

## **The questions for the final examination in anatomy for students of dentistry**

### **Skeleton and its connections, muscles, fascias, osteofascial compartments (30)**

Structure and types of bones, bone marrow, innervation and blood supply of bone  
Ossification, bone age, remodeling and growth of bone  
Connection of bones, structures and types of joints, synovial joint  
The osseous nasal cavity, relations to neighboring structures  
Bony orbit - walls, relation to neighboring structures, passages  
Connections of skull, structure and biomechanics of temporomandibular joint  
Skull of neonate, its diameters compared to pelvic diameters, growth of skull  
Vertebrae, vertebral column, connections, curvatures and motility  
Skeleton of thorax, connections and motility of ribs, muscles of inspiration  
Bones and joints of hand including X-ray images  
Bony pelvis as complex, connections, passages, diameters, planes, sexual differences  
Hip joint - structure, movements, congenital luxation, muscles of hip  
Knee joint - structure, biomechanics  
Talocrural and subtalar joints - structure, movements  
Bones and joints of foot including X-ray images, plantar arches and their support  
General features of striated muscle, its auxiliary structures, motor end plate, motor unit, muscle spindle, Golgi tendon organ, denervation atrophy  
Muscles and fascias of the head  
Muscles and fascias of the neck (draw transversal section of the neck)  
Muscles and fascias of thorax  
Muscles of abdominal wall, rectus muscle vagina (draw transversal section of the wall)  
Inguinal canal (draw scheme), inguinal hernias  
Pelvic floor muscles, ischioanal fossa, pelvic fascias (draw frontal section of pelvis)  
Muscles and fascias of back (overview)  
Muscles of shoulder girdle, shoulder joint  
Muscles and fascias of arm (draw transverse section)  
Muscles and fascias of forearm (draw transverse section)  
Muscles and fascias of hand (draw transverse section), tendon sheaths, carpal canal  
Muscles and fascias of thigh, femoral triangle (draw transverse section and boundaries)  
Muscles and fascias of leg (draw transverse section)  
Muscles and compartments of foot (draw transverse section)

### **Gastrointestinal tract (17)**

Structure of the teeth, fixation, innervation and blood supply, gingivodental junction  
Primary and permanent dentition formula, eruption, types of occlusion  
Tongue, soft and hard palate, isthmus of fauces  
Salivary glands, their description, syntopy, innervation  
Pharynx – description, syntopy, blood supply, innervation, swallowing reflex  
Nasal, palatine and lingual tonsils (Waldeyer circle)  
Oesophagus – description, syntopy, narrowings, oesophageal varices  
Stomach and lesser sac (omental bursa)  
Duodenum, jejunum, ileum – structure, blood supply, innervation, motility, mesentery  
Large intestine, structure, vascular supply, innervation, motility  
Vermiform appendix – structure, positions, abdominal wall projections  
Pancreas – structure, syntopy, surgical approach, Langerhans islets  
Liver – segments, syntopy (draw scheme of visceral surface)  
Liver - structure, nutritional and portal vascular bed, intrahepatic bile ducts  
Gallbladder and extrahepatic bile ducts (draw scheme), hepatoduodenal ligament  
Rectum and anal canal, syntopy (draw frontal and sagittal sections), vascular supply, sphincters and their innervation, mechanism of continence  
Peritoneum - parietal and visceral, greater and lesser omentum, recesses of peritoneum

### **Respiratory system (8)**

Nasal cavity, choanae, paranasal sinuses and their syntopy, vascular and nerve supply  
Larynx (draw frontal section) - cartilagines, ligaments, joints, muscles, coniotomy (cricothyrotomy)

Larynx – position and syntopy, vascular and nerve supply, (draw laryngoscopic view of inlet), laryngospasm

Trachea and bronchi , bronchial tree - description (draw scheme), structure, syntopy, tracheotomy

Lungs – description, syntopy, borders and projection onto thoracic wall, vascular and nerve supply, lymphatics

Lungs – bronchial and alveolar tree, bronchopulmonary segments

Pleura – visceral and parietal, borders of pleura, pleural dome and recesses, pneumothorax

Diaphragm and mechanics of respiration

### **Urinary and reproductive system (15)**

Kidney – description, syntopy, envelopes, fixation (draw scheme)

Structure of kidney – cortex, medulla, vascular supply, segments

Renal calices, pelvis, ureter – syntopy

Urinary bladder – structure and position, fixation and syntopy in male and female (draw scheme)

Male and female urethra – description, its course as basis of catheterisation, filling and voiding internal urethral orifices

Testis and epididymis, scrotum, descent of testis

Vas (ductus) deferens, spermatic cord, seminal vesicles

Prostate - structure, topographic relations, prostatic urethra, ejaculatory ducts

Penis – structure (draw cross-section), vascular and nerve supply, mechanism of erection

Ovary – structure and position, vascular supply, ovarian cycle

Uterine (Fallopian) tube - structure, divisions, position, vascular supply

Uterus – structure, shape and divisions (draw scheme), vascular supply, lymphatics, endometrial cycle

Uterus – fixation, syntopy, position (draw scheme), its changes during pregnancy, broad ligament of uterus

Vagina – structure and syntopy (draw uterus and vagina in sagittal section)

External female genital organs, perineum

### **Heart (7)**

Heart - description, chambers, heart wall arrangement (draw section through ventricles)

Cardiac valves-structure and function, cardiac skeleton (draw skeleton scheme)

Conducting system of the heart- structure and function, heart innervation

Coronary arteries, coronarography, veins and nerves, lymphatics

Heart location and projection, X-ray (draw scheme of radiogram), auscultation heart points

Epicardium and pericardium – structure, syntopy, pericardial reflections around the roots of the great vessels

Systemic and pulmonary circulation, prenatal circulation

### **Arteries (9)**

Ascending aorta, aortic arch, thoracic aorta

Common carotid artery, internal carotid artery

External carotid artery

Subclavian artery

Arteries of upper extremity

Abdominal aorta, position, topographic relations, parietal and paired visceral branches

Abdominal aorta, unpaired visceral branches and their clinically important anastomoses

External and internal iliac artery

Arteries of lower extremity

### **Veins (8)**

Superior vena cava, brachiocephalic veins, subclavian vein, axillary vein

Internal jugular vein - course and extracranial tributaries

Cranial veins, sinus durae matris, intracranial tributaries of internal jugular vein

Inferior vena cava - course and tributaries, cavocaval anastomoses

Azygos and hemiazygos veins, vertebral venous plexuses

Portal vein - tributaries, portocaval (portosystemic) anastomosis and their clinical relevance

Iliac veins and their tributaries

Superficial and deep veins of lower and upper extremities, varicose veins

### **Lymphatic system (8)**

Lymph node - structure and functional zones, sentinel lymph node, lymphatic tissue in organs

Main lymphatic ducts

Thymus - structure, position and syntopy, function

Spleen - structure, position, syntopy, vascular supply

Lymph nodes and collectors of head and neck

Lymph nodes and collectors of thorax

Lymph nodes and collectors of abdomen and pelvis

Lymph nodes and collectors (superficial and deep) of upper and lower limbs

### **Central nervous system - CNS (29)**

Spinal cord, roots of spinal nerve, branching of spinal nerve (draw scheme), cauda equina

Spinal cord - structure of gray matter, cross section (draw scheme)

Motor pathways in spinal cord and motor deficiencies in spinal cord lesions

Sensory pathways in spinal cord and sensory loss in spinal cord lesions

Blood supply of spinal cord, meninges, cerebrospinal fluid and lumbar puncture

Medulla oblongata

Pons

Floor of rhomboid fossa and cranial nerve nuclei (draw scheme)

Reticular formation

Midbrain (mesencephalon) (draw cross section), cranial nerves III., IV., VI.

Cerebellum - structure, subdivision and functional organization

Afferent and efferent connections of cerebellum and their function

Diencephalon - structure, subdivision and functional organization

Thalamus - nuclei, connections and functional organization

Hypothalamus - subdivisions, connections and function

Hypophysis, hypothalamohypophyseal system

Basal ganglia, their circuits and function, parkinsonism

Main functional areas of cerebral cortex

Ventricular system of brain (draw scheme), circulation of liquor

Association and commissural fibers of hemisphere, internal capsule (draw scheme of tracts in internal capsule)

Brain vessels and meninges

Corticospinal (pyramidal) and corticonuclear tract

Lemniscal system (dorsal column tract), proprioceptive and tactile sensation

Anterolateral system of sensitive spinal tracts - (spinothalamic, spinoreticular and spinotectal tracts), pain pathways

Auditory and vestibular pathway

Visual pathway and visual cortical areas

Olfactory and gustatory pathway, olfactory nerve

Limbic system

Neurotransmitters in the CNS and main brain chemical systems

### **Peripheral nervous system – PNS (20)**

General structure of the spinal nerve, perineurium, vertebromedullary topography, segmental innervation, radicular areas, dermatomes  
Cervical plexus, supraclavicular portion of brachial plexus  
Infraclavicular portion of brachial plexus (draw scheme)  
Radial and axillary nerve, paralysis of them  
Median and ulnar nerve, paralysis of them  
Skin and motor innervation of head and neck  
Overview of muscular and skin innervation of upper limb  
Lumbar plexus and its branches  
Sacral plexus and its branches  
Sciatic nerve, paralysis of common peroneal nerve  
Overview of muscular and skin innervation of lower limb  
First and second branch of trigeminal nerve  
Third branch of trigeminal nerve  
Facial nerve, Bell's palsy  
Glossopharyngeal nerve and vagus nerve  
Accessory and hypoglossal nerves  
General structure of autonomic nervous system  
Cranial and sacral parasympathetic system  
Cervical and thoracic sympathetic system  
Abdominal and pelvic sympathetic system, prevertebral plexuses and ganglia

### **Sensory organs, skin, endocrine glands (13)**

Eye (draw sagittal section), cornea, sclera and vitreous body  
Choroid, iris, ciliary body, eye chambers, circulation of aqueous humor, glaucoma  
Retina (draw schema of eye fundus), detachment of retina; lens, accommodation, cataract  
Blood supply and innervation of eyeball, corneal reflex, pupillary light reflex  
Eyelids, conjunctiva, lacrimal apparatus  
Extraocular muscles, soft tissue in orbit  
External acoustic meatus and tympanic membrane (draw otoscopic view), paracentesis  
Tympanic cavity, auditory ossicles, auditory tube  
Bony and membrane labyrinths (draw cross section of bony cochlea and cochlear duct)  
vestibulocochlear nerve, nystagmus  
Skin – epidermis and dermis, hair, nails, glands, sensory endings  
Mammary gland – description and structure, blood supply and innervation, lymphatics  
Thyroid and parathyroid glands – structure, function, topography, blood supply  
Suprarenal gland – structure, topography (draw schema), function, blood supply, paraganglia

### **Regional Anatomy (27)**

Layers of scalp, superficial regions of the face  
Infratemporal fossa and parapharyngeal space  
External and internal cranial base - openings for vessels and nerves  
Submandibular triangle, carotid triangle (draw scheme)  
Lateral neck region, scalenic fissure  
Axilla – boundaries, content  
Anterior and posterior regions of arm (draw transverse section)  
Cubital fossa, elbow joint  
Topographic anatomy of the hand and fingers  
Gluteal region, supra- and infrapiriform foramina  
Anterior thigh region, vascular and muscular lacuna, iliopectineal fossa, femoral triangle (draw schema), femoral hernias  
Popliteal fossa, adductor canal

Regions of lower leg (draw transverse section)  
Retromalleolar regions  
Topography of foot (draw transverse section)  
Mediastinum – division, borders (draw transverse section)  
Topography of chest wall, surface projections of heart, lungs and pleura  
Topography of abdominal wall, blood supply, innervation and surface projections of abdominal organs  
Inguinal region, inguinal canal, hernias (draw schema of inguinal canal)  
Topography of supramesocolic part of peritoneal cavity (draw transverse section through lesser sac)  
Topography of duodenum and pancreas (draw schema)  
Topography of inframesocolic part of peritoneal cavity  
Retroperitoneal space, topography of its organs and main vessels and nerves  
Topographic anatomy of male pelvis (draw sagittal section), importance of rectal exam  
Topographic anatomy of the female pelvis (draw sagittal section)  
Perineal region (draw schema), ischioanal fossa (draw frontal section of pelvis)  
Topography of spinal canal (draw transverse section), anatomic backgrounds of spinal tap (lumbar puncture) and epidural anesthesia