Exam Questions

Student answers one question from each of the four groups. To make it easier for students to prepare for the exam, we have made the specifics of the individual exam questions available for students on the web site, but also on the exam site after the questions have been retrieved. Each question specifies the main points the student should prepare, as well as the recommended images he should draw. If the student thinks fit, he can prepare other points or draw other images that are in some way related to the topic. Teachers also have the right to ask for other questions related to the topic, even if they are not listed among the main points. Download: All Exam questions and Question specifications by groups: Group A, Group B, Group C, Group D.

Group A: Locomotion system (bones, joints, muscles) and Topography

Bones

1. General structure and growth of a bone
2. Bones of limbs
3. Skull
4. Skull of newborn and temporomandibular joint
5. Vertebral column, sternum and ribs

Joints and corresponding regions

6. General structure of a joint
7. Joints of pectoral girdle
8. Shoulder joint and axilla
9. Elbow joint and cubital fossa
10. Joints and topographic sites of hand
11. Pelvis as a whole
12. Hip and sacroiliac joint
13. Knee joint and popliteal fossa
14. Ankle joint, joints of foot, foot arch and topographic sites of foot
15. Joints of vertebral column and thorax

**Muscles**

16. General structure and innervation of a muscle
17. Masticatory and facial muscles, fasciae of head
18. Muscles and fasciae of neck
19. Muscles and fasciae of thorax
20. Diaphragm and mechanism of breathing
21. Muscles and fasciae of abdomen
22. Pelvic and urogenital floors and their fasciae, ischioanal fossa
23. Muscles, fasciae, regions and topographic sites of back
24. Muscles, fasciae, regions and topographic sites of pectoral girdle
25. Muscles, fasciae, regions and topographic sites of arm
26. Muscles, fasciae, regions and topographic sites of forearm
27. Muscles, fasciae, regions and topographic sites of hand
28. Muscles, fasciae, regions and topographic sites of pelvic girdle
29. Muscles, fasciae, regions and topographic sites of thigh
30. Muscles, fasciae, regions and topographic sites of leg
31. Muscles, fasciae, regions and topographic sites of foot

**Topography**

32. Scalp and cranial vault, frontal and occipital regions
33. Orbit and nasal cavity
34. Face, infratemporal and pterygopalatine fossae
35. Regions, triangles and spaces of neck
36. Inguinal canal, abdominal wall and herniae
37. Topographic sites of pectoral girdle and arm
38. Topographic sites of pelvic girdle and thigh
39. Vertebral canal and its contents
40. Topography of male genital organs
41. Topography of female genital organs

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*Group B: Organ systems (digestive, respiratory, urinary and genital, heart, endocrine glands and skin)*
Digestive system

1. Teeth
2. Tongue and palate
3. Salivary glands
4. Pharynx
5. Oesophagus
6. Stomach and omental bursa
7. Duodenum
8. Small intestine
9. Large intestine
10. Rectum
11. Liver
12. Gallbladder and biliary ducts
13. Pancreas
14. Peritoneum and peritoneal cavity

Respiratory system

15. Nose, nasal cavity, paranasal sinuses and nasopharynx
16. Larynx
17. Trachea and bronchial tree
18. Lungs and alveolar tree
19. Pleura and pleural cavity
20. Mediastinum, its division and contents

Urinary system

21. Kidneys
22. Excretory urinary system
23. Male and female urethra

Genital system

24. Scrotum, testis and epididymis
25. Excretory male genital system
26. Accessory male genital glands
27. External male genital organs
28. Ovary and ovarian cycle
29. Uterine tube  
30. Uterus and menstrual cycle  
31. Vagina  
32. External female genital organs

**Heart**

33. Heart – structure, cavities, valves  
34. Conducting system of heart  
35. Heart - vessels and nerves  
36. Heart and types of circulation

**Others**

37. Thyroid  
38. Suprarenal gland and other endocrine-active organs  
39. Mammary gland  
40. Skin

*Group C: Vascular and lymphatic system and peripheral nervous system*

**Arteries**

1. Aorta and coronary arteries  
2. Abdominal aorta  
3. Iliac arteries  
4. External carotid artery  
5. Maxillary artery  
6. Internal carotid artery  
7. Willis's arterial circle and cerebral arteries  
8. Vertebral artery  
9. Subclavian artery  
10. Arteries of upper limb  
11. Arteries of lower limb

**Veins**

12. Intracranial venous sinuses and cerebral veins  
13. Veins of neck
14. Superior vena cava and its tributaries, cavocaval anastomoses
15. Inferior vena cava and its tributaries, cavocaval anastomoses
16. Portal vein and portocaval anastomoses
17. Veins of thorax and portocaval anastomoses
18. Superficial veins and venous perforators of limbs
19. Deep veins and venous perforators of limbs

**Lymphatic system**

20. Spleen
21. Thymus, capsulated and noncapsulated lymphatic tissue
22. Lymphatic vessels and trunks
23. Lymphatic drainage of head and neck
24. Lymphatic drainage of thorax and upper limb
25. Lymphatic drainage of abdomen
26. Lymphatic drainage of pelvis and lower limb

**Peripheral nervous system**

27. General structure of spinal nerve and thoracic nerves
28. Area eradiculares et nervinae, Head's zones
29. Sensory cranial nerves
30. Oculomotor, trochlear and abducent nerves
31. Trigeminal nerve
32. Facial nerve
33. Glossopharyngeal, vagus and accessory nerves
34. Vagus nerve
35. Cervical plexus and hypoglossal nerve
36. Brachial plexus
37. Lumbar plexus
38. Sacral plexus
39. Sympathetic trunk
40. Abdominal autonomic plexuses
41. Cranial parasympathetic system
42. Sacral parasympathetic system

**Group D: Central nervous system**
Central nervous system

1. General structure of nervous system (neuron, glia, synapsis, mediators, receptors)
2. Spinal cord – grey matter
3. Spinal cord – white matter and reflexes
4. Medulla oblongata, reflexes and function
5. Pons, reflexes and function
6. Mesencephalon, reflexes and function
7. Reticular formation
8. Cerebellum – structure and function
9. Cerebellum – connections and function
10. Diencephalon – division, epithalamus, subthalamus, metathalamus
11. Thalamus
12. Hypothalamus and pituitary gland
13. Internal capsule and white matter of telencephalon
14. Cortical functional areas
15. Basal ganglia
16. Limbic system
17. Association and commissural connections of brain
18. Motor tracts
19. Sensory tracts
20. Visual tract
21. Auditory and vestibular tracts
22. Olfactory and gustatory tracts
23. Meninges, brain ventricles and cerebrospinal fluid
24. Arteries of brain and spinal cord
25. Veins of brain and spinal cord
26. Chemical systems of brain
27. Topography of cranial cavity

Senses

28. Eye – anterior segment
29. Eye – posterior segment
30. Accessory structures of eye
31. Oculomotor muscles and topography of orbit
32. External ear
33. Middle ear
34. Internal ear
35. Smell
36. Taste
37. Touch
38. Pain
39. Interoceptors

**Specifics of exam questions - main points and pictures**

**Group A: Locomotion system (bones, joints, muscles) and Topography - blue**

**Bones**

1. **General structure and growth of a bone**
   - **Main points**: types of bones, parts of bones, histological structure, types of bone marrow, types of ossification, vascular supply of bones
   - **Pictures**: internal structure of bones, parts of bones

2. **Bones of limbs**
   - **Main points**: bones of girdles, bones of the free part of extremities, important osseous structures, their function
   - **Pictures**: scheme of the carpal and tarsal bones

3. **Skull**
   - **Main points**: demonstration of bones, openings, osseous structures and cranial fossas on the skull, their content and function
   - **Pictures**: content of jugular foramen

4. **Skull of newborn and temporomandibular joint**
   - **Main points**: relation between neurocranium and viscerocranium, fonticuli and other characteristic marks, connections of bones, ossification;
temporomandibular joint (type, shape, head, cup, articular capsule, ligaments, other structures and movement), muscles providing movement in TM joint, topography of the TM joint

- **Pictures**: superior and lateral view to the newborn skull, detail of the TM joint

5. **Vertebral column, sternum and ribs**

- **Main points**: common marks of the vertebrae, differences between cervical, thoracic and lumbar vertebrae, sacral bone, movements of the vertebral column, articulations of the vertebral column, vertebral canal and its content, intercostal space and its content, scalenic fissure
- **Pictures**: general structure of the vertebrae, ligaments of the vertebral column

**Joints and corresponding regions**

6. **General structure of a joint**

- **Main points**: types of connection of the bones, general description of the joint, types of joints, other accessory joint structures
- **Pictures**: schematic cross-section of the joint

7. **Joints of pectoral girdle**

- **Main points**: examples of the joints and their division
- **Pictures**: cross-section of the sternoclavicular joint

8. **Shoulder joint and axilla**

- **Main points**: type, shape, head, cup, articular capsule, ligaments, other joint structures, movements, middle position, muscles providing movement of the joint, topography of the joint; rotator cuff; borders and content of the axilla
- **Pictures**: ligaments of the shoulder joint, content of the axilla

9. **Elbow joint and cubital fossa**

- **Main points**: type, shape, head, cup, articular capsule, ligaments, other joint structures, movements, middle position, muscles providing movement of the joint, topography of the joint; borders and content of the cubital region and cubital fossa
- **Pictures**: ligaments and joint capsule of the elbow joint, content of cubital
fossa

10. **Joints and topographical sites of hand**

   - **Main points**: types, shapes, heads, cups, articular capsules, ligaments, other joint structures, movements, middle positions, muscles providing movement of the joints, topography of the joints; description of the wrist joint and carpometacarpal joint of the thumb, borders and content of the hand region and carpal canal
   - **Pictures**: scheme of the joints of the hand, cross-section of the carpal canal

11. **Pelvis as a whole**

   - **Main points**: bones forming pelvis, types of connections, greater and lesser pelvis, planes and diameters of the pelvis, pelvic content
   - **Pictures**: connections of the pelvis, planes and diameters

12. **Hip and sacroiliac joint**

   - **Main points**: type, shape, head, cup, articular capsule, ligaments, other joint structures, movements, middle position, muscles providing movement of the joints, topography of the joints
   - **Pictures**: ligaments and joint capsule of the hip joint

13. **Knee joint and popliteal fossa**

   - **Main points**: type, shape, head, cup, articular capsule, ligaments, other joint structures, movements, middle position, muscles providing movement of the joint, topography of the joint; borders and content of the popliteal fossa, canalis adductorius
   - **Pictures**: ligaments and other structures of the knee joint (lateral and superior view), content of the popliteal fossa

14. **Ankle joint, joints of foot, foot arch and topographical sites of foot**

   - **Main points**: types, shapes, heads, cups, articular capsule, ligaments, other joint structures, movements, middle position, muscles providing movement of the joints, topography of the joints; description of the talocrural, Chopart's and Lisfranc's joints; arches of the foot, ligaments and muscles maintaining it
   - **Pictures**: ligaments and joint gap of the talocrural joint (posterior view, frontal cross-section), scheme of the joints of the foot, foot arches
15. **Joints of vertebral column and thorax**

- **Main points**: connections of the vertebral column, types, shapes, heads, cups, ligaments, movements, muscles providing movement of the joint, topography of the joint
- **Pictures**: ligaments of the vertebral column, connection between skull and vertebral column

**Muscles**

16. **General structure and innervation of a muscle**

- **Main points**: types of muscles, structure of the skeletal muscle, parts and auxiliary structures of the muscle, types of contractions and fibres, innervation (nerve fibres and receptors) of the muscle
- **Pictures**: structure of the muscle, sarcomera, innervation of the muscle

17. **Masticatory and facial muscles, fasciae of head**

- **Main points**: embryonal origin of the mimic and masticatory muscles, overview of the mimic muscles and their functions, modiolus anguli oris, origin, insertion, innervation and function of the masticatory muscles and buccinator muscle, fasciae of the head
- **Pictures**: scheme of the mimic muscles

18. **Muscles and fasciae of neck**

- **Main points**: muscle groups, origin, insertion, innervation and function of the muscles, neck fascia and its layers, spaces of the neck (parapharyngeal, prestyloid, retrostyloid, retropharyngeal and visceral spaces), scalenic fissure
- **Pictures**: neck muscles (anterior view), transversal cross-section of the neck (C6), scalenic fissure

19. **Muscles and fasciae of thorax**
• **Main points:** muscle groups, origin, insertion, innervation and function of the muscles, fasciae, description of respiration, inspiratory and expiratory muscles, explanation of pneumothorax, fasciae of the thorax
• **Pictures:** thoracic muscles (anterior view), cross-section of the thoracic wall, intercostal space

20. **Diaphragm and mechanism of breathing**

• **Main points:** embryonal origin of the diaphragm, origin, insertion, innervation, function and topography of diaphragm, openings and their content, description of respiration, inspiratory and expiratory muscles, explanation of pneumothorax
• **Pictures:** parts and openings of the diaphragm

21. **Muscles and fasciae of abdomen**

• **Main points:** origin, insertion, innervation and function of the muscles, layers of the abdominal wall, rectus sheet, fasciae, borders and content of the inguinal canal, abdominal hernias
• **Pictures:** transversal cross-section of the abdominal wall through rectus sheet above and below umbilicus, inguinal canal

22. **Pelvic and urogenital floors and their fasciae, ischioanal fossa**

• **Main points:** origin, insertion, innervation and functions of the muscles of the pelvic and urogenital floors, borders and content of the ischioanal fossa, pudendal canal
• **Pictures:** inferior view to the pelvic floor and urogenital floor, frontal cross-section of the lesser pelvis

23. **Muscles, fasciae, regions and topographic sites of back**

• **Main points:** muscle groups, origin, insertion, innervation and function of superficial muscles; systems and names of deep back muscles, development, innervation and function; borders and content of the suboccipital, superior lumbar and inferior lumbar triangles
• **Pictures:** posterior view to the muscles of the back, suboccipital triangle

24. **Muscles, fasciae, regions and topographic sites of pectoral girdle**

• **Main points:** muscle groups, origin, insertion, innervation and function,
vessels and nerves around shoulder, fasciae; axillary fossa, scapular notch, spinoglenoidal notch, humerotricipital and omotricipital foramen, deltoidopectoral triangle
• **Pictures**: posterior view to the scapular muscles

25. **Muscles, fasciae, regions and topographic sites of arm**

• **Main points**: muscle groups, origin, insertion, innervation and function, compartments of the arm, vessels and nerves of the brachial region, fasciae; cubital fossa, cubital canal, supinatory canal, pronatory canal
• **Pictures**: cross-section of the arm

26. **Muscles, fasciae, regions and topographic sites of forearm**

• **Main points**: muscle groups, origin, insertion, innervation and function, compartments of the forearm, vessels and nerves of the antebrachial region, fasciae; carpal canal, ulnar canal, Paron's space
• **Pictures**: cross-section of the forearm

27. **Muscles, fasciae, regions and topographic sites of hand**

• **Main points**: muscle groups, origin, insertion, innervation and function, compartments of the hand, synovial vaginae of the palm and back of the hand, fasciae; Giot’s space, radial foveola
• **Pictures**: cross-section of the hand, synovial vaginae

28. **Muscles, fasciae, regions and topographic sites of pelvic girdle**

• **Main points**: muscle groups, origin, insertion, innervation and function, vessels and nerves of the hip and gluteal regions, fasciae; greater and lesser sciatic foramen, lacuna vasorum + musculorum
• **Pictures**: posterior view to the pelvic muscles

29. **Muscles, fasciae, regions and topographic sites of thigh**

• **Main points**: muscle groups, origin, insertion, innervation and function, compartments of the thigh, vessels and nerves of the femoral region, fasciae; lacuna vasorum + musculorum, iliopectineal fossa, femoral triangle, adductory canal
• **Pictures**: cross-section of the thigh, femoral triangle
30. **Muscles, fasciae, regions and topographic sites of leg**

- **Main points:** muscle groups, origin, insertion, innervation and function, compartments of the leg, vessels and nerves of the crural region, fasciae; popliteal fossa, arcus tendineus musculi solei, malleolar, fibular and musculofibular canals
- **Pictures:** cross-section of the leg, structures behind medial and lateral malleolus

31. **Muscles, fasciae, regions and topographic sites of foot**

- **Main points:** muscle groups, origin, insertion, innervation and function, compartments, vessels and nerves of the foot region, fasciae; malleolar canal
- **Pictures:** cross-section of the foot

**Topography**

32. **Scalp and cranial vault, frontal and occipital regions**

- **Main points:** layers of the scalp, vessels and nerves of the frontal and occipital region
- **Pictures:** cross-section of the layers of the scalp

33. **Orbit and nasal cavity**

- **Main points:** borders and content, passages and their content, relations to the surrounding structures
- **Pictures:** frontal cross-section of the nasal cavity (conachae and meatuses), direction of oculomotor muscles contractions

34. **Face, infratemporal and pterygopalatine fossae**

- **Main points:** vessels and nerves of the face, from superficial to deeper layers; borders, passages and content of the infratemporal and pterygopalatine fossae, relations to the surrounding structures
- **Pictures:** vessels and nerves of the face

35. **Regions, triangles and spaces of neck**

- **Main points:** division, borders and content of the regions, triangles and
spaces of the neck (submental, submandibular, carotic, muscular, omoclavicular, omotrapezoid, Pirogov's triangles, Beclard's angle)

- **Pictures**: cross-section of the neck at the level of the C6, overview of the cervical triangles

36. **Inguinal canal, abdominal wall and herniae**

- **Main points**: borders and content of the inguinal canal, hernias
- **Pictures**: layers of the abdominal wall at the level of inguinal canal, including its walls

37. **Topographical sites of pectoral girdle and arm**

- **Main points**: fossa axilaris, incisura scapulae et spinoglenoidalis, foramen humerotricipital et omotricipitale, trigonum deltopectoral, fossa cubitalis, canalis cubitalis, pronatorius, supinatorius, carpi et ulnaris, Paron's space, Guiot's space, foveola radialis
- **Pictures**: cross-section of the arm, forearm, wrist and hand

38. **Topographical sites of pelvic girdle and thigh**

- **Main points**: foramen ischiadicum majus et minus, foramen suprapiriforme et infrapiriforme, lacuna vasorum et musculorum, fossa iliopectinea, trigonum femorale, canalis adductorius, fossa poplitea, arcus tendineus musculi solei, canalis malleolaris, canalis fibularis et musculofibularis
- **Pictures**: cross-section of the thigh, leg and foot, lacuna vasorum + musculorum, structures behind medial and lateral malleolus

39. **Vertebral canal and its contents**

- **Main points**: borders, communications and content of the vertebral canal, spaces formed by spinal memminges, lumbar punction
- **Pictures**: cross-section of the vertebral canal

40. **Topography of male genital organs**

- **Main points**: intraperitoneal and subperitoneal organs and their mesenteries, spaces in the peritoneal cavity, fasciae, pelvis and urogenital floors, perineal region
- **Pictures**: sagittal cross-section of the male pelvis
41. **Topography of female genital organs**

- **Main points:** intraperitoneal and subperitoneal organs and their mesenteries, spaces in the peritoneal cavity, fasciae, pelvis and urogenital floors, perineal region
- **Pictures:** sagittal cross-section of the male pelvis

**Group B: Organ systems (digestive, respiratory, urinary, genital system, heart, glands and skin) - green**

**Digestive system**

1. **Teeth**

- **Main points:** external and internal structure of a tooth, fixation of a tooth in jaw, tooth types, dental formula and tooth eruption
- **Figures:** dental formula of the deciduous and the permanent teeth

2. **Tongue and palate**

- **Main points:** parts, surfaces, structures, muscles, innervation and vascular supply of the tongue, development, structure of the hard and soft palate, muscles, innervation and vascular supply of the soft palate, palatine tonsil
- **Figures:** somatosensory and gustatory innervation of the tongue

3. **Salivary glands**

- **Main points:** types of glands, structure, syntopy and innervation of major salivary glands
- **Figures:** parotid gland and parotid duct

4. **Pharynx**

- **Main points:** general structure of the wall of the digestive tube, division and communications, wall structure, syntopy, muscles, innervation, vascular supply and spaces around the pharynx
- **Figures:** sagittal section of the pharynx, lateral view of the pharyngeal muscles, transverse section of the neck at the level of C6
5. **Oesophagus**

- **Main points**: general structure of the wall of the digestive tube, parts, syntopy, curvatures, constrictions, innervation and vascular supply, thinned spots of the wall (Killian's and Laimer's triangle), closure of the aboral oesophageal orifice
- **Figures**: parts, curvatures and constrictions of the oesophagus, transverse section of the neck at the level of C6, diaphragm

6. **Stomach and omental bursa**

- **Main points**: general structure of the wall of the digestive tube, parts, structure, syntopy, mesenteries, innervation, vascular supply, projection of the stomach on the anterior abdominal wall, closure of the aboral oesophageal and cardiac orifice; boundaries and recesses of the omental bursa, contents of the hepatoduodenal ligament
- **Figures**: parts, vascular supply and syntopy of the stomach

7. **Duodenum**

- **Main points**: general structure of the wall of the digestive tube, parts, structure, syntopy, fixation, vascular supply and innervation; extrahepatic bile ducts
- **Figures**: duodenum, pancreas, extrahepatic bile ducts

8. **Small intestine**

- **Main points**: general structure of the wall of the digestive tube, parts, structure, syntopy, fixation, vascular supply and innervation, differences between jejunum and ileum
- **Figures**: vascular supply of the small intestine

9. **Large intestine**

- **Main points**: general structure of the wall of the digestive tube, parts, structure, syntopy, innervation and vascular supply, positions of vermiform appendix, relationship to peritoneum
- **Figures**: parts of the large intestine and their vascular supply, paracolic spaces
10. **Rectum**

- **Main points:** general structure of the wall of the digestive tube, parts, flexures, muscles, syntopy, innervation and vascular supply, function; pelvic floor, mechanism of defecation, anal triangle
- **Figures:** frontal and sagittal section of the rectum, sagittal section of the male and female pelvis

11. **Liver**

- **Main points:** parts, external and internal structure, mesenteries, function, syntopy and vascular supply; intrahepatic bile ducts
- **Figures:** syntopy of the liver (visceral surface)

12. **Gallbladder and bile ducts**

- **Main points:** general structure of the wall of the digestive tube, intrahepatic and extrahepatic bile ducts – parts and their course, structure of the gallbladder and bile ducts, hepatoduodenal ligament, bile production
- **Figures:** extrahepatic bile ducts, hepatoduodenal ligament

13. **Pancreas**

- **Main points:** parts, ducts, syntopy and vascular supply, function of the exocrine and endocrine part, overview of development
- **Figures:** duodenum and pancreas, extrahepatic bile ducts, vascular supply of the pancreas

14. **Peritoneum and peritoneal cavity**

- **Main points:** divisions of the peritoneal cavity, organs, mesenteries, omenta, recesses, spaces and vascular supply
- **Figures:** organs and mesenteries, sagittal section of the peritoneal cavity, male and femal pelvis

**Respiratory system**

15. **External nose, nasal cavity, paranasal sinuses and nasopharynx**

- **Main points:** structure of the external nose; parts, boundaries and syntopy of
the nasal cavity; list and drainage of the paranasal sinuses, structures of the nasopharynx, innervation and vascular supply
  • **Figures:** section of the nasal cavity, drainage of the paranasal sinuses

16. **Larynx**
  • **Main points:** structure (cartilages, ligaments, joints and muscles), laryngeal cavity, syntopy, vascular supply and innervation
  • **Figures:** laryngoscopic view of the glottis, frontal section of the larynx

17. **Trachea and bronchial tree**
  • **Main points:** general structure and differences of the structure of the larynx, bronchi and bronchioles syntopy, vascular supply and innervation, branching of the bronchial tree (subsegments of lung parenchyma), tracheotomy, bronchoscopy
  • **Figures:** bronchial tree

18. **Lungs and alveolar tree**
  • **Main points:** parts, surfaces, margins and syntopy of the lungs; lobes and bronchopulmonary segments, syntopy; contents of the lung hilum, vascular supply, innervation and lymphatic drainage, fetal circulation
  • **Figures:** bronchopulmonary segments, structures in the hilum of the lung

19. **Pleura and pleural cavity**
  • **Main points:** parts, recesses, syntopy, vascular supply, innervation, borders and projection of the pleura, definition of the pneumothorax
  • **Figures:** parts, recesses, borders and projection of the pleura

20. **Mediastinum: division and content**
  • **Main points:** divisions, boundaries and content
  • **Figures:** transversal section of thorax at the T2 (T3) level

**Urinary system**

21. **Kidney**
  • **Main points:** covers, external and internal structure, segments, syntopy,
vascular supply and innervation of the kidneys; nephron and its parts, juxtaglomerular apparatus, developmental stages, shape variations

- **Figures**: syntopy of the kidneys, transverse section of abdomen at the L1 level

22. **Urinary tract**

- **Main points**: general structure, intrarenal and extrarenal parts, syntopy of the renal pelvis, parts and course of the ureter, parts and syntopy of the urinary bladder, vascular supply and innervation of all urinary tracts, dynamics of micturition
- **Figures**: course and crossing of the ureter with other structures, sagittal section of the male and female pelvis

23. **Male and female urethra**

- **Main points**: general structure, parts, curvatures, constricted and dilated segments and muscles of the male urethra, parts and muscles of the female urethra, dynamics of micturition
- **Figures**: constricted and dilated segments of the male urethra, course and crossing of the ureter with other structures, sagittal section of the male and female pelvis

**Genital system**

24. **Scrotum, testis and epididymis**

- **Main points**: structure, cells, innervation and vascular supply, function, development and descent of testis, layers of the scrotum
- **Figures**: layers of the scrotum

25. **Excretory male urinary tract**

- **Main points**: general structure of the excretory male urinary tract, parts, course and structure of the ductus deferens; syntopy and duct of the seminal glands; external and internal structure and syntopy of the prostate, vascular supply and innervation, mechanism of ejaculation
- **Figures**: parts of the ductus deferens, transversal section of the prostate

26. **Accessory male genital glands**
Main points: syntopy and ducts of the seminal glands; external and internal structure and syntopy of the prostate; bulbo-urethral glands; vascular supply and innervation, pelvic floor

Figures: transversal section of the prostate, sagittal section of the male pelvis

27. External male genital organs

Main points: external and internal structure, vascular supply and innervation, muscles of urogenital floor, mechanism of erection and ejaculation

Figures: transverse section of the penis, sagittal section of the male pelvis, inferior view of perineal region

28. Ovarium and ovarian cycle

Main points: parts, structure, cells, fixation, vascular supply and innervation, ovarian cycle, stages of follicle, corpus rubrum, corpus luteum, corpus albicans

Figures: vascular supply of the ovary and uterine tube

29. Uterine tube

Main points: general structure of the female genital tract, parts, structure, fixation, vascular supply and innervation, fertilization

Figures: parts of the uterine tube, vascular supply of the ovary and uterine tube

30. Uterus and menstruation cycle

Main points: general structure of the female genital tract, external and internal structure, surfaces and position, supporting apparatus, peritoneal folds, vascular supply and innervation, menstruation cycle

Figures: sagittal section of female pelvis, parts of the uterus, broad ligament of uterus

31. Vagina

Main points: general structure of the female genital tract, external and internal structure, pelvic floor, syntopy, vascular supply and innervation, menstruation cycle

Figures: sagittal section of female pelvis
32. **External female genital organs**

- **Main points:** structure, vascular supply and innervation of organs, muscles of urogenital floor, mechanism of erection
- **Figures:** transverse section of the body of the clitoris, sagittal section of female pelvis, inferior view of perineal region

**Heart**

33. **Heart** - structure, chambers, valves

- **Main points:** heart chambers and valves, parts and function of the cardiac skeleton, fetal and adult blood circulation, heart wall, auscultation sites of the heart valves, overview of heart development
- **Figures:** transverse section of the heart with vascular supply

34. **Conducting system of the heart**

- **Main points:** parts, layers of the heart wall, cardiac skeleton, relationship to heart block
- **Figures:** scheme of the conducting system of the heart

35. **Heart - vessels and innervation**

- **Main points:** topography of the heart in the pericardium, projection of the heart, auscultation sites of the heart valves, vascular supply, innervation, conducting system of the heart
- **Figures:** transverse section of the heart with vascular supply; scheme of the coronary arteries, projection of the heart, auscultation sites of the heart valves

36. **Heart and circulation**

- **Main points:** structures and openings in the chambers, pulmonary circulation, fetal circulation, overview of heart development
- **Figures:** basic structures in the right atrium, fetal circulation

**Others**
37. **Thyroid and parathyroid glands**

- **Main points:** structure, syntopy, vascular supply and innervation of the glands, surgical approaches, function and hormones, overview of development
- **Figures:** transverse section of the neck at the C6 level

38. **Adrenal gland and other hormone-producing organs**

- **Main points:** structure, shape, syntopy, vascular supply and innervation, function and hormones, overview of development; list of the other hormone-producing organs and their hormones
- **Figures:** transverse section of the abdomen at the L1 level

39. **Mammary gland**

- **Main points:** position, structure, syntopy, vascular supply and innervation
- **Figures:** sagittal section of the breast, lymphatic drainage

40. **Skin**

- **Main points:** function, parts, layers, cells, derivates (glands, hairs, nails), receptors and their function
- **Figures:** section of the skin

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**Group C: Vascular, lymphatic and peripheral nervous system - red**

**Arteries**

1. **Aorta and coronary arteries**

   - **Main points:** general structure of the vascular wall; course, branches and supplied areas, syntopy, aneurysm, bypass, catheterization and angioplasty
   - **Figures:** scheme of the course and main branches

2. **Abdominal aorta**

   - **Main points:** general structure of the vascular wall; course, branches and supplied areas, syntopy, aneurysm
3. **Iliac arteries**

- **Main points:** general structure of the vascular wall; course, branches and supplied areas, syntopy, aneurysm
- **Figures:** scheme of the course and main branches

4. **External carotid artery**

- **Main points:** general structure of the vascular wall; course, branches (main branches and their branches) and supplied areas, syntopy, course through the openings in the skull
- **Figures:** scheme of the course and main branches

5. **Maxillary artery**

- **Main points:** general structure of the vascular wall; course, parts, branches and supplied areas, syntopy, course through the openings in the skull, epidural bleeding
- **Figures:** scheme of the course and main branches

6. **Internal carotid artery**

- **Main points:** general structure of the vascular wall; course, parts, branches and supplied areas, syntopy, course through the openings in the skull
- **Figures:** scheme of the course and main branches, ultrasound examination and palpation

7. **Cerebral arterial circle**

- **Main points:** general structure of the vascular wall; course, parts, branches and supplied areas, syntopy, clinically important branches and consequences of the closures/bleedings, subarachnoid bleeding, aneurysm, supplied areas
- **Figures:** scheme and main branches, cortical supplied areas by the cortical arteries

8. **Vertebral artery**

- **Main points:** general structure of the vascular wall; course, parts, branches and supplied areas, syntopy, course through the openings in the skull and vertebral column
• **Figures**: scheme of the course and main branches

9. **Subclavian artery**

• **Main points**: general structure of the vascular wall; course, parts, branches and supplied areas, syntopy, scalene syndrome, subclavian steal syndrome
• **Figures**: scheme of the course and main branches

10. **Arteries of the upper limbs**

• **Main points**: general structure of the vascular wall; course, parts, branches and supplied areas, syntopy, palpation, catheterization, dialyzation fistulae
• **Figures**: scheme of the course and main branches

11. **Arteries of the lower limb**

• **Main points**: general structure of the vascular wall; course, parts, branches and supplied areas, syntopy, palpation, catheterization, bypasses
• **Figures**: scheme of the course and main branches

**Veins**

12. **Dural venous sinuses and veins of the brain**

• **Main points**: general structure of the vascular wall; list of sinuses, their tributaries and drainage area, syntopy, emissary veins, subdural bleeding
• **Figures**: lateral and superior view to the dural venous sinuses, frontal section of the cavernous sinus

13. **Veins of the neck**

• **Main points**: general structure of the vascular wall; course, tributaries and drainage area, syntopy, central catheterization, emissary veins
• **Figures**: scheme of the course and main branches

14. **Superior vena cava and its tributaries, cavo-caval anastomoses**

• **Main points**: general structure of the vascular wall; course, tributaries and drainage area, syntopy, central catheterisation, cavo-caval anastomoses
• **Figures**: scheme of the course and main branches
15. **Inferior vena cava and its tributaries, cavo-caval anastomoses**
   - **Main points:** general structure of the vascular wall; course, tributaries and drainage area, syntopy, cavo-caval anastomoses
   - **Figures:** scheme of the course and main branches

16. **Portal vein and porto-caval anastomoses**
   - **Main points:** general structure of the vascular wall; course, tributaries and drainage area, syntopy, portal hypertension, porto-caval anastomoses
   - **Figures:** scheme of the course and main branches

17. **Veins of the thorax and porto-caval anastomoses**
   - **Main points:** general structure of the vascular wall; course, tributaries and drainage area, syntopy, portal hypertension, porto-caval anastomoses
   - **Figures:** scheme of the course and main branches

18. **Superficial veins of the limbs and venous perforators**
   - **Main points:** general structure of the vascular wall; course, tributaries and drainage area, syntopy, venepuncture, perforators and their function, varices
   - **Figures:** scheme of the course and main branches, scheme of a perforator, subinguinal venous confluence

19. **Deep veins of the limbs and venous perforators**
   - **Main points:** general structure of the vascular wall; course, tributaries and drainage area, syntopy, perforators and their function
   - **Figures:** scheme of the course and main branches, scheme of a perforator

**Lymphatic system**

20. **Spleen**
   - **Main points:** parts, structure, syntopy, course and branches of the vessels, blood supply and innervation, function, delayed rupture of spleen
   - **Figures:** syntopy of the spleen

21. **Thymus, encapsulated and non-encapsulated lymphoid tissue**
Main points: parts, structure, syntopy, blood supply and innervation, function; tonsils – overview, structure and function; lymph node – overview, structure and function, MALT
• Figures: pharyngeal lymphoid ring

22. Lymphatic vessels and trunks
• Main points: general structure of the vascular wall; course, tributaries, syntopy, drainage area
• Figures: scheme of the course and main branches

23. Lymphatic drainage of the head and neck
• Main points: lymph nodes of the head and neck and their drainage areas, drainage of the organs (especially of the tongue), nodes of Virchow-Troisier, TNM staging system
• Figures: scheme of the lymph nodes of the head and neck, scheme of the lymphatic drainage of the tongue

24. Lymphatic drainage of the thorax and upper limbs
• Main points: lymph nodes of the thorax and upper limbs and their drainage areas, drainage of the organs (especially of the lungs and mammary gland), node of Sorgius, TNM staging system
• Figures: scheme of the lymph nodes of the thorax and upper limbs, scheme of the lymphatic drainage of the lungs and mammary gland

25. Lymphatic drainage of the abdomen
• Main points: lymph nodes of the abdomen and their drainage areas, drainage of the organs (especially of the stomach and large intestine), TNM staging system
• Figures: scheme of the lymph nodes of the abdomen, scheme of the lymphatic drainage of the stomach and large intestine

26. Lymphatic drainage of the pelvis and lower limbs
• Main points: lymph nodes of the pelvis and lower limbs and their drainage areas, drainage of the organs (especially of the ovary/testis, uterus, prostate, scrotum), node of Cabanas, TNM staging system
Peripheral nervous system

27. General structure of the spinal nerve and thoracic nerves

- **Main points**: scheme of the PNS; function, structure and branches of the spinal nerve; course, branches and types of impulses (modalities) of the thoracic nerves, syntopy, innervated area, herpes zoster
- **Figures**: scheme of the spinal nerve

28. Dermatomes, myotomes, peripheral nerve fields, Head's zones

- **Main points**: definitions, examples, clinical importance
- **Figures**: dermatomes of the body and limbs, sensory innervation of the head and limbs

29. Special sensory cranial nerves

- **Main points**: olfactory, optic and vestibulocochlear nerve, development, nuclei, types of impulses (modalities), origin, course, course through the openings in the skull, branches, syntopy, function, clinical examination, reflexes, paralysis/irritation
- **Figures**: scheme of the course and main branches, olfactory, visual, auditory and vestibular pathway, internal acoustic meatus, scheme of the pupillary reflex

30. Oculomotor, trochlear and abducent nerves

- **Main points**: development, nuclei, types of impulses (modalities), origin, course, course through the openings in the skull, branches, syntopy, function, clinical examination, reflexes, paralysis /irritation
- **Figures**: scheme of the course and main branches, frontal section of the cavernous sinus, scheme of the pupillary reflex

31. Trigeminal nerve

- **Main points**: development, nuclei, types of impulses (modalities), origin, course, course through the openings in the skull, branches, syntopy, function, clinical examination, reflexes, palsy/irritation (neuralgia), anesthesia
• **Figures**: scheme of the course and main branches

32. **Facial nerve**

• **Main points**: development, nuclei, types of impulses (modalities), origin, course, course through the openings in the skull, branches, syntopy, function, clinical examination, reflexes, central and peripheral paralysis

• **Figures**: scheme of the course and main branches, canalis nervi facialis

33. **Glossopharyngeal, vagus and accessory nerves**

• **Main points**: development, nuclei, types of impulses (modalities), origin, course, course through the opening in the skull, branches, syntopy, function, clinical examination, reflexes, palsy/irritation

• **Figures**: scheme of the course and main branches, jugular foramen

34. **Vagus nerve**

• **Main points**: development, nuclei, types of impulses (modalities), origin, course, course through the opening in the skull, branches, syntopy, function, clinical examination, reflexes, palsy/irritation

• **Figures**: scheme of the course and main branches, jugular foramen

35. **Cervical plexus and hypoglossal nerve**

• **Main points**: hypoglossal nerve: development, nuclei, types of impulses (modalities), origin, course, course through the opening in the skull, branches, syntopy, function, clinical examination, reflexes, palsy/irritation; nerves of the plexus and their course, branches, types of impulses (modalities), syntopy and innervated areas, palsy/irritation, point of Jonáš

• **Figures**: scheme of the course and main branches

36. **Brachial plexus**

• **Main points**: nerves of the plexus and their course, branches, types of impulses (modalities), syntopy and innervated areas, palsy/irritation, reflexes, regional anesthesia, entrapment syndromes

• **Figures**: scheme of the course and main branches, dermatomes and sensitive innervation of the upper limb
37. **Lumbar plexus**

- **Main points:** nerves of the plexus and their course, branches, types of impulses (modalities), syntopy and innervated areas, palsy/irritation, reflexes, regional anesthesia, entrapment syndromes
- **Figures:** scheme of the course and main branches, dermatomes and sensitive innervation of the lower limb

38. **Sacral plexus**

- **Main points:** nerves of the plexus and their course, branches, types of impulses (modalities), syntopy and innervated areas, palsy/irritation, reflexes, regional anesthesia, entrapment syndromes
- **Figures:** scheme of the course and main branches, dermatomes and sensitive innervation of the lower limb

39. **Sympathetic trunk**

- **Main points:** general function of the autonomic nervous system and its sympathetic part (mediators, receptors), structure, types of impulses (modalities), location, ganglia, branches, innervated areas, syntopy, function, Claude Bernard-Horner's syndrome, pupillary reflex
- **Figures:** general structure of the spinal nerve, scheme of the course and main branches, scheme of the pupillary reflex

40. **Abdominal autonomic plexuses**

- **Main points:** general function of the autonomic nervous system and sympathetic part (mediators, receptors), structure, types of impulses (modalities), location, ganglia, branches, innervated areas, syntopy, function, Cannon-Boehm's point
- **Figures:** scheme of the course and main branches

41. **Cranial parasympathetic system**

- **Main points:** general function of the autonomic nervous system and its parasympathetic part (mediators, receptors), structure, types of impulses (modalities), location, ganglia, branches, innervated areas, syntopy, function
- **Figures:** scheme of the course and main branches
42. **Sacral parasympathetic system**

- **Main points:** general function of the autonomic nervous system and its parasympathetic part (mediators, receptors), structure, types of impulses (modalities), location, ganglia, branches, innervated areas, syntopy, function, Cannon-Boehm's point

- **Figures:** scheme of the course and main branches

**Group D: Central nervous system - yellow**

**Central nervous system**

1. **General structure of nervous system (neuron, glia, synapsis, mediators, receptors)**

   - **Main points:** types of neurons and glial cells, synapses, mediators, function
   - **Figures:** scheme of neuron and synapsis

2. **Spinal cord - grey matter**

   - **Main points:** external description of the spinal cord, including vessels and meninges, structure of the grey matter, nuclei and Rexed's laminae, their connections and functions
   - **Figures:** cross-section of the spinal cord

3. **Spinal cord - white matter and reflexes**

   - **Main points:** external description of the spinal cord, including vessels and meninges, structure of the white matter, spinal tracts, reflex arch, types of reflexes
   - **Figures:** cross-section of the spinal cord, scheme of a reflex arch

4. **Medulla oblongata, reflexes and function**

   - **Main points:** external description of the medulla oblongata, including vessels and meninges, nuclei, tracts, their connections and functions
   - **Figures:** cross-section of the medulla oblongata

5. **Pons, reflexes and function**
• **Main points**: external description of the pons, including vessels and meninges, division, nuclei, tracts, their connections and functions
• **Figures**: cross-section of the pons

6. **Mesencephalon, reflexes and function**

• **Main points**: external description of the mesencephalon, including vessels and meninges, division, nuclei, tracts, their connections and functions
• **Figures**: cross-section of the mesencephalon

7. **Reticular formation**

• **Main points**: location, division and structure, connections and functions
• **Figures**: scheme of the reticular formation

8. **Cerebellum - structure and function**

• **Main points**: external description of the cerebellum including vessels and meninges, internal structure, nuclei and their connections, functions of the cerebellum and their disorders
• **Figures**: structure of the cerebellar cortex

9. **Cerebellum - connections and function**

• **Main points**: overview of the afferent and efferent connections of cerebellum, functions of the cerebellum and their disorders
• **Figures**: simple scheme of the cerebellar tracts

10. **Diencephalon - division, epithalamus, subthalamus, metathalamus**

• **Main points**: external description, basic division and connections of the diencephalon, function
• **Figures**: frontal and horizontal cross-sections of the hemisphere

11. **Thalamus**

• **Main points**: external description, overview of the nuclei and their connections, function; thalamocortical connections
• **Figures**: frontal and horizontal cross-sections of the hemisphere

12. **Hypothalamus and pituitary gland**
• **Main points**: external description including vessels and meninges, division – nuclei, areae, their connections and function, relations between hypothalamus and pituitary gland, hormones, principles and importance of regulation
  • **Figures**: frontal and horizontal cross-sections of the hemisphere, cross-section of the pituitary gland

13. **Internal capsule and white matter of telencephalon**
  • **Main points**: description and basic division, tracts and their functions, vascular supply and consequences of its affection
  • **Figures**: frontal and horizontal cross-sections of the hemisphere

14. **Cortical functional areas**
  • **Main points**: overview of cortical areas, their afferent and efferent connections, functions and disorders, vascular supply
  • **Figures**: scheme of the hemisphere with marked cortical areas

15. **Basal ganglia**
  • **Main points**: division, structure, connections, function, mediators
  • **Figures**: scheme of circuits of the basal ganglia, frontal and horizontal cross-sections of the hemisphere

16. **Limbic system**
  • **Main points**: division, connections, function
  • **Figures**: Andersen’s circuit, Papez’s circuit

17. **Association and commissural connections of brain**
  • **Main points**: overview, explanation of terms, connections and functions
  • **Figures**: frontal and horizontal cross-sections of the hemisphere

18. **Motor tracts**
  • **Main points**: overview of tracts (pyramidal, extrapyramidal), connections, function
  • **Figures**: cross-sections of the spinal cord, scheme of tracts
19. **Sensory tracts**
   - **Main points**: overview of tracts (touch, pain, proprioception, cerebellar collaterals), connections, function
   - **Figures**: cross-section of the spinal cord, scheme of tracts

20. **Visual tract**
   - **Main points**: overview of tract, connections, function, collaterals, scotoma, pupillary reflex
   - **Figures**: scheme of tract

21. **Auditory and vestibular tracts**
   - **Main points**: overview of tracts, connections, function
   - **Figures**: scheme of tracts

22. **Olfactory and gustatory tracts**
   - **Main points**: overview of tracts, connections, function
   - **Figures**: scheme of tracts

23. **Meninges, brain ventricles and cerebrospinal fluid**
   - **Main points**: layers of meninges and spaces between them, organization of meninges of the brain and spinal cord, division, borders and communications of brain ventricles, cisternae and their content, production, circulation and absorption of the cerebrospinal fluid
   - **Figures**: topography of the vertebral canal, cross-section of the cranial meninges, cross-section of the ventricles

24. **Arteries of brain and spinal cord**
   - **Main points**: deep and superficial arteries, arteries of the spinal cord
   - **Figures**: circle of Willis, scheme of the vascular supply of the cortex

25. **Veins of brain and spinal cord**
   - **Main points**: deep and superficial veins, dural sinuses, veins of spinal cord
   - **Figures**: scheme of paired and unpaired venous sinuses, cross-section of the venous sinus, cross-section of the cavernous sinus
26. **Chemical systems of brain**
   - **Main points**: overview of chemical systems, their division, location and function
   - **Figures**: schematic connections and location of the particular systems

27. **Topography of cranial cavity**
   - **Main points**: division and contents of the whole intracranial cavity and its particular parts
   - **Figures**: tentorial notch

**Senses**

28. **Eye - anterior segment**
   - **Main points**: external and internal structure of the eye, production of the ventricular fluid, accommodation, innervation and vascular supply, corneal and pupillary reflexes
   - **Figures**: cross-section of the eye, iridocorneal angle

29. **Eye - posterior segment**
   - **Main points**: external and internal structure of the eye, detailed structure of the retina, innervation and vascular supply, visual tract
   - **Figures**: cross-section of the eye, eye fundus

30. **Accessory structures of eye**
   - **Main points**: structure of eyelids, division of conjunctiva, production and drainage of tears
   - **Figures**: cross-section of the eyelid, scheme of the lacrimal system

31. **Oculomotor muscles and topography of orbit**
   - **Main points**: origin, insertion, innervation and function of the muscles, their lesions, layers of orbit
   - **Figures**: scheme of muscle insertion and direction of movement during particular muscle action
32. **External ear**

- **Main points**: external description and structure of the auricle, external meatus and eardrum, topographic relations, vascular supply and innervation, principle of hearing, auditory tract
- **Figures**: otoscopic view of the eardrum

33. **Middle ear**

- **Main points**: structure of eardrum, division, borders and contents of the tympanic cavity, principle of hearing, auditory tract
- **Figures**: otoscopic view of the eardrum, medial wall of the tympanic cavity

34. **Internal ear**

- **Main points**: division, location and structure, endolymph and perilymph, function of particular compartments, vascular supply and innervation, receptor sites, principles of hearing and equilibrium and their disorders, auditory and vestibular tracts
- **Figures**: overview of membranous labyrinth, Corti's organ, receptors of vestibular system

35. **Smell**

- **Main points**: location of olfactory organ, structure, borders of nasal cavity, principles of smell perception, olfactory tract and its disorders, brain structures involved in olfaction
- **Figures**: olfactory tract

36. **Taste**

- **Main points**: location of the gustatory organ, structure, borders of the oral cavity and pharynx, principle of taste perception, gustatory tract and its disorders
- **Figures**: gustatory tract, innervation of tongue

37. **Touch**
• **Main points**: overview, structure and location of receptors, structure of skin, principle of touch perception, sensory tracts and their disorders, dermatomes
• **Figures**: scheme of sensory tracts, dermatomes

38. **Pain**

• **Main points**: overview, structure and location of pain receptors, structure of skin, principle of pain perception, sensory tracts and their disorders, dermatomes and Head's zones, slow and fast pain
• **Figures**: scheme of sensory tracts, dermatomes

39. **Interoceptors**

• **Main points**: overview, structure and location of interoreceptors, principle of touch perception, particular nerves and structures
• **Figures**: juxtaglomerular apparatus

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