

## The questions for the final examination in anatomy as quadruplets for first-year students of dentistry

*Each question covers both microscopic and macroscopic aspects of organ structure and its syntopy, blood supply, innervation and lymphatic drainage. In topographic anatomy questions it is necessary to first define the region (borders), including palpable structures, specify the nature of the skin that covers it, and any special features of the subcutaneous tissue. Only then you should proceed to the fascias, groups of muscles and course of the main neurovascular bundles.*

1. External and internal cranial base - openings for vessels and nerves  
Uterus – fixation, syntopy, position (draw scheme), its changes during pregnancy, broad ligament  
Mediastinum – division, borders, content (draw transverse section)  
Overview of muscular and skin innervation of the head and neck
2. Submandibular triangle, carotid triangle (draw scheme)  
Vagina – structure and syntopy (draw uterus and vagina in sagittal section)  
Topography of the supramesocolic part of peritoneal cavity (draw a sagittal section through the lesser sac)  
Overview of muscular and skin innervation of the upper limb
3. Lateral cervical region, scalene fissure  
External female genital organs, perineum  
Topography of the duodenum and pancreas (draw a scheme)  
Lumbar plexus and its branches
4. Axilla – boundaries, content  
Heart - description, chambers, heart wall arrangement (draw section through the ventricles)  
Topography of the inframesocolic part of peritoneal cavity  
Sacral plexus and its branches
5. Anterior and posterior regions of the arm (draw a transverse section)  
Cardiac valves – structure and function, cardiac skeleton (draw a scheme of the skeleton)  
Retroperitoneal space, topography of its organs and main vessels and nerves  
Sciatic nerve, paralysis of the common peroneal nerve
6. Cubital fossa, elbow joint  
Conducting system of the heart – structure and function, heart innervation  
Topographic anatomy of the male pelvis (draw sagittal section), importance of the per rectum examination  
Overview of muscular and skin innervation of the lower limb
7. Topographic anatomy of the hand and fingers  
Heart location and projection, X-ray (draw a scheme of the radiogram), auscultation points  
Portal vein – tributaries, portocaval (portosystemic) anastomoses and their clinical significance  
First and second branch of the trigeminal nerve

8. Gluteal region, supra- and infrapiriform foramens  
Epicardium and pericardium – structure, syntopy, pericardial reflections around the roots of the great vessels  
External carotid artery  
Third division of the trigeminal nerve
9. Anterior thigh region, vascular and muscular space, iliopectineal fossa, femoral triangle (draw a scheme), femoral hernias  
Systemic and pulmonary circulation, prenatal circulation  
Thyroid and parathyroid glands – structure, function, topography, blood supply  
Facial nerve, Bell's palsy
10. Popliteal fossa, adductor canal  
Gallbladder and the extrahepatic bile ducts (draw a scheme), hepatoduodenal ligament  
Mamma – description and structure, blood supply and innervation, lymphatics  
Glossopharyngeal nerve and vagus nerve
11. Regions of the leg (draw a transverse section)  
Diaphragm and mechanics of respiration  
External carotid artery  
Accessory nerve and hypoglossal nerve
12. Medial and lateral retromalleolar region  
Primary and permanent dentition formula, eruption, types of occlusion  
Abdominal aorta, position, topographic relations, parietal and paired visceral branches  
General structure of the autonomic nervous system
13. Topography of the foot (draw a transverse section)  
Structure of the teeth, fixation, innervation and blood supply, gingivodental junction  
Abdominal aorta, unpaired visceral branches and their clinically important anastomoses  
Cranial and sacral parasympathetic system
14. Topography of the chest wall, surface projections of the heart, lungs and pleura  
Pharyngeal, palatine and lingual tonsil (Waldeyer's circuit)  
Portal vein – tributaries, portocaval (portosystemic) anastomoses and their clinical significance  
Cervical and thoracic sympathetic system
15. Topography of the abdominal wall, blood supply, innervation and surface projections of the abdominal organs  
Ovary – structure and position, vascular supply, lymphatic drainage, ovarian cycle  
Thymus – structure, position and syntopy, function  
Abdominal and pelvic sympathetic system, prevertebral plexuses and ganglia
16. Inguinal region, inguinal canal, hernias (draw a scheme of the inguinal canal)  
Coronary arteries, coronarography, veins and nerves, lymphatics  
Lymph nodes and collectors of the head and neck  
Corticospinal (pyramidal) and corticonuclear tract

17. Perineal region (draw a scheme), ischioanal fossa (draw frontal section through the pelvis)  
Kidney – description, syntopy, envelopes, fixation (draw scheme)  
Lymph nodes and collectors of the thorax and the chest wall  
Blood supply of the spinal cord, meninges, cerebrospinal fluid and lumbar puncture
18. Topography of the spinal canal (draw a transverse section), anatomical background of the spinal tap (lumbar puncture) and epidural anaesthesia  
Trachea and bronchi, bronchial tree – description (draw a scheme), structure, syntopy, tracheotomy  
Coronary arteries, coronarography, cardiac veins and nerves, lymphatics  
Visual pathway and visual cortical areas
19. Muscles and fascias of thorax  
Liver – structure, nutritional and portal vascular bed, intrahepatic bile ducts  
Topographic anatomy of the female pelvis (draw sagittal section)  
Brain vessels and meninges
20. Structure and types of bones, bone marrow, innervation and blood supply of the bone  
Tongue, soft and hard palate, isthmus of the fauces, cleft defects  
Ascending aorta, aortic arch, thoracic aorta  
Spinal cord, roots of the spinal nerve, branches of the spinal nerve (draw a scheme), cauda equina
21. Ossification, bone age, remodelling and growth of bones  
Salivary glands, their description, syntopy, innervation  
Common carotid artery, internal carotid artery  
Spinal cord – structure of the grey matter, cross section (draw a scheme)
22. Connections of the bones, their structure and types; the synovial joint  
Pharynx – description, syntopy, blood supply, innervation, swallowing reflex  
Subclavian artery  
Motor pathways in the spinal cord and motor deficiencies in spinal cord lesions
23. The osseous nasal cavity, relations to neighbouring structures  
Oesophagus – description, syntopy, physiological constrictions, oesophageal varices  
Arteries of the upper limb  
Sensory pathways in the spinal cord and sensory loss in spinal cord lesions
24. Bony orbit – walls, relation to neighbouring structures, passages  
Stomach and the lesser sac (omental bursa)  
External and internal iliac artery  
Medulla oblongata
25. Connections on the skull, structure and biomechanics of the temporomandibular joint  
Duodenum, jejunum, ileum – structure, blood supply, innervation, motility, mesentery  
Arteries of the upper limb  
Pons

26. Skull of the neonate, its diameters compared to pelvic diameters, growth of the skull  
 Large intestine, structure, vascular supply, innervation, motility  
 Superior vena cava, brachiocephalic veins, subclavian vein, axillary vein  
 Floor of the rhomboid fossa and cranial nerve nuclei (draw a scheme)
27. Vertebrae, the vertebral column, connections, curvatures and mobility  
 Vermiform appendix – structure, positions, abdominal wall projections  
 Internal jugular vein – course and extracranial tributaries  
 Reticular formation
28. Skeleton of the thorax, connections and motility of ribs, the muscles of inspiration  
 Pancreas – structure, syntopy, surgical approaches, Langerhans islets  
 Cranial veins, dural venous sinuses, intracranial tributaries of the internal jugular vein  
 Midbrain (mesencephalon; draw a cross section), cranial nerves III., IV., VI.
29. Bones and joints of the hand including X-ray image interpretation  
 Liver – segments, syntopy (draw a scheme of the visceral surface)  
 Inferior vena cava – course and tributaries, cavocaval anastomoses  
 Cerebellum – structure, subdivision and functional organization
30. Bony pelvis as a complex, connections, passages, diameters, planes, sexual differences  
 Liver – structure, nutritive and portal vascular bed, intrahepatic bile ducts  
 Azygos and hemiazygos veins, vertebral venous plexuses  
 Afferent and efferent connections of the cerebellum and their functions
31. Hip joint – structure, movements, congenital luxation, muscles of the hip  
 Gallbladder and extrahepatic bile ducts (draw a scheme), hepatoduodenal ligament  
 Iliac veins and their tributaries  
 Diencephalon – structure, subdivisions and functional organization
32. Knee joint – structure, biomechanics  
 Rectum and the anal canal, syntopy (draw frontal and sagittal sections), vascular supply, lymphatic drainage, sphincters and their innervation, mechanisms of continence  
 Superficial and deep veins of the lower and upper limb, varicose veins of the lower limb  
 Thalamus – nuclei, connections and functional organization
33. Talocrural and subtalar joints – structure, movements  
 Peritoneum – parietal and visceral, greater and lesser omentum, recesses of the peritoneum  
 Lymph node – structure and functional zones, sentinel lymph node, lymphatic tissue in organs  
 Hypothalamus – subdivisions, connections and function
34. Bones and joints of the foot including X-ray images; plantar arches and their support  
 Nasal cavity, choanae, paranasal sinuses and their syntopy, vascular and nerve supply  
 Main lymphatic ducts  
 Hypophysis, hypothalamohypophyseal system

35. General features of striated muscle, its auxiliary structures, motor end plate, motor unit, muscle spindle, Golgi tendon organ, denervation atrophy  
 Larynx (draw frontal section) – cartilages, ligaments, joints, muscles, cricothyroid (laryngotomy)  
 Spleen – structure, position, syntonopy, vascular supply  
 Basal ganglia, their circuits and function, parkinsonism
36. Muscles and fascias of the head  
 Larynx – position and syntonopy, vascular and nerve supply (draw a laryngoscopic view of inlet); laryngospasm  
 Lymph nodes and collectors of the abdomen and pelvis  
 Functional areas of the cortex
37. Muscles and fascias of the neck (draw a transverse section of the neck)  
 Lungs – description, syntonopy, borders and projection onto thoracic wall, vascular and nerve supply, lymphatics  
 Lymph nodes and collectors (superficial and deep) of the upper and lower limb  
 Ventricular system of the brain (draw a scheme), circulation of the liquor
38. Muscles of the abdominal wall, rectus muscle sheath (draw a transverse section of the wall above and below the umbilicus)  
 Lungs – bronchial and alveolar tree, bronchopulmonary segments  
 Eyeball (draw a horizontal section), cornea, sclera and vitreous body  
 Association and commissural fibers of the hemisphere, internal capsule (draw a scheme of tracts in the internal capsule)
39. Inguinal canal (draw scheme), inguinal hernias  
 Pleura – visceral and parietal, borders of pleura, pleural dome and recesses, pneumothorax  
 Choroid, iris, ciliary body, eyeball chambers, circulation of aqueous humour, glaucoma  
 Corticospinal (pyramidal) and corticonuclear tract
40. Pelvic floor muscles, ischioanal fossa, pelvic fascias (draw a frontal section of the pelvis)  
 Kidney – description, syntonopy, envelopes, fixation (draw a scheme)  
 Retina (draw a scheme of the eye fundus), retinal detachment; lens, accommodation, cataract  
 Dorsal column (lemniscal) system of general sensory tracts, proprioceptive and tactile sensations
41. Muscles and fascias of the back (overview)  
 Structure of the kidney – cortex, medulla, vascular supply, segments  
 Blood supply and innervation of the eyeball, corneal reflex, pupillary light reflex  
 Anterolateral system of sensitive spinal tracts – spinothalamic, spinoreticular, and spinotectal tract; pain pathways
42. Muscles of the shoulder girdle, shoulder joint  
 Renal calices, pelvis, ureter – syntonopy  
 Eyelids, conjunctiva, the lacrimal apparatus  
 Auditory and vestibular pathway

43. Muscles and fascias of the arm (draw a transverse section)  
 Urinary bladder – structure and position, fixation and syntopy in the male and female (draw a scheme)  
 Extraocular muscles, soft tissues in the orbit  
 Olfactory and gustatory pathway, olfactory nerve
44. Muscles and fascias of the forearm (draw transverse section)  
 Male and female urethra – description, its course as an anatomical basis of catheterisation of the bladder  
 External acoustic meatus and tympanic membrane (draw an otoscopic view), paracentesis (myringotomy)  
 Limbic system
45. Muscles and fascias of the hand (draw a transverse section), tendon sheaths, the carpal canal  
 Testis and epididymis, scrotum, descent of the testis  
 Tympanic cavity, auditory ossicles, auditory tube  
 Neurotransmitters in the CNS and the main brain chemical systems
46. Muscles and fascias of the thigh, femoral triangle (draw transverse section and boundaries)  
 Vas (ductus) deferens, spermatic cord, seminal vesicles  
 Bony and membranous labyrinth (draw cross section of bony cochlea and cochlear duct), vestibulocochlear nerve, nystagmus  
 General structure of the spinal nerve, perineurium, vertebromedullar topography, segmental innervation, radicular areas (dermatomes), nervous areas
47. Muscles and fascias of the leg (draw a transverse section)  
 Prostate - structure, topographic relations, prostatic urethra, ejaculatory ducts  
 Skin – epidermis and dermis, hairs, nails, glands, sensory nerve endings  
 Cervical plexus, supraclavicular portion of the brachial plexus
48. Muscles and compartments of the foot (draw a transverse section)  
 Penis – structure (draw a cross-section), vascular and nerve supply, mechanism of erection  
 Mamma - description and structure, blood supply and innervation, lymphatics  
 Infraclavicular portion of the brachial plexus (draw a scheme)
49. Layers of the scalp, superficial regions of the face  
 Uterine (Fallopian) tube - structure, divisions, position, vascular supply  
 Thyroid and parathyroid glands – structure, function, topography, blood supply  
 Radial and axillary nerve, signs of their palsy
50. Infratemporal fossa and parapharyngeal space  
 Uterus – structure, shape and divisions (draw a scheme), vascular supply, lymphatics, endometrial cycle  
 Suprarenal gland – structure, topography (draw a scheme), function, blood supply, paraganglia  
 Median and ulnar nerve, signs of their palsy