доц. Сакибаев К.Ш.

“УТВЕРЖДАЮ” 
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**LIST OF QUESTIONS
FOR THE 3TH MODUL
IN HISTOLOGY, CYTOLOGY AND EMBRYOLOGY**

THE CARDIOVASCULAR SYSTEM. ORGANS OF HEMATOPOIESIS AND IMMUNOGENESIS.

1. Sources of development of the cardiovascular system.
2. The heart. Morphology of the membranes of the heart.
3. The general principle of the structure of the arteries.
4. Types of hemocapillaries
5. Histological structure of the veins.
6. Morphology of the vessels of the lymphatic system
7. How are the arteries classified?
8. What is included in the concept of "vessels of the microcirculatory bed"?
9. Morphofunctional features of the veins, their differences from the arteries.
10. The shells of the heart and their tissue composition.
11. Age-related structural features of the heart.
12. Histological structure of the heart shell and its tissue composition.
13. Functional significance and structural features of the contractile and conductive muscle tissue of the myocardium.
14. The main stages of the formation of hemacytopoiesis and immunocytopoiesis in phylogeny and ontogenesis.
15. Classification of hematopoietic organs.
16. General morphofunctional characteristics of the hematopoietic organs.
17. The concept of a specific microenvironment in the organs of hematopoiesis.
18. Red bone marrow: development, structure and functions.
19. The thymus is the central organ of lymphocytopoiesis. Development, structure, and function. Age-related and accidental thymus involution.
20. Peripheral organs of hematopoiesis.
21. List the non-hematopoietic cells of the red bone marrow and their significance.
22. What are the differences between age-related and accidental thymus involution?
23. What functions do the lymph nodes perform?
24. Where in embryogenesis does hemocytopoiesis first begin? What blood cells are formed in this case?
25. In which organs does hemocytopoiesis occur during the embryonic period, and in which stages is it isolated?
26. In which organs does hemocytopoiesis occur in the postembryonic period?
27. What is the difference between embryonic hemocytopoiesis and postembryonic hemocytopoiesis?
28. What morphological changes are observed in the cells of the erythropoietic series in postembryonic erythropoiesis and what are the intermediate stages called?
29. Name the development of granulocytes and their accompanying changes in the nucleus, cytoplasm.
30. Where and through what stages does platelet formation take place in adults?
31. Where and how are monocytes formed?
32. List non-hematopoietic cells of k
33. Bone marrow cells.
33. What is the difference between age-related and accidental thymus involution?

34. Peripheral organs of hematopoiesis
35. What immunocompetent cells are involved in the recognition of antigens?
36. What functions do the lymph nodes perform? THE

ENDOCRINE SYSTEM

1. The concept of hormones, target cells and their receptors.
2. General morphofunctional characteristics of the endocrine glands.
3. The hypothalamus as the central organ of the endocrine system.
4. Pituitary gland. Sources of development. Micro-and ultramicrostructure and cytophysiology of pituitary cells.
5. Hypothalamic-pituitary relationship.
6. Epiphysis. Sources of development, histological structure and functions of the epiphysis. Source of development, histological structure and function of the thyroid gland.
7. Source of development, histological structure and functions of the parathyroid gland.
8. Source of development, histological structure and function of the adrenal glands
9. Name the main neurosecretory nuclei of the anterior and mediobasal hypothalamus. What hormones and mediators do they produce?
10. What are the features of the micro-and ultrastructure of the cells of the anterior pituitary gland? What hormones do they produce?
11. Where are the hormones that accumulate and are released in the posterior pituitary gland synthesized?
12. What is the origin, structure, and histophysiology of the epiphysis?
13. From what sources do the structural components of the thyroid gland develop?
14. Tell us about the development, structure, function and age-related changes of the parathyroid glands.
15. From what sources does the cortical and medullary substance of the adrenal glands develop?
16. According to what principles does it classify the organs of internal secretion?
17. What structural features are characteristic of the endocrine glands?
18. From what embryonic sources do various endocrine glands develop?
19. What is the structure of the neurosecretory cells of the hypothalamus? What do they secrete?
20. What is the structure of the pituitary gland and its connection with other endocrine glands of the body?
21. What is the structure of the epiphysis and its role in neuroendocrine regulation?,
22. What is the diffuse endocrine system?
23. What structural features are characteristic of the endocrine glands?
24. How is the thyroid gland built? What is its role in the body?
25. What phases of activity are distinguished in the structural and functional unit of the thyroid gland?
26. What is the microscopic structure of the adrenal gland and its role in the body?
27. What are the ultrastructural, cytochemical and functional features of the cells of the adrenal cortex?

DIGESTIVE SYSTEM

1. Describe the gill apparatus and its derivatives.
2. What are the stages of formation of the primary oral cavity?
3. What are the stages of formation of the bottom of the oral cavity?
4. What is the tissue composition of the oral mucosa?
5. What is the structure of the tonsils?
6. The embryonic development of the language, the terms and stages of the formation of its various structures.
7. What is the general plan of the structure of the organs that make up the digestive "tube"?
8. What is the tissue composition of the mucous membrane and its morphofunctional features in the oral cavity?
9. What are the features of the structure of the tongue, gums?
10. What are the general morphofunctional features and features of large salivary glands?
11. What is the structure and location of the tonsils, their importance in protective reactions?
12. What are the structural features of the various parts of the esophagus?
13. Structure and development of milk and permanent teeth.
14. What is the structure of the mucous membrane of the dorsal surface of the tongue?
15. What is the structure of the mucous membrane of the ventral surface of the tongue?
16. Features of blood supply innervation of the tongue.
17. Sources and features of the development of the salivary glands.
18. What is the tissue composition of the salivary glands, features of morphological structures?
19. Tell us about the structure of the fundal part of the stomach.

20. What morphological features allow you to distinguish the pyloric part of the stomach from the fundal part?
21. What stomach glands do you know?
22. What is the general characteristic of the gastric membranes?
23. What are the features of the structure of the mucous membrane of different parts of the stomach?
24. What are the morphofunctional differences of the own, cardiac and pyloric glands?
25. What are the cytochemical and cytophysiological features of the exocrine cells of the stomach?
26. What are the features of the structure of the mucous membrane in different parts of the small intestine?
27. What morphofunctional features are characteristic of the small intestine?
28. What are the features of the structure of the mucous membrane in different parts of the small intestine?
29. What is the structure of the villi – crypt system, as a structural functional unit of the small intestine?
30. What are the structures, cytochemistry and cytophysiology of epithelial cells of the villi of the crypt? What is the composition of the cells of the local endocrine system?
31. What is the significance of the caemphytic epithelium in the implementation of wall-to-wall digestion?
32. What is the general plan of the structure of the colon wall and the histofunctional features of its mucosa?
33. What is the structure and functional values of the vermiform process?
34. Describe the microscopic and submicroscopic features of the structure of the villi of the small intestine?
35. What are the cellular composition of the epithelial lining of the intestinal crypt and its functional significance?
36. What are the features of the structure of the Appendix?
37. Age-related changes and regeneration of salivary glands?
38. What is the structural and functional unit of the liver?
39. Describe the structure of the exocrine pancreas.
40. What is the structure of the endocrine part of the pancreas?
41. As built departments of the exocrine pancreas, and some cytochemical features are characterized by acinar cells.
42. What types of cells are part of the endocrine division of the pancreas and what is their functional significance?
43. What types of cells are part of the endocrine division of the pancreas and what is their functional significance?
44. What are the features of blood circulation in the liver?
45. What is included in the liver "triad"?
46. What is the structure of the hepatic beams intra-lobular hepatic capillaries?
47. What characterized the structure of hepatocytes, what are their cytochemical features and function?
48. What is characteristic of stellate macrophages, pit cells and hepatic lipocytes?
49. What is the meaning of "bilateral secretion of hepatocytes"?
50. Than educated bile duct, what is the structure of their walls in different departments?
51. What is the structure of the gallbladder wall?

SITUATIONAL CHALLENGE

1. The mesenchymal lining formed under the myoepicardial plate is disturbed. What kind of heart development defect will there be?
2. In the wall of the artery, the endothelium with the basement membrane lining the lumen of the intima is destroyed. What are the possible consequences?
3. The child is often ill, susceptible to many infectious diseases. The disease is severe. The blood test revealed a sharp decrease in white blood cells. The defeat of which organ of the immune defense can cause such changes?
4. Two drugs are presented: the lymph node and the spleen. What are the histological features of the structure of these 2 organs differ?
5. The animal has hypofunction of the endocrine organs that produce steroid hormones (sex glands, adrenal gland). How will this affect the growth of the thymus?
6. The histological preparation of the spleen revealed an increased iron content. What does the increase in its content indicate?
7. During childbirth, the woman in labor began to bleed more heavily. After the oxytocin injection, the bleeding stopped. Where in the body is this hormone produced, and what cells?
8. In the experiment, the portal veins running along the pituitary pedicle were cut in the animal. Explain the consequences of this experiment.

8. In the experiment, the animal's adenohypophysis was removed. The bundle and reticular part of the adrenal cortex atrophied. The glomerular continued to function. Explain why.
9. During the operation of thyroid resections, the surgeon, due to inexperience, removed the parathyroid glands. After some time, the patient died from tetanic muscle spasms. Why did convulsions occur that led to the death of the patient?
10. The patient was found to have diabetes insipidus. The doctor prescribed him to inhale powders containing the hormone of the posterior pituitary gland. After a while, the quality of the excreted urine returned to normal. What hormone did the doctor prescribe? Where is it produced?
11. Two histological preparations prepared from the gum and the inner (mucosal) surface of the lip are presented. By what features of the structure can they be distinguished?
12. In the preparation of the hollow organ of the digestive system, a multilayered epithelium without signs of keratinization, glands in the submucosa, and a muscular membrane represented by striated tissue are found. Determine from which organ this drug is prepared.
13. Two histological preparations prepared from salivary glands stained with mucinocarminum are presented, determine which gland secretes the secret (mucus) in the greatest amount?
14. During microscopy of two preparations of the human esophagus, the student found in one of them in the muscle membrane striated, and in the other smooth muscle tissue. So he decided that one of the drugs was an aberration. Is this student right? Give an explanation of your decision.
15. Analysis of gastric juice showed that the patient has hypoacid gastritis (gastritis with low acidity). Which stomach cells are atrophied in this case?
16. On the histopreparation, simple unbranched glands with a narrow lumen are visible in the mucous membrane, containing a large number of main and parietal cells. Which part of the stomach is represented?
17. On the intestinal histopreparation, broad short villi on the mucous membrane and submucosal glands were found. Name the department of the intestine.
18. The PP cells of the gastrointestinal tract are affected. What organs are affected?
19. The endocrine cells that secrete somatostatin are affected. What organs of the gastrointestinal tract are disturbed? Which cells are affected?
20. In which part of the gastrointestinal tract are the rudimentary glands that are analogous to the glands of animals?
21. The liver is involved in the body's defense reactions. What structural components of the liver are included in the macrophage system of the body?
22. In the liver, there is a structure in the form of a rhombus, bounded in the acute corners by central veins, and from the obtuse-by triads?
23. The patient has reduced blood clotting. What liver function is impaired. How will this affect the structure of hepatocytes?
24. A patient at a doctor's appointment complained of pain in the liver, the patient's skin was colored yellow. Explain what structures of the liver are affected?
2. The patient's blood test showed a reduced amount of sugar in the blood. Which pancreatic hormone is produced in excess, and which cells?