FEDERAL STATE BUDGET EDUCATIONAL
HIGHER EDUCATION INSTITUTION
"ROSTOV STATE MEDICAL UNIVERSITY"
MINISTRY OF HEALTH OF THE RUSSIAN FEDERATION

FACULTY OF TREATMENT AND PREVENTION

Appraisal Fund
in the discipline "Topographic anatomy and operative surgery"

Specialty 05/31/01 General Medicine

2023

1. Interim certification form(test, test with assessment).

2. Type of intermediate certification(based on the results of current monitoring)

3. List of competencies formed by the discipline or in the formation of which the discipline participates

Code competencies	Content of competencies (results of mastering OOP)
OPK-7 OPK-9 OPK-11	Capable of using medical devices provided for in order providing medical help, A Also conduct examination of the patient to establish a diagnosis

4. Stages of developing competencies in the process of mastering the discipline

Sections of the discipline	Codes formed competencies
	OPK-4
Semester 5	
Section 1	+
Section 2	+
Section 3	+
Section 4	+
Section 5	+
Semester 6	
Section 6	+
Section 7	+
Section 8	+

5. Types of assessment materials in accordance with the competencies being developed

Code competencies	Forms of assessment tools	
	Current certification	Interim certification
OPK-7 OPK-9 OPK-11	Tests Oral survey Essay	based on the results of current control

6. Current control

List of test tasks for ongoing monitoring with standard answers (10 tasks as an example).

1. The selection operation is

1) an operation that can be chosen by the patient or the surgeon

2)**the best operation for the treatment of this disease, appropriate modern scientific achievements**

3) an operation that will eliminate the most severe consequences of the disease

4) an operation characterized by technical simplicity

2. Radical surgery is

1) operation performed simultaneously

2)**surgery that completely eliminates the pathological focus**

3) surgery to relieve pain

4) the most technically simple operation

3. Palliative surgery is

1)**surgery to eliminate the life-threatening main symptom of the disease**

2) surgery that completely eliminates the pathological focus

3) the simplest in technique

4) incorrectly selected operation

4. When opening a purulent cavity

1) no revision of the wound is performed

2) wound revision is performed only when complications develop

3)**revision of the wound is necessary to open purulent leaks and pockets**

4) wound revision is performed only in case of chronic inflammation

5. The group of auxiliary surgical instruments includes

5.scalpels.

6.scissors.

7.clamps.

8. tweezers.

6. The most common way to improve collateral circulation

1) paraarterial administration of novocaine

2)**crossing the artery wall between two ligatures to relieve spastic actions of vasoconstrictors**

3) regional hemoperfusion

4) massage

7. Ligation of the artery throughout this

1) ligation of the artery at a distance of 2-3 cm below the site of its damage

2) ligation of the artery in the proximal limb

3)**ligation of the artery outside the wound within healthy tissue proximally damage**

4) ligation of the artery together with the vein

8. When ligating the ulnar artery, the ligature needle should be placed

1)**from the ulnar nerve**
2) from the lateral side
3) from any side
4) “on my own”

9. Direct access to the artery is
1) straight cut
2) incision oriented along the longitudinal axis of the limb
3)**access strictly along the projection line of the artery**
4) access outside the projection line

10. Indirect access is
1) access across the course of the neurovascular bundle
2) incision oriented along the longitudinal axis of the limb
3) access strictly along the projection line of the artery
4)**access outside the projection line**

Oral survey
List of questions

1. Classification of operations.
2. Primary surgical treatment of wounds, principles of operation.
3. Primary and primary delayed suture of the wound. Secondary seams.
4. Methods for temporary and final stopping of bleeding.
5. Pressure points of the arteries on the limbs, head and neck.
6. Ligation of blood vessels in the wound and throughout.
7. Ways to improve collateral circulation.

Abstract topics:
1. History and modern development of topographic anatomy and surgical surgery.
2. Ethical and deontological aspects of topographic anatomy and operational surgery.
3. Pathogenetically based treatment of purulent diseases of the hand.
4. Amputation. Principles of performing amputations. Stump formation, prosthetics.
5. Craniotomy: types of operations, stages of implementation. Plastic surgery of skull defects after trepanation.
6. Coronary artery bypass grafting. Indications, technique.
7. Rationale for surgical approaches to the heart and pericardium.
8. Surgical treatment of Hirschsprung's disease
9.Operations for ectopic pregnancy.

7. Interim certification

Interview

List of questions for intermediate certification

Topographic anatomy

1.Topographic anatomy of the subclavian region. The boundaries of the three triangles of the region, the branches of the axillary artery within their limits. Subclavian fossa, subclavian vessels. Fascia and subpectoral cellular spaces. Neurovascular bundles of the pectoral muscles. Clinical significance of topographic and anatomical features of the area.

2. Topographic anatomy of the scapular region. Muscular layers, supra- and infraspinatus fossae, vessels and nerves included in them. Scapular arterial anastomosis, its significance. Connection with other areas, three-way opening.
3.Topographic anatomy of the deltoid region. Deltoid muscle, sections, attachment on the shoulder, blood supply, innervation, function. Deltoid pectoral groove. Subdeltoid space, contents. Connections with other areas.
4. Shoulder joint: articular surfaces, capsule and its weak points, ligaments, muscles, movements. Intra-articular synovial volvulus and extra-articular synovial bursa.

5.Topographic anatomy of the axillary region: walls and the muscles that form them, fascia, layers of fiber. Axillary artery and vein. Projections of the artery and its branches. Nerve bundles and the nerves formed from them. Vessels and nerves located on the walls of the armpit. Groups of lymph nodes. Connection of the axillary region with the fiber of other areas.
6.Topographic anatomy of the shoulder. Fascial beds and muscle groups of the shoulder. Blood supply, innervation and function of the shoulder muscles. Biceps grooves. Three neurovascular bundles of the shoulder: composition, position. Branches of the brachial and deep brachial arteries. Saphenous veins. Cutaneous nerves.
7.Topographic anatomy of the elbow region. Elbow fossa, walls and bottom. Topographic anatomy of the brachial artery, its bifurcation and the median nerve. Medial and lateral vessels and nerves. Ulnar arterial anastomoses. Tendon strain of the biceps muscle. Saphenous veins. Elbow joint: articular surfaces, position of the condyles and epicondyles of the humerus. The capsule, its weak points, the anterior and posterior parts of the joint, ligaments. Olecranon process, synovial bursae, relationship with the epicondyles of the shoulder during movements and injury. 9.Topographic anatomy of the forearm. Anterior region: muscle layers, neurovascular bundles, fiber layers, Pirogov's space. Posterior region of the forearm: layers of muscles, blood vessels, nerves, layers of fiber. Connection between the anterior and posterior regions of the forearm. 10.Topographic anatomy of the hand. Projection of the main anatomical formations. Carpal tunnel, radial and ulnar carpal tunnels. Articular surfaces of the wrist joint. Synovial bursae of the palm, tendon sheaths of the fingers. Superficial and deep arterial arches of the palm and their branches.

11.Fascial beds of the palm. Composition of the elevations of the 1st and 5th fingers. Median fascial bed of the palm. Palmar aponeurosis, layers of fiber. Vermiform and interosseous muscles. Paths for the spread of pus in depth, to the back of the hand and to the forearm. Topography of the median, radial and ulnar nerves on the hand.
12.Topographic anatomy of the subpupartian space, vascular and muscular lacunae. Femoral triangle, neurovascular bundle of the thigh. Branches of the femoral artery. Deep femoral artery and its branches.
13. Topographic anatomy of the femoral canal: internal and external openings, their position and sides. Walls of the femoral canal. The mechanism of formation of a femoral hernia. "Crown of Death".
14.Topographic anatomy of the anterior thigh, leaves of the fascia lata, anterior and medial muscle groups. Obturator canal. Adductor canal: walls, openings, contents. Projection of the femoral artery and femur. Great saphenous vein. Cutaneous nerves. Topographic anatomy of the posterior thigh, posterior muscle group, sources of blood supply, innervation, function. Projection of the sciatic nerve.

15.Topographic anatomy of the gluteal region. Greater and lesser sciatic foramina. Supra- and infrapiriform foramina, their contents. Subcutaneous tissue and gluteal fascia. Muscle layers, blood supply, symptoms of impaired innervation. Topography of the sciatic nerve. Cutaneous nerves.
16. Hip joint: articular surfaces, capsule, femoral neck, greater and lesser trochanters. Intra- and extra-articular ligaments. Sources of blood supply. Malformations of the hip joint.
17.Topographic anatomy of the knee region. Popliteal fossa, its walls. Place of division and branches of the sciatic nerve. Popliteal neurovascular bundle, position of its elements. Branches of the popliteal artery, its division into terminal branches. Topography of the gill's fossa: walls, position of the elements of the popliteal neurovascular bundle. 18.Topographic anatomy of the knee joint: articular surfaces, menisci, intra- and extra-articular ligaments, capsule. Synovial volvulus. Patellar ligament, insertion site. Extra-articular bursae, their clinical significance. Arterial network of the knee joint.
19.Topographic anatomy of the lower leg. Anterior region: muscle groups, blood supply, innervation, function, equine foot symptom. Anterior neurovascular bundle. Posterior region: muscle groups, calcaneal tendon, posterior neurovascular bundle, “stuck heel” symptom. The tibiofibular, superior and inferior musculofibular canals. Saphenous veins of the leg. Cutaneous nerves.
20. Topographic anatomy of the ankle joint: articular surfaces, fixation apparatus, ankle canal.
21.Topographic anatomy of the foot: position of the dorsal artery of the foot, posterior tibial artery, beginning of the great saphenous vein. Position of Chopard and Lisfranc joints. Plantar aponeurosis, fascial beds of the sole. Neurovascular bundles of the sole, arterial arch. Arch of the foot, types of flat feet. Congenital clubfoot.

22.Topographic anatomy of the fronto-parieto-occipital region, layer-by-layer structure, features of each layer. Causes of prolonged and heavy bleeding in soft tissue wounds. Scalp, features of scalped wounds. Layers of fiber, characteristics of extracranial hematomas.
23.Cranial vault: structure of bone, membranes of the brain. Localization of intracranial hematomas, clinical manifestations. Inner base of the skull, cranial fossae. Clinical manifestation of skull base fractures.
24. Arterial blood supply to the brain, topographic anatomy of the vertebral and internal carotid arteries, Circle of Willis and its branches. Sinuses of the dura mater, venous outlets.
25.Topographic anatomy of the temporal region: layered structure, temporal muscle, layers of fiber. Topographic anatomy of the superficial temporal artery and middle meningeal artery.
26.Topographic anatomy of the mastoid region. Connection with the tympanic cavity. Complications of otitis media. Shipo safety triangle. Mastoid graduate, sigmoid sinus and internal jugular vein.
27. Areas of the facial part of the head. Facial artery and branches of the external carotid artery on the face. Veins of the face, their connection with the intracranial sinuses. "Danger zone" on the front area of the face.
28.Topographic anatomy of the branches of the trigeminal nerve, zones of innervation, sensory and motor nerves. Infraorbital foramen, “lesser crow’s foot”. Submental foramina and their contents. Clinical manifestations of trigeminal neuritis.

29.Topographic anatomy of the facial nerve and its branches. Mimic muscles. "Big crow's foot." Clinical manifestations of neuritis of the facial nerve.

30. Topographic anatomy of the parotid, submandibular and sublingual salivary glands and their ducts. The lower, middle and upper nasal passages are what opens into them. 31.Topographic anatomy of the anterior neck, lateral and medial triangles. Subdividing each of them into additional triangles. Region of the sternocleidomastoid muscle. The small and large subclavian fossae and their clinical significance.

32. Fascia of the neck according to V.N. Shevkunenko and according to the international anatomical nomenclature. Applied significance of fascial construction of the neck according to Shevkunenko.
33.Topographic anatomy of the submandibular triangle. Fascia of the neck within its limits. Submandibular salivary gland. Pirogov's triangle.
34.Topographic anatomy of the carotid triangle, the fascia of the neck within its limits. The main neurovascular bundle of the neck, its elements, fiber, fascial sheath, projection. Place of compression of the common carotid artery.
35. Level of bifurcation of the common carotid artery. Carotid sinus, its pressure point, clinical significance. The course of the internal carotid artery in the neck. Branches of the external carotid artery in the neck.
36.Topographic anatomy of the jugular veins. Jugular suprasternal venous anastomosis.
37. Lateral triangle of the neck, fascia of the neck within it. Layers of fiber. Horizontal neurovascular bundle. Projection of the subclavian artery, brachial plexus and dome of the pleura. Where does lymph flow from to the supraclavicular nodes of the neck? Connection of the lateral triangle of the neck with other areas.
38.Topographic anatomy of the cellular spaces of the neck. The fascia and contents that limit them. The connection of the tissue spaces of the neck with the tissue of other areas and among themselves, the ways of spreading the infection.
39. Topographic anatomy of the pharynx and cervical esophagus, the first narrowing of the esophagus, esophageal-tracheal grooves. Retropharyngeal tissue, clinical significance. Connection with the parotid gland.
40.Topographic anatomy of the larynx: position, cartilage of the vocal cords and the level of their location. Ligament between the thyroid and cricoid cartilages. Topographic anatomy of the trachea, tracheal cartilage, relationship to surrounding organs. Pretracheal fiber and its contents.
41.Topographic anatomy of the thyroid gland: sections, position, capsules. Arteries of the thyroid gland, places of their origin and entry into the gland. Parathyroid glands. Recurrent laryngeal nerve. "Danger zone" of the thyroid gland. Position of the isthmus in children, pyramidal lobe of the gland.
42.Thorax, soft tissues and bone frame. Topographic anatomy of intercostal spaces, intercostal neurovascular bundle. Intrathoracic fascia, chest cavity, parts of the chest cavity. Parietal pleura, dome sections, sinuses. Transition of the parietal pleura into the visceral, pulmonary ligament.
43. Topographic anatomy of the mammary gland: position, capsule, lobules, subcutaneous tissue, isola, nipple. Suspensory ligament, Cooper's ligament. Lymphatic networks of the mammary gland. Symptoms of skin retraction and “lemon peel” in cancer. Lymphatic flow paths and regional lymph nodes. Intramammary and retromammary fiber. Sources of mastitis. Blood supply to the mammary gland.

44.Topographic anatomy of the diaphragm: sections, tendon center, position of the dome on the left and right, blood supply. Sternocostal and lumbocostal triangles. Diaphragm openings and their contents. Paraesophageal hernias, possible complications. Malformations of the diaphragm.
45.Topographic anatomy of the lungs: gate, root, root elements on the left and right. Tracheal bifurcation, main bronchi, bronchial tree. Definition of broncho-

pulmonary segment. Lobar and segmental structure of the right and left lungs. Blood supply to bronchopulmonary tissue. Lymphatic drainage and groups of lymph nodes 46. Mediastinum: boundaries, division into upper, anterior, middle and posterior mediastinum. Organs of each part of the mediastinum. Fascial - cellular spaces, lymph nodes and reflexogenic zones of the mediastinum.
47. Topographic anatomy of the pericardium: pericardial layers, pericardial cavity and its sinuses. Phrenic nerves and pericardial-phrenic arteries. Topographic anatomy of the heart: the anterior, inferior and posterior surfaces that form their parts of the heart. 48. Topographic anatomy of the ascending aorta, aortic arch and pulmonary trunk. Vagus nerves, left recurrent nerve, ligament arteriosus. Superior vena cava. Topographic anatomy of the azygos and semi-gypsy veins. Thoracic lymphatic duct and sympathetic trunks.
49. Topographic anatomy of the esophagus: sections, narrowings, relation to the trachea, aorta, tissue of the posterior mediastinum. Sources of blood supply. Position of the vagus nerves.
50. Anterior abdominal wall: borders, lateral and medial sections. Horizontal and vertical conditional lines. Epigastrium, mesogastrium and hypogastrium. Areas of each department.
51. Lateral section of the anterior abdominal wall, layered structure, oblique and transverse muscles, their aponeuroses, linea semilunaris. Intermuscular vessels and nerves.
52.Medial abdominal wall: layered structure, walls of the rectus abdominis vagina above and below the navel. Semicircular line, clinical significance. Rectus abdominis muscle, tendon bridges, blood supply and innervation. Caval-caval and porto-caval anastomoses on the abdominal wall.
53. Weak spots of the abdominal wall: definition, clinical significance, localization. Topographic anatomy of the inguinal canal: walls, openings, spermatic cord. Inguinal triangle and inguinal space. Due to what formations the posterior wall of the inguinal canal is strengthened.
54.Topographic anatomy of the white line: width, thickness, clinical significance. Umbilical ring: layered structure, upper and lower hemispheres, clinical significance. Urinary and intestinal umbilical fistulas.
55.Topographic anatomy of the inner surface of the lower part of the anterior abdominal wall. Folds and pits of the peritoneum. Contents of folds, projection of pits onto the skin of the abdominal wall, clinical significance.
56.Definition of an external abdominal hernia, elements of a hernia, the mechanism of hernia formation and factors contributing to it. The concept of eventration and organ prolapse. Classification of external abdominal hernias by location, origin and clinical course. Hernias are free, irreducible and strangulated. Types of intestinal strangulation in a hernia.
57. Topographic anatomy of inguinal hernias, initial, canal, inguinal, scrotal hernias. Indirect and direct hernias, their differences. Mild, transitional, complex forms of inguinal hernias, depending on the size of the inguinal ring, hernial sac and the condition of the posterior wall of the inguinal canal.
58.Topographic anatomy of congenital inguinal hernias. Variants of violation of the fusion of the vaginal process of the peritoneum. Topographic anatomy of sliding hernias, which inguinal hernias are most often sliding and which organs “slip” into the hernia.
59. Topographic anatomy of femoral hernias, differential signs of their difference from inguinal hernias. Frequency of inguinal and femoral hernias in men and women. The vessels surrounding the hernial sac, the “crown of death.”

60. Topographic anatomy of hernias of the white line of the abdomen. Diastasis of the rectus abdominis muscles. Topographic anatomy of umbilical hernias. Fetal hernias.
61. Lateral abdominal hernias, their localization, frequency. Recurrent and postoperative hernias; ventral hernias are small, large and giant. Clinical manifestations, possible complications, features of surgical treatment.
62. Abdominal cavity, abdominal and peritoneal cavities. Parietal and visceral peritoneum, relationship of organs to the peritoneum. Ligaments, folds, pockets of the peritoneum. Mesenteries, mesenteric sinuses. Contents, clinical significance. Lateral channels of the abdominal cavity.
63. Upper floor of the abdominal cavity: boundaries, communication routes with the lower floor. Organs of the upper floor, their relationship to the peritoneum. Branches of the celiac trunk and blood supply to the organs of the upper floor. Venous outflow, projection onto the abdominal wall. Peritoneal bursae: omental, hepatic, pregastric. Walls, clinical significance. Lesser omentum: structure, contents. Greater omentum: structure, blood supply, clinical significance, use in surgery.
64. Lower floor of the abdominal cavity: borders, lateral canals. Root of the mesentery of the small intestine, mesenteric sinuses, clinical significance. Sections of the small and large intestine, relation to the peritoneum. The system of the superior mesenteric artery and the system of the inferior mesenteric artery, their anastomoses. Blood supply to the small and large intestines. Venous drainage. Projection of the organs of the lower floor onto the anterior abdominal wall. 65.Topographic anatomy of the stomach: sections, ligaments, their contents. Arteries of the lesser and greater curvature of the stomach. Venous outflow, portocaval anastomosis. Abdominal esophagus, topography of the vagus nerves. Acid-producing zone of the stomach, significance in pathology.
66. Topographic anatomy of the duodenum: sections, relation to the peritoneum. Position in the retroperitoneal tissue and spine. Communication with the pancreas and biliary tract. Major and minor duodenal papillae, sphincter of Oddi. Blood supply, anastomosis between the celiac trunk system and the superior mesenteric artery. Causes of duodenal obstruction in connection with the peculiarities of the anatomical structure of the pancreato-duodenal zone.
67.Topographic anatomy of the small intestine, sections, length, duodenal-jejunal flexure and ileocecal angle. Mesentery of the small intestine and root, clinical significance. Topographic anatomy of the large intestine: sections, relation to the peritoneum. Arteries of the colon to each of its sections. Distinctive features of the large intestine from the small intestine.
68.Topographic anatomy of the digestive tube: layers of the esophagus, stomach, small and large intestine. The significance of each layer in physiology and surgery. Outer and inner cases of the intestine. Intraorgan vessels of the small and large intestine. 69.Topographic anatomy of the liver: position, relationship to the peritoneum, surface, ligaments, fixing apparatus. Fissures, gates of the liver. The liver capsule and its branches inside the liver (Glissonian system).
70.Lobes of the liver in anatomy. Features of intrahepatic blood flow. Division of the liver according to its vascular-secretory structure. Quino and Shapkin's schemes. Segments, sectors, lobes, halves of the liver.
71. Biliary system: intrahepatic ducts, extrahepatic bile ducts. Gall bladder, cystic duct, common bile duct, its sections. Calot's triangle and the position of the cystic artery.

72.Topographic anatomy of the spleen: position, relationship to the peritoneum, ligaments, hilum. Splenic artery, arterial segments of the spleen, branches of the splenic artery. Splenic vein.
73.Topographic anatomy of the pancreas: position, relationship to the peritoneum, surrounding tissue, ligaments. Divisions of the pancreas

blood supply to each department. The ducts of the gland, where they open, which parts of the gland drain. Pathological processes in the abdominal cavity associated with pancreas diseases.
74.Topographic anatomy of the lumbar region: boundaries, sections, muscle layers of the medial and lateral sections. Weak points of the lumbar region are the Petit triangle and the Lesgaft-Grunfeld diamond. Projection of the kidneys and their hilum, ureters.
75.Topographic anatomy of the retroperitoneal space: anterior and posterior borders, retroperitoneal fascia, layers of retroperitoneal tissue, clinical significance. Organs of the retroperitoneal space, their origin.
76.Topographic anatomy of the kidneys: position, nephroptosis, kidney dystopia, fixation apparatus. Kidney capsules. Renal pedicle, its composition. Arterial segments of the kidneys. The hilum of the kidneys and their projection onto the anterior abdominal wall.
77. Topographic anatomy of the pyelocaliceal system of the kidneys and ureters. Sections of the ureters, constrictions, blood supply. Kidney abnormalities. Topographic anatomy of the adrenal glands: position, capsule, blood supply.
78. Abdominal aorta and its branches. Inferior vena cava. Sympathetic trunk and nerve plexuses of the retroperitoneum. The thoracic lymphatic duct and groups of retroperitoneal lymph nodes.
79. Osseous-ligamentous base of the pelvis, large and small pelvis. Parietal muscles, pelvic diaphragm. Urogenital diaphragm. The course of the pelvic peritoneum, the rectovesical recess, the rectouterine and vesicouterine recesses in women, clinical significance.
80. Floors of the pelvis and the organs located in them. Cellular spaces of the pelvis, localization of intrapelvic abscesses. Chronic fistulous paraproctitis.

81.Topographic anatomy of the perineum, scrotum and testicles. Cryptorchidism, monorchism, anorchism.
82.Topographic anatomy of the bladder: sections, position, relationship to the peritoneum, layers of fiber, blood supply. Topographic anatomy of the urethra in men, sections, epispadias and hypospadias, phimosis and paraphimosis.
83.Topographic anatomy of the rectum: sections, position, relationship to the peritoneum, fascia and fiber layer. Arteries of the rectum. Venous system and venous outflow. Porto-caval anastomosis.
84.Topographic anatomy of the uterus: sections, position, relationship to the peritoneum, ligaments and layers of fiber, uterine appendages. Blood supply to the uterus, fallopian tubes and ovaries. Cervix, anterior and posterior vaginal vault.
85. Spine and spinal canal. Individual and age-related differences in the spine and spinal cord. Spinal cord, membranes, nerve roots. Skeletotopy of spinal segments. Blood supply, venous outflow.

Operative surgery

1. Classification of operations on joints. Basic requirements for joint surgery. Anterior arthrotomy of the shoulder joint. Lateral parapatellar arthrotomy of the knee joint.

2. Puncture of the shoulder joint: anterior, lateral, posterior puncture technique, failures and complications. Puncture of the elbow joint: posterior, posterolateral. The need for puncture of the elbow joint from two points. Elbow bursitis, treatment options. Puncture of the knee joint: indications, points and puncture technique. Prepatellar bursitis, treatment options.
3. Treatment of fractures of long tubular bones using methods of closed reduction and skeletal traction. Technique and stages of skeletal traction, necessary equipment and tools. Locations of the wires for fractures of the femur, tibia, and shoulder.

4. Necessary conditions for fracture healing without complications. Osteosynthesis: definition, types, requirements for stable osteosynthesis. Types of compression osteosynthesis. Surgical approaches to the humerus and femur.
5. Osteotomy: definition, goals of the operation, types of osteotomy. Bone trephination, excochleation of bone cavities, bone resection, bone grafting. Arthrodesis operations, types of arthrodesis. The degree of movement disorders in the joint. Arthrorrhiza, arthroplasty. Joint transplantation and joint endoprosthetics.
6. Exposure and ligation of the axillary artery: skin incision line, technique for isolating vessels from the neurovascular bundle, rational level of ligation, collateral circulation. Exposure and ligation of the brachial artery: incision line, permissible level of ligation, result collateral circulation.
7. Exposure and ligation of the femoral artery: surgical access, rational level of ligation, result, collateral circulation. Exposure and ligation of the popliteal artery: surgical approaches from the popliteal and gill fossa, results of ligation, collateral circulation.

8.Types of bleeding. Pulsation detection points on the limbs. Methods for temporarily and permanently stopping bleeding. Pressure points of the arteries on the limbs, head and neck. Ligation of blood vessels in the wound and throughout. Ways to improve collateral circulation.
9. Operations for arterial aneurysms according to Anel, Gunter, Antillus and Filagrius. Plastic surgery, prosthetics and vascular bypass surgery. Thrombectomy and intimectomy. Temporary arterial replacement for injuries.
10. Vascular suture, types, classification. Basic requirements for a vascular suture. Tools and suture material. Complications of the vascular suture. Carrel seam and modifications; Briand-Jabouley and Bakulev sutures; intussusception sutures. General information about vascular microsurgery and endovascular surgery.
11. Vein operations: puncture, venesection, catheterization of central veins. Operations for varicose veins of the lower extremities: Troyanov-Trendelenburg, Madelung, Babcock methods.
12.Primary and secondary suture of the nerve. Nerve suture technique. Neurolysis. Ways to bring the ends of the nerve together without tension.
13. Tendon suture according to Brown, Cuneo, adaptation suture according to Benel. Heel tendon plastic surgery.
14. Definition of amputation and disarticulation. Primary, secondary and late amputations. Circular and flap amputations, advantages and disadvantages. Types of amputations depending on the method of covering the bone stump.
15. Stages of amputation and features of each stage. Basic principles of limb prosthetics after amputation. Features of limb amputations in children.
16. Amputation of the hip according to Pirogov. Single- and double-flap leg amputations. Osteoplastic amputation of the thigh according to Gritti-Schimanovsky-Albrecht and tibia according to Pirogov.
17. Amputation of the shoulder and forearm. Abmutation and disarticulation of the fingers. Sharp foot amputation. Disarticulation of the toes according to Gorangeau.
18. Types of panaritium. Operations for felon. Opening of subgaleal and subfascial phlegmons of the palm. Opening of phlegmon of Pirogov space. 19.Primary surgical treatment of wounds, principles of operation, primary and primary delayed suture of the wound. Secondary seams. Drainage of wounds.
20. Primary surgical treatment of cranial wounds, preparation of the patient, anesthesia. Treatment of soft tissue, bone, dura mater, damaged brain tissue. Removal of hematomas and stopping bleeding from the vessels of the subcutaneous tissue, aponeurosis, bone, dura mater, and brain matter. Operations for wounds of the dural sinuses.

21. Decompression craniotomy: indications, patient preparation. Lumbar puncture. Stages of the operation. Closure of bone defects in the long term.
22. Osteoplastic craniotomy: indications, stages of surgery. The difference between osteoplastic trepanation and decompression.
23. Trepanation of the mastoid process: indications, preparation of the patient. Shipo safety triangle. Technique and sequence of operation. Possible errors and complications.
24.Topographic-anatomical rationale for incisions on the face. Treatment and suturing of facial wounds. Treatment of wounds with soft tissue defects. Incisions for purulent mumps.
25.Operations for phlegmon of the neck of various localizations - submandibular, floor of the mouth and other cellular spaces of the lateral and medial triangles of the neck. 26. Cervical vagosympathetic blockade according to A.V. Vishnevsky: indications, position of the patient, injection point and direction of the needle. Signs of blockade effectiveness: Horner's triad and Claude Bernard syndrome. Conduction block of the cervical plexus according to Kulenkampf.

27.Upper and lower tracheostomy: indications, skin incisions, surgical technique. Typical mistakes and complications, prevention and control.
28. Emergency laryngotomy in out-of-hospital conditions: conicotomy and cricotomy, advantages and disadvantages, late complications.
29. Resection of the thyroid gland according to Nikolaev: stages of the operation, prevention of intraoperative complications - bleeding, damage to the recurrent laryngeal nerves, removal of the parathyroid glands.
30. Surgeries on the mammary gland for intramammary and retromammary mastitis. Operations for benign breast tumors.
31. Radical operations for breast cancer: mastectomy according to Halsted-Meyer, extended mastectomy, sparing mastectomy according to Patty-Disson.
32. Puncture of the pleural cavity: indications, patient position, instrumentation, anesthesia. Mandatory rules for performing a puncture. Needle insertion points for removing liquid and gas. Possible complications, prevention and control. 33. Surgical approaches to the chest: sternotomy, types, advantages, disadvantages, indications for use, features of wound suturing. Thoracotomy: types, technique, wound suturing.

34. Pneumothorax and its types. Providing first aid for different types of pneumothorax. Operations for pneumothorax.
35. Residual pleural cavities, methods of treating residual cavities, starting with the simplest. Drainage of the pleural cavity through the intercostal space and with rib resection, indications, technique.
36. Puncture of the pericardial cavity: indications, puncture points, puncture technique according to Larrey. Puncture of the heart cavity during clinical death: the point of needle insertion, medications injected into the heart chamber.
37. Operations for heart defects: surgical approaches, mitral commissurotomy technique, heart valve transplantation, operations for coarctation of the aorta. Operations for patent ductus arteriosus, endovascular ductus occlusion.
38. Surgical treatment of coronary heart disease: palliative operations, omentocardioplexy, ligation of the internal mammary artery (Fieschi operation); radical operations: mammary coronary anastomosis, coronary artery bypass grafting. Methods for dilation of coronary arteries.
39. Operations on the esophagus: surgical approaches to the upper, middle and lower third of the esophagus. Resection of the esophagus for cancer according to Torek-Dobromyslov. Surgery for esophageal atresia in newborns. Methods of plasty of the esophagus with a segment of intestine according to P.A. Herzen and S.S. Yudin, retrosternal plasty of the esophagus according to P.I. Eremeev.

40. Indications and contraindications for surgery for external abdominal hernia, the purpose of the operation. Stages of hernia repair using the example of an uncomplicated inguinal hernia. Plastic surgery of hernial orifices using local tissues and synthetic materials.

41. Features of operations for congenital and sliding inguinal hernias. Operations in children without opening the inguinal canal, methods of Ru-Krasnobaev and Kocher. Operations for ventral hernias.

42.Operations for inguinal hernias with strengthening of the anterior wall of the inguinal canal. Methods of Girard, Spassokukotsky, Kimbarovsky, Martynov.

43.Operations for inguinal hernias with strengthening of the posterior wall of the inguinal canal. Methods of Bassini, Kukudzhanov, Postempsky.

44.Operations for femoral hernias. Femoral methods of Bassini and Prokunin. Methods from the inguinal access according to Ruggi and Parlaveccio.

45.Operations for umbilical hernias. Methods of Lexer, Mayo, Sapezhko. Features of operations for congenital umbilical hernias. Operations for hernias of the white line of the abdomen and diastasis of the rectus muscles according to Napalkov.

46.Operations for strangulated inguinal and femoral hernias: indications, purpose of the operation, stages of the operation. Features of the operation for necrosis of hernial contents and phlegmon of the hernial sac.

47. Laparotomy and its types. Advantages and disadvantages of various types of laparotomies. Abdominal puncture and laparoscopy. General information about endoscopic operations. Drainage of the abdominal cavity.

48. Gastrotomy: indications, surgical access, surgical technique in different parts of the stomach. Gastrostomy: indications, types, surgical approaches. Operations according to Kader, Witzel, Topver, Yukhtin, advantages and disadvantages. Pyloromyotomy according to Fred-Ramstedt for congenital pyloric stenosis.

49. Gastroenteroanastomosis: indications, Gastroenteroanastomosis, kinds, operational accesses. according to Welfler, Brown. Gakker and Petersen.

50. Pyloroplasty: indications, types, surgical approaches. Pyloroplasty according to Heineke-Mikulich, Finei, Judd, gastroduodenoanastomosis according to Zhabulei.

51. Resection of the stomach: indications, types of resection depending on the part being removed and the volume of resection, surgical approaches. Operation Billroth I, modifications of Gorsley, Finney, Kocher, advantages, disadvantages, complications.

52. Resection of the stomach according to Billroth II, modifications of Hoffmeister-Finsterer, Balfour. Gastrectomy: indications, surgical approaches, types of anastomoses after removal of the stomach. Post-resection syndromes.

53.Suturing of a perforated ulcer of the stomach and duodenum.

54. Vagotomy, types, surgical technique. Palliative operations for dilated esophageal veins and gastric bleeding.

55. Intestinal suture: definition, types of suture, suture material. Lambert's principles of peritonesis. Lambert, Albert, Schmiden, Mateshuk sutures, purse-string and Z-shaped sutures.

56. Resection of the small intestine: access, stages of surgery, types of intestinal anastomoses, technique of their application. Comparative characteristics of end-to-end and side-to-side anastomoses.

57.Suturing wounds of the large and small intestine. Enterostomy and colostomy: indications, types, surgical technique. Unnatural anus: indications, types, surgical technique.

58. Appendectomy: surgical approaches, stages of an oblique appendicular incision, position of the appendix and its location, methods of isolating and removing the appendix. Operations for Meckel's diverticulum.

59. Resection of the transverse colon and sigmoid colon. Right and left hemicolectomy. Scope of surgery for colon cancer of different locations. Operations for Hirschsprung's disease in children.

60. Operative access to the liver and biliary tract. Operations for linear wounds of the liver: features of liver revision, methods of temporary and permanent bleeding control. Suturing liver wounds.
61.Typical liver resections: indications, hemihepatectomy, resection of liver lobes and segments. Methods for isolating resected parts of the liver, covering the wound surface.
62. Atypical liver resections: indications, types, hemostatic sutures, resection technique and covering the wound surface. Types and techniques of hepatopexy. Operations for liver echinococcus.
63. Gallbladder operations: indications, types and stages of cholecystectomy. Indications and methods of cholecystostomy.
64.Operations on the biliary tract. Choledochotomy, external and internal drainage of the common bile duct. Biliodegestive anastomoses. Laparoscopic operations on the gallbladder.
65.Operations for diseases and injuries of the spleen: splenectomy and organ-preserving operations. Operative approaches and surgical technique.
66. Surgeries on the pancreas for acute pancreatitis, drainage of the omental bursa. Surgeries for cancer of the head of the pancreas and the papilla of Vater. Operations for stenosis of the papilla of Vater.
67. Perinephric block according to A.V. Vishnevsky: indications, position of the patient, needle insertion point, blockade technique.
68. Operative approaches to the kidneys and ureters, classification and types. Technique of surgical approaches according to Fedorov and Bergmann-Israel, transperitoneal access.
69. Kidney removal operations: indications, stages of the operation. Features of kidney removal in case of injury, cancer, hydro- and pyonephrosis. Kidney transplantation.
70. Dissection of the kidney and its pelvis, indications, methods and techniques of operations. Nephrostomy and pyelostomy. Nephropexy and its types. General concept of extracorporeal kidney surgery.
71. Methods of kidney resection: indications, stages and technique of operations, advantages and disadvantages. Operations on the ureteropelvic segment when it is narrowed.
72. Operations on the ureters: dissection, suture of the ureter, transplantation into the large intestine, plastic surgery of ureteral defects with a segment of the intestine and the wall of the bladder according to Boari. Ureterocystoneostomy.
73. Bladder puncture: indications, technique. Cystostomy: indications, surgical technique. Suturing bladder wounds. Operations for prostate adenoma: transvesical and transurethral adenomectomy.
74. Operations for hemorrhoids. Fixation of the rectum in case of prolapse according to Kümmel-Zerenin. General information about operations for rectal cancer: anterior resection, types of rectal extirpation.
75. Blockade of the spermatic cord according to Lorin-Epstein and pelvic blockade according to Shkolnikov-Selivanov.
76. Operations to bring the testicle into the scrotum for cryptorchidism and testicular hydrocele. Operations for phimosis and paraphimosis. Operations for pararectal fistulas.
77. Diagnostic puncture of the posterior vaginal vault. Surgery for impaired tubal pregnancy: access, surgical technique. Surgery for ovarian rupture.
78. Spinal anesthesia: lumbar puncture technique, puncture points. Epidural anesthesia.
79. Subject and tasks of topographic anatomy. The role of Russian scientists in the formation and development of the domestic school of topographic anatomy and operative surgery. Basic concepts of topographic anatomy: region and its boundaries, projection of anatomical formations onto the surface, holotopy, skeletopy, syntopy of organs, fascial sheaths, neurovascular formations, cellular spaces,

collateral circulation. Modern methods of studying topographic anatomy.

80. Subject and objectives of operative surgery. The doctrine of surgical operations. Classifications of surgical operations. Elementary surgical actions, surgical techniques, stages of surgery. Surgical instruments and their classification. Ethics and deontology.

8. Description of indicators and criteria for assessing competencies at the stages of their formation, description of assessment scales

	Levels of competency development		
	Threshold	*Sufficient*	*High*
Criteria	Competence formed. Demonstrated threshold, satisfactory level sustainable practical skill	Competence formed. Demonstrated sufficient level independence, sustainable practical skill	Competence formed. Demonstrated high level independence, high adaptability practical skill

Competency assessment indicators and rating scales

Grade "unsatisfactory" (not accepted) or absence formation competencies	Grade "satisfactorily" (passed) or satisfactory (threshold) level of development competencies	Rated "good" (passed) or sufficient level development competencies	Excellent rating (passed) or high level development competencies
failure to student on one's own demonstrate knowledge when solving assignments, lack independence in application of skills. Absence confirmation availability	student demonstrates independence in application of knowledge skills and abilities to solve educational tasks in full According to sample given teacher, by tasks, solution	student demonstrates independent application knowledge, skills and skills at solving tasks, similar samples that confirms Availability	student demonstrates ability to full independence in choosing a method solutions non-standard assignments within disciplines with using

formation competencies indicates negative development results academic discipline	of which there were shown teacher, it should be considered that competence formed on satisfactory level.	formed competencies for higher level. Availability such competence on sufficient level indicates sustainable fixed practical skill	knowledge, skills and skills, received as in development progress given disciplines and adjacent disciplines should be considered competence formed at a high level.

Criteria for evaluating forms of control:

Interviews:

Mark	**Descriptors**		
	strength of knowledge	**ability to explain the essence phenomena, processes, do conclusions**	**logic and subsequence answer**
Great	strength of knowledge, knowledge of basic processes subject matter being studied areas, the answer differs in depth and completeness disclosure of the topic; possession terminological apparatus; logic and consistency answer	high skill explain the essence phenomena, processes, events, draw conclusions and generalizations, give reasoned answers, give examples	high logic and subsequence answer
Fine	solid knowledge of the basic processes of the studied subject area, differs in depth and completeness of the topic; possession terminological apparatus; free mastery of monologue speech, but one or two inaccuracies in the answer are allowed	ability to explain essence, phenomena, processes, events, draw conclusions and generalizations, give reasoned answers, give examples; however one or two inaccuracies in the answer are allowed	logic and subsequence answer
satisfactory really	satisfactory process knowledge subject matter being studied areas, answer, different insufficient depth and completeness of the topic; knowledge of basic theoretical issues.	satisfactory ability to give reasoned answers and provide examples; satisfactorily formed analysis skills phenomena, processes.	satisfactory logic and subsequence answer

	Several are allowed errors in content answer	Several are allowed errors in content answer	
will not satisfy really	poor knowledge of the subject area being studied, shallow opening Topics; poor knowledge basic theoretical issues, poor analysis skills phenomena, processes. Serious errors in content answer	inability to give reasoned answers	lack of logic and consistency answer

Test control grading scale:

percentage of correct answers	Marks
91-100	Great
81-90	Fine
71-80	satisfactorily
Less than 71	unsatisfactory

Evaluation criteria for the test

Mark	**Descriptors**		
	strength of knowledge	**ability to explain the essence of phenomena, processes, do conclusions**	**logic and subsequence answer**
passed	solid knowledge of the basic processes of the studied subject area, the answer differs in depth and completeness of the topic; possession terminological apparatus	ability to explain essence, phenomena, processes, events, draw conclusions and generalizations, give reasoned answers, give examples	logic and subsequence answer
not accepted	insufficient knowledge subject matter being studied areas, unsatisfactory disclosure of the topic; weak knowledge of basic issues of theory, Allowed serious mistakes in content of the answer	weak analysis skills phenomena, processes, events, inability give reasoned answers given the examples are wrong	lack of logic and consistency answer

Criteria and indicators used in assessing the abstract

Criteria	Indicators

1.Novelty of the abstracted text Max. - 20 points	- relevance of the problem and topic; - independence in problem solving, - presence of the author's position, independence of judgment.
2. Degree of opening essence of the problem Max. - 30 points	- compliance of the plan with the topic of the abstract; - compliance of the content with the topic and plan of the abstract; - completeness and depth of disclosure of the basic concepts of the problem; - ability to work with literature, systematize and structure material; - the ability to generalize, compare different points of view on the issue under consideration, argue the main provisions and conclusions.
3. Validity of the choice of sources Max. - 20 points	- range, completeness of use of literary sources on the problem; - attraction of the latest works on the problem (journal publications, materials from collections of scientific papers, etc.).
4. Compliance with design requirements Max. - 15 points	- correct formatting of references to the literature used; - literacy and culture of presentation; - mastery of terminology and conceptual apparatus of the problem; - compliance with the requirements for the volume of the abstract; - design culture: highlighting paragraphs.
5. Literacy Max. - 15 points	- absence of spelling and syntactic errors, stylistic errors; - absence of typos, abbreviations of words, except generally accepted ones;

Essay evaluation

The abstract is assessed on a 100 point scale: “passed” is given for an abstract from 51 points.

CHECKLIST FOR EXAMINATION PROCEDURE (in case the study of the discipline ends with an exam)

No.	Examination event*	Points
1	Interview	100
Total maximum number of points for the examination procedure:		100

*Specific types, stages of the examination procedure, points for each stage are indicated, based on a maximum of 100 points in total for the examination procedure.

CHECKLIST FOR EXAMINATION PROCEDURE

(checklist for the second (commission) retake in case if the study of the discipline ends with a test, a differentiated test, exam)

No.	Examination event*	Points
1	Interview	100
Total maximum number of points for the examination procedure:		100

*Specific types, stages of the examination procedure, points for each stage are indicated, based on a maximum of 100 points in total for the examination procedure.