

EXAM QUESTIONS
FOR THE DISCIPLINE "HUMAN ANATOMY - ANATOMY OF THE HEAD AND NECK"
FOR SPECIALTY 310503 "DENTISTRY"
2023-2024 academic year

1. Modern principles and methods of anatomical research. Axes and planes in anatomy. Topographical lines on the body surface, their significance for projection of organs on body surfaces.
2. Subject and content of anatomy. Its place in a number of biological disciplines.
3. History of anatomy. The role of scientists in the development of anatomy as a science.
4. Bone as an organ: development, structure, growth. Classification of bones.
5. The vertebral column as a whole: the structure of a typical vertebra. Features of the structure of the vertebrae of different parts of the spine; the formation of its curvatures, movement; the muscles that make the movements of the spinal column. Atlanto-occipital joint.
6. Ribs and sternum: structure, joint of ribs with vertebrae and sternum. Thorax as a whole, its age, typological and individual characteristics. Ribs movements. Muscles that produce movements, their blood supply and innervation.
7. The skull as a whole, its subdivision into the cerebral and facial parts.
8. Features of the skull of the newborn. Age changes.
9. Bones of the cerebral part of the skull (frontal, occipital, ethmoidal, parietal): structure, foramina and their function. Variants and anomalies.
10. Temporal bone: parts, foramina, canals and their significance.
11. Sphenoid bone: parts, foramina and their significance.
12. Development of the facial part of the skull. Anomalies of development.
13. Bones of the facial skull: zygomatic, palatine, lacrimal, vomer, lower nasal concha. The hyoid bone, the muscles associated with it, their blood supply and innervation.
14. Upper jaw: development, points of ossification, structure, connection with other bones. Age and individual differences of the upper jaw. Contraforces of the upper jaw. Places of typical fractures according to Le Fort I, II, III). Ratio of the roots of the teeth to the maxillary sinus. Block anesthesia. Blood supply and innervation of teeth of the upper jaw.
15. Lower jaw: development, nuclei of ossification, structure. Age and individual features of the lower jaw. Places of typical fractures. Contraforces. Topography of the mandibular canal. Ratio of the roots of the teeth to the canal of the lower jaw. Block anesthesia. Blood supply and innervation of teeth of the lower jaw.
16. Anatomy and topography of temporal, infratemporal and pterygopalatine fossa: walls, foramina and their significance.
17. External surface of the base of the skull. Foramina and their significance.
18. Internal surface of the base of the skull. Foramina and their significance.
19. Craniometric points, lines. Cranial, facial indices. Skull shapes. Longitudinal and altitude parameters of the skull. Facial index, options for the position of the facial skull, variability of the shape of the facial skull.
20. Orbit: structure of walls, foramina and their significance.
21. Bone walls of the nasal cavity, the structure of its walls. Paranasal sinuses, their significance, variants and anomalies.
22. Structure of the skeleton of the upper limb. Features of the upper limb, as an organ of labor.
23. Structure of the skeleton of the lower limb. Features of the lower limb, as an organ of support.
24. Pelvis: structure, size, sex differences. Joints of the pelvic bones.
25. Classification of bone connections, their functional features. Continuous connections of the bones of the skull: their morphological and functional characteristics.
26. The structure of the joint. Classification of joints according to the shape of the articular surfaces, the number of axes of motion and function (examples).
27. Temporomandibular joint: structure, shape, movements, muscles acting on TMJ, their blood supply and innervation. Anatomical characteristics of the temporomandibular joint during the functioning of the jaws. Upper and lower joint chambers. Blood supply, blood and lymph flow from TMJ. The innervation of TMJ.
28. Embryogenesis and comparative anatomy of the temporomandibular joint.
29. Joints of the bones of the upper limb.
30. Joints of the bones of the lower limb.
31. Auxiliary apparatus of muscles: fascia, synovial sheaths, mucous bags, sesamoid bones, their position and purpose.
32. Facial muscles. Their development, anatomy, blood supply and innervation.
33. Masticatory muscles: development, anatomy, topography, function, blood supply and innervation. Fascias of masticatory muscles.
34. Muscles involved in chewing: topography, functions, their fascia.
35. Bone-fascial and intermuscular spaces of the head: boundaries, contents. Cellular spaces located under the oral mucosa. The structure of the floor of the oral cavity.

36. Muscles of the neck: their function, blood supply and innervation. Regions of the neck, their boundaries. Triangles of the neck, their practical significance.
37. Muscles of the abdomen: their topography, function, blood supply and innervation. Rectus sheath. Linea alba. Inguinal canal: its walls, deep and superficial rings; contents of canal. Weak spots (sites of weakness) of anterior abdominal wall.
38. Muscles of the upper limb: classification, functions. Axillary and elbow fossa.
39. Muscles, topography and fascia of the lower limb. Femoral triangle. Adductor canal. Popliteal fossa.
40. The human dental system (heterodontic, diphiodontic). The dental system as a whole. Dental formula. Signs of the tooth side (the root sign, the crown angle sign, the crown curvature sign). Types of physiological and pathological bite.
41. The structure of the tooth: parts, tissues, tooth cavity, fixing apparatus. Blood supply and innervation of teeth.
42. Milk teeth, dentition, formulas. Timing of teething. The process of eruption. Dental formula. Features of the structure of the milk teeth of the upper and lower jaws, the timing of eruption.
43. Bite of milk teeth. The concept of a mixed bite, its characteristics in different age periods.
44. Comparative anatomy and embryogenesis of teeth.
45. Teeth permanent-incisors: structure, signs of lateralization, terms of eruption, formulas. Blood supply, innervation.
46. Permanent teeth-canines: structure, signs of lateralization, terms of eruption, formulas. Blood supply, innervation.
47. Premolar teeth: structure, signs of lateralization, terms of eruption, formulas. Blood supply, innervation.
48. Permanent molar teeth: structure, signs of lateralization, terms of eruption, formulas. Blood supply, innervation.
49. Blood supply, venous outflow, lymph outflow and innervation of the teeth.
50. Oral cavity: lips, vestibule of mouth, hard and soft palate. Their structure, function, blood supply and innervations.
51. Features of the oral cavity of the newborn. Developmental anomalies.
52. Tongue (muscles of tongue, papillae): development, structure, function, blood supply, innervations. Regional lymph nodes.
53. Salivary glands: topography, structure, ducts, blood supply, innervation.
54. Pharynx: topography, structure, blood supply and innervation. Regional lymph nodes. Pharyngeal lymphoid ring.
55. Oesophagus: topography, structure, blood supply and innervation. Regional lymph nodes.
56. Stomach: anatomy, topography, blood supply and innervation. Regional lymph nodes.
57. Duodenum: its parts, structure, topography, relation to the peritoneum, blood supply, innervation, regional lymph nodes.
58. The mesenteric part of the small intestine (jejunum and ileum), wall structure, blood supply, innervation, regional lymph nodes.
59. Large intestine: sections, their topography, wall structure, relation to the peritoneum, blood supply, regional lymph nodes, innervation.
60. Cecum: structure, relation to the peritoneum, topography of the appendix. Blood supply, innervation.
61. Pancreas: topography, structure, excretory ducts, blood supply, innervation, regional lymph nodes.
62. Liver: topography, structure. The gallbladder. Excretory ducts of the liver and gallbladder. Blood supply, regional lymph nodes, innervation.
63. Topography of peritoneum in upper, middle and lower compartments of peritoneal cavity; greater and lesser omentum, omental, hepatic, pregastric recesses (bursae), their walls.
64. External nose. The nasal cavity (olfactory and respiratory areas). The walls of the nasal cavity and its foramina, blood supply and innervation.
65. Larynx: topography, cartilages, their joints. Relief of the internal surface of laryngeal mucous membrane. Muscles of the larynx: their classification, function, innervation and blood supply.
66. Trachea and bronchi: structure, topography, blood supply and innervation.
67. Lungs: topography. Segmental structure of lungs. Structure of the acinus.
68. Pleura: structure, pleural cavity, pleural sinuses. Mediastinum: departments, their topography, mediastinal organs.
69. Heart: topography, structure of chambers, blood supply, innervation.
70. Structure of atrial and ventricular myocardium. Conducting system of heart. Valves of the heart, their structure, mechanism of regulation of blood inside heart. Pericardium: structure, topography; pericardial sinuses.
71. Kidneys: development, anatomy, topography. Anatomy of urinary tracts: nephron, calices, pelvis.
72. Ureters, bladder, urethra. Topography, structure, blood supply, regional lymph nodes, innervation. Sexual characteristics of the urethra.
73. Male and female external genital organs: structure, blood supply, innervation.
74. Uterus and uterine tubes: topography, structure, ligaments, relation to the peritoneum, blood supply, innervation.

75. Ovaries: topography, structure, relation to the peritoneum, blood supply, innervation. Age features.
76. General overview of the male genital organs. Testicle, epididymis: structure, membranes. Blood supply, innervation.
77. The general anatomy of blood vessels. Regularities of the distribution of arteries in hollow and parenchymal organs. Regularities of the passage and branching of blood vessels. Microcirculatory blood flow.
78. Anastomoses of arteries and veins (examples). Circumferential (collateral) blood flow (examples).
79. Vessels of lesser (pulmonary) circle of blood flow (general characteristics). Regularities of the distribution arteries and veins in the lungs.
80. Vessels of greater circle of blood flow (general characteristics).
81. Aorta and its parts. Branches of aortic arch: their anatomy, topography, regions of branching (blood supply).
82. Branches of the thoracic aorta (parietal and visceral): their topography and supplied areas.
83. Parietal and visceral (paired and unpaired) branches of abdominal aorta. Regularities of their branching and anastomoses.
84. Arteries of the brain. Greater arterial (Willis) circle of brain. Sources of blood supply to the brain.
85. Common, external carotid artery: topography, branches and supplied areas.
86. Internal carotid artery: topography, branches and supplied areas.
87. Subclavian artery, topography branches and supplied areas.
88. Axillary artery, its topography, departments, branches and areas of their vascularization.
89. Arteries of the upper limb. Arterial network around the elbow joint. Palmar arterial arches.
90. Common and internal iliac arteries, their branches and areas of blood supply.
91. External iliac artery, branches and areas of blood supply. Lower limb arteries.
92. Veins of the brain. Venous sinuses of dura mater. Venous emissaries and diploic veins
93. Intra- and extracranial pats of venous outflow from brain.
94. Internal jugular vein, its topography, tributaries (intracranial and extracranial). Connections between intracranial and extracranial veins (diploic and emissary veins).
95. External jugular vein, its formation, topography, tributaries.
96. Subclavian vein, its formation, topography, tributaries.
97. Superior vena cava: sources of derivation and topography. Azygos and hemiazygos veins, tributaries and anastomoses.
98. Brachiocephalic veins, their topography. Ways of outflow of venous blood from the head, neck and upper limbs.
99. Inferior vena cava: sources of derivation and topography. Tributaries of inferior vena cava and their anastomoses.
100. Portal vein: tributaries, their topography; branching of portal vein in the liver. Anastomoses of portal vein and its tributaries.
101. Features of blood circulation in fetus and changes of cardiovascular system after birth.
102. Venous plexuses. Inter- and intrasystemic venous anastomoses (cava-caval, cava-cava-portal, porto-caval), structure, topography.
103. Principles of the structure of the lymphatic system (capillaries, vessels, nodes, trunks, ducts). Pathways for the outflow of lymph into the venous bed. Factors that determine the flow of lymph.
104. Lymph node as an organ (structure, function). Classification of lymph nodes.
105. Thoracic duct: formation, structure, topography, variants of inflow to venous bed. Right lymphatic duct, formation, topography, site of inflow into venous bed.
106. Organs of the immune system: topography, structure, functions.
107. The nervous system, its functions and importance in the body. The concept of a neuron. Simple and complex reflex arcs.
108. Spinal cord: localization in vertebral canal, internal structure, blood supply. Nuclei of grey matter of the spinal cord, their significance. Localization of conducting tracts in white substance of the spinal cord.
109. Anatomy and topography of medulla oblongata. Localization of nuclei and conducting tracts in medulla oblongata.
110. Anatomy of rhomboid fossa: its relief. Projection of nuclei of cranial nerves on the surface of rhomboid fossa.
111. Anatomy and topography of the pons: parts, internal structure. Localization of nuclei and conducting tracts in pons.
112. Cerebellum: external and internal structure; peduncles, their fibrillary composition.
113. Anatomy and topography of the midbrain; parts, internal structure. Localization of nuclei and conducting tracts in mesencephalon.
114. Anatomy and topography of the diencephalon; parts, external and internal structure.
115. Topography of basal nuclei, localization and functional significance of nervous tracts in internal capsule.
116. Sulci and gyri of superolateral, medial and inferior surfaces of cerebral hemispheres. Localization of cortical centers.
117. Meninges of the brain and spinal cord, their structure. Subdural and subarachnoid spaces.

118. Limbic system: nuclei, position in the brain, connections, functional significance.
119. Reticular formation: nuclei, functions.
120. Commissural and projection fibers of the cerebral hemispheres (corpus callosum, fornix, adhesions, internal capsule).
121. Pathways of proprioceptive sensitivity of the cortical direction, their position in various parts of the spinal cord and brain.
122. Pathways of proprioceptive sensitivity of the cerebellar direction, their position in various parts of the spinal cord and brain.
123. Pathways of tactile sensitivity; their position in various parts of the spinal cord and brain.
124. Motor conducting pyramidal pathways; their position in various parts of the spinal cord and brain.
125. Olfactory nerve: its anatomy and topography. Conducting tract of smelling impulses.
126. Optic nerve: its anatomy and topography. Conducting tract of vision impulses.
127. Oculomotor, trochlear and abducens nerves: their anatomy, topography, areas of innervation. Pupillary reflex pathway.
128. Trigeminal nerve: branches, their anatomy, topography, areas of innervation.
129. First branch of the trigeminal nerve, its branches, areas of innervation. A ciliare node, its position, branches, areas of innervation.
130. The second branch of the trigeminal nerve, its branches, topography, areas of innervation. Pterogopalate node, its topography, branches, areas of innervation.
131. The third branch of the trigeminal nerve: its composition, topography. Vegetative nodes: oticum, submandibular, sublingual, their topography, connections with branches of the trigeminal nerve. Lower alveolar nerve: topography, branches, area of innervation.
132. Maxillary and mandibular dental plexus: topography, formation. Variant anatomy.
133. Facial nerve: localization of nuclei, topography, area of innervation. Branches of the facial nerve that originate in the canal of the facial nerve. Branches of the extracranial part of the facial nerve (parotid plexus, branches to the facial muscles).
134. Vestibulocochlear nerve: anatomy, topography, areas of innervation. Pathway of auditory and vestibular impulses.
135. Glossopharyngeal nerve: branches, their anatomy, topography, areas of innervation.
136. Vagus nerve: branches, their anatomy, topography, areas of innervation.
137. Accessory nerve: its anatomy, topography, branches, areas of innervation.
138. Hypoglossal nerve: its anatomy, topography, branches, areas of innervation.
139. Autonomic nervous system: classification, characteristics of its parts.
140. Parasympathetic division of the autonomic nervous system. General characteristics, centers and peripheral part (nodes, distribution of branches).
141. Sympathetic division of the autonomic nervous system. General characteristics, centers and peripheral part (nodes, distribution of branches).
142. Vegetative innervation of the structures of the oral cavity.
143. Taste analyzer. The pathway of the taste analyzer.
144. Spinal nerve and its branches. Formation of plexuses of the spinal nerves. The posterior branches of the spinal nerves and the areas of their distribution. Intercostal nerves.
145. Cervical plexus: topography, branches, area of innervation.
146. Brachial plexus: topography, branches of the supraclavicular and subclavian parts.
147. Lumbar, sacral plexus: topography, branches, area of innervation.
148. The organ of vision: general plan of the structure. The eyeball and its auxiliary apparatus. Pathway of visual impulses.
149. The organ of hearing and balance: the general plan of the structure and functional features. Pathway of auditory and vestibular impulses.
150. Endocrine glands (branchiogenic, neurogenic). Their structure, topography, functions, blood supply, innervation.

Considered at the meeting of the department for Anatomy on June 1, 2023, protocol № 24.

Head of department



S.A. Kalashnikova