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## Evaluation materials for intermediate certification in the discipline Topographic anatomy, operative surgery

Code, direction of training	31.05.01 General Medicine
Specialty	General Medicine
Form of education	full-time
Department-developer	Morphology and physiology
Graduate Department	Internal diseases

### TYPICAL TASKS FOR CONTROL WORK CONTROL WORK – ABSTRACT (6-7 SEMESTER)

#### List of abstract messages - 6th term:

#### Section 1.

Topics of abstracts:

1. Pirogov N. I. His role in the development of topographic anatomy and operative surgery.
2. Creation by Pirogov N. I. of the doctrine of ether anesthesia.
3. The National School of Topographic Anatomists.
4. V.N. Shevkunenko.
5. The pre-Pirogov period in topographic anatomy.
6. The school of V. V. Kovanov.
7. Transplantology today. Methods of liver cryopreservation.
8. The concept of microsurgery.
9. The use of ultrasound, laser, plasma scalpel, gluing agents in surgery.

#### Section 2.

Topics of abstracts:

1. External landmarks, division into areas of the upper and lower extremities.
2. Ulnar region: borders, layers, fascial beds and muscle groups. Topography of neurovascular formations.
3. Pirogov's cellular space and its connection with the spaces of the hand and elbow area.
4. Wrist joint of the hand.
5. Projection of arterial arches of the palm, median nerve. Channels, fascial beds, neurovascular formations.
6. Neurovascular formations of the thigh, their projection lines.
7. Hip joint, ankle joint, knee joint.
8. Ways of spreading purulent congestion with phlegmon of the popliteal fossa, lower leg, foot.
9. External landmarks, borders, layers, fascia, cellular spaces. Neurovascular formations, their skin projections.
10. Access to the vessels of the upper and lower extremity: axillary, brachial, ulnar, femoral, popliteal, anterior and posterior tibial arteries.
11. Plastic surgery and bypass surgery.
12. Incisions in ulcers, ways of spreading purulent processes.

13. Puncture of the shoulder and elbow, knee and hip joints, indications, tools, operative access and reception.
14. Types of anesthesia (according to Oberst-Lukashevich, conduction, intraosseous, general anesthesia).
15. Modern principles of amputation stump formation.
16. Principles of joint resection. The concept of arthroplasty and arthrodesis.

### **Section 3.**

Topics of abstracts:

1. Topography of the sinuses of the dura mater and the cephalic nerves inside the cranial cavity.
2. The main ways of outflow of cerebrospinal fluid and their connection with the lymphatic system.
3. External landmarks, boundaries, layers, fascia, cellular spaces, projection of the main neurovascular bundles of the lateral area of the face, projection of the parotid gland duct.
4. Antrotomy.
5. Surgical treatment of maxillofacial wounds.
6. Surgical treatment for purulent mumps.

### **Section 4.**

Topics of abstracts:

1. Lymphatic vessels and regional lymph nodes of the neck.
2. Fistulas in the neck and their topographical relationships.

### **Section 5.**

Topics of abstracts:

1. Reconstructive (reconstructive) operations on the esophagus.
2. Mastectomy. Types of operations.
3. Lifetime X-ray examination of the thoracic cavity.
4. The role of the thymus in the functioning of the human body. Dynamics of its development in the postnatal period.
5. Boundaries, external landmarks of the chest area.
6. Topography of the parietal pleura, borders, divisions, sinuses.
7. Topography of the pericardium, divisions, sinuses.
8. Topography of the thoracic lymphatic duct.

### **List of abstract messages - 7th term:**

#### **Section 6.**

Topics of abstracts:

1. Hernia of the spigelial line, non-muscular areas of the internal oblique abdominal muscle.
2. Diverticula and peritoneal pits, their significance for the formation of hernias.
3. Gastrointestinal fistulas. Operations.
4. Features and techniques of operations on the pancreas.
5. The development of the pancreas and the topography of its excretory ducts.
6. Features and techniques of operations on the pancreas.
7. The shape and position of the duodenum.
8. Changes in the stomach depending on age, overstretched stomach.
9. Physiological and pathological changes in the shape of the liver. Variants of the formation of the bile duct.

#### **Section 7.**

Topics of abstracts:

1. Anomalies of kidney development.
2. Abnormalities of the development of the ureters.

## Section 8.

Topics of abstracts:

1. Sexual differences of the male and female pelvis.
2. Topographic and anatomical substantiation of palpatory rectal examination.
3. Anomalies of the development of the rectum.
4. Operations for rectal cancer.
5. Features, advantages of various types of hemorrhoidectomy.
6. Prostate surgery.

### **The interim certification is carried out in the form of an exam.**

The exam is conducted orally - an oral survey on four theoretical questions, the solution of one situational problem and the delivery of surgical instruments.

<b>Tasks for competence assessment «Knowledge»</b>	<b>Task type</b>
<p>List of exam oral quiz points:</p> <ol style="list-style-type: none"><li>1. The subject and tasks of topographic anatomy and operative surgery. Methods of studying topographic anatomy: determination of external and internal landmarks, layer-by-layer dissection, study of transverse, sagittal and frontal cuts (according to Pirogov).</li><li>2. Surgical instruments. The technique of dissection and connection of tissues, stopping bleeding is temporary and final.</li><li>3. Topographic anatomy of the area of the upper arm (deltoid, scapular).</li><li>4. Topographic anatomy of the axillary region. Surgical anatomy of the shoulder joint.</li><li>5. Topographic anatomy of the anteromedial and posterior shoulder area.</li><li>6. Topographic anatomy of the shoulder area (ulnar fossa), the elbow joint.</li><li>7. Topographic anatomy of the anterior and posterior regions of the forearm.</li><li>8. Topographic anatomy of the wrist joint.</li><li>9. Topographic anatomy of the back of the hand.</li><li>10. Topographic anatomy of the palmar surface of the hand.</li><li>11. Topographic anatomy of the femoral (Skarpovsky) triangle, femoral and occlusal canal.</li><li>12. Surgical anatomy of the knee joint.</li><li>13. Topographic anatomy of the posterior thigh area.</li><li>14. Topographic anatomy of the gluteal region.</li><li>15. Surgical anatomy of the knee joint.</li><li>16. Topographic anatomy of the anterior region of the lower leg.</li><li>17. Topographic anatomy of the posterior region of the lower leg.</li><li>18. Topographic anatomy of the ankle joint area.</li><li>19. Topographic anatomy of the back of the foot.</li><li>20. Topographic anatomy of the sole area.</li><li>21. Principles and techniques of primary surgical treatment of limb wounds.</li><li>22. Operations for purulent diseases of soft tissues. Incisions and topographic-anatomical substantiation of them with phlegmon of the upper arm and shoulder, forearm, hip, shin, foot.</li><li>23. Operations on the hand for purulent diseases (phlegmon, panaritium). Topographic and anatomical justification.</li><li>24. The technique of temporary and final stopping of bleeding. Venipuncture and venesection. Operations for venous dilation of veins.</li><li>25. Access and ligation of the axillary, brachial, ulnar and radial arteries, taking into account the collateral blood supply.</li><li>26. Accesses and ligation of the femoral, popliteal, anterior and posterior tibial arteries, taking into account the collateral blood supply.</li></ol>	<b>theoretical</b>

27. Technique of vascular suture and seamless connection of arteries. Plastic surgery and prosthetics, the concept of bypass surgery. Operations for aneurysms.
28. Operative access to nerves. Principles of operations on peripheral nerves: neurolysis, sutures, neurotomy, plastic surgery, displacement.
29. Operations on tendons: suture, tenolysis, tenotomy, plastic surgery.
30. Amputations, general rules. The technique of processing soft tissues, blood vessels, nerves and bones. Features of modern amputation methods in connection with prosthetics.
31. Rules for truncating the fingers of the hand. Amputations of fingers and exarticulation in the interphalangeal and metacarpophalangeal joints.
32. Techniques and techniques for determining amputation levels in circular, oval and flap methods. Modern principles of amputation stump formation. The primary stump and the reasons for its formation.
33. Fascioplasmic amputation of the lower leg and thigh. Tenoplastic amputation of the hip according to Callender.
34. Bone-plastic amputation of the lower leg according to Pirogov, the thigh according to Gritti-Shmanovsky.
35. Separation of the foot in the metatarsal-tarsal joint (according to Lisfrank). Separation of the toes according to Gorangeau, amputation of the foot according to Sharpe.
36. Amputation of the forearm. Kinematization of the forearm stump according to Krukkenberg-Albrecht. Phalangization of the stump of the hand.
37. Vascular suture, the history of the issue, the technique of application. Arterial plastic surgery, bypass surgery, prosthetics.
38. Surgical treatment of soft tissue wounds. Classification, types, technique.
39. Venesection: indications, technique of execution.
40. Topographic anatomy of the cranial vault: external landmarks, projections (Krenlein-Bryusova scheme), boundaries of regions.
41. The frontal-parietal-occipital region: landmarks, boundaries, layers, vessels, nerves, cellular slits.
42. Temporal region: external landmarks, borders, layers, vessels and nerves, cellular slits.
43. Mastoid region: external landmarks, projection of the antrum, facial nerve channel, sigmoid sinus. The Shipo triangle. Layers, vessels, nerves.
44. Primary surgical treatment of craniocerebral wounds (penetrating and non-penetrating). The technique of stopping bleeding in case of damage to soft tissues, bones of the cranial vault. Middle cerebral artery, venous sinuses.
45. Decompressive and bone-plastic trepanation of the skull. Cranioplasty.
46. Topographic anatomy of the neck: external landmarks, boundaries, division into regions. Projections of the most important neoplasms on the skin. Neck triangles. Superficial vessels and nerves.
47. Fascia of the neck, classification. Cellular spaces, their connection with the cellular spaces of the head, chest and upper limb.
48. The submandibular triangle of the neck. Borders, layers, vessels and nerves. The bed and capsule of the submandibular salivary gland, cellular spaces. The Pirogov triangle.
49. The sleepy triangle, layers. The common carotid artery, its bifurcation. Branches of the external carotid artery. Topography of the hyoid nerve, the cervical loop, the upper laryngeal nerve, the sympathetic trunk.
50. Sublingual area. Borders, layers, fascia, and cellular spaces. Topography of the thyroid gland, trachea, larynx, pharynx and esophagus.
51. Sternocleidomastoid region: borders, projection of the common carotid artery. The ratio of the main neurovascular bundle to the surrounding formations. The cervical plexus, the accessory nerve.
52. The scapular-trapezoidal and scapular-clavicular triangles: boundaries, layers, topography of the neurovascular bundle of the upper limb.

53. The stair-vertebral triangle, the pre-lumbar and inter-lumbar spaces: layers, boundaries, topography of the subclavian artery and its branches. Phrenic nerve, sympathetic trunk.
54. Surgical accesses to the neck organs. Features of primary surgical treatment. Incisions with superficial and deep phlegmon of the neck.
55. Vagosympathetic blockade, exposure of the carotid arteries in the carotid triangle and branches of the external carotid artery.
56. Tracheostomy: indications, features of tools, types, technique of execution. Complications.
57. Access to the cervical part of the esophagus, the thyroid gland. Technique of operations on the thyroid gland.
58. Topographic anatomy of the breast: boundaries, external landmarks, areas, walls, chest cavity and its departments.
59. Topographic anatomy of the chest wall. Layers and fascial-cellular spaces, topography of intercostal spaces. The mammary gland.
60. Topographic anatomy of the anterior mediastinum: thymus gland, diaphragmatic and recurrent nerves, fascia and cellular spaces.
61. Topography of the heart with the pericardium, large vessels, trachea.
62. Topographic anatomy of the posterior mediastinum: thoracic aorta, esophagus, vagus nerves, unpaired and semi-paired veins, sympathetic trunk, thoracic lymph duct.
63. Pleural cavity: borders, divisions, sinuses. Topography of the lungs, blood vessels, nerves. The relationship of the elements of the root of the right and left lung.
64. Incisions for purulent mastitis and retromammary phlegmon. Breast surgery for wounds and benign tumors.
65. Puncture of the pleural cavity, thoracocentesis. Pericardial puncture, primary surgical treatment of chest wounds.
66. Thoracotomy, rib resection. Operations for chronic pleural empyema. Thoracoplasty.
67. Operational access to the lungs. The technique of pneumonectomy, lobectomy. Treatment of the stump of the bronchi and blood vessels.
68. Operational access to the heart. The suture of the heart. Operations in case of violation of the coronary blood flow. Operations for pericarditis.
69. Operative access to the thoracic esophagus. Creating an artificial esophagus. Plastic surgery of the esophagus by the stomach, small and large intestines. Operations for esophageal strictures.
70. Topographic anatomy of the anterolateral abdominal wall: boundaries, division into regions, projection of the abdominal cavity organs on the anterolateral wall.
71. The structure of the anterolateral abdominal wall in the medial and lateral sections: blood supply, innervation, venous and lymphatic outflow.
72. Weak points of the anterolateral abdominal wall: Topographic anatomy of the umbilical ring, the white line of the abdomen, the inguinal canal.
73. Inguinal triangle, inguinal canal in men and women, inguinal gap. Surgical anatomy of oblique, straight, sliding and congenital inguinal hernias.
74. Surgical anatomy of femoral hernias, umbilical, white line, lateral abdominal hernias.
75. Postoperative hernias. Internal hernias of the abdominal cavity.
76. Division of the abdominal cavity into floors. The topography of the peritoneum and its relation to organs: folds, ligaments, bags, pockets. Topography of the omentum, hepatic and pancreatic bags.
77. Topographic anatomy of the stomach: syntopy and skeletotopy of its parts, superficial and deep ligaments, vessels and nerves, lymph outflow. Topography of the vagus nerves.

78. Liver: syntopia, skeletotopia, lobes, segments, ligaments, vessels, nerves. Topography of the hepatic-duodenal ligament. Features of portal blood circulation. Surgical anatomy of the extrahepatic biliary tract.
79. Spleen: syntopia, skeletotopia, ligaments, vessels, nerves, lymph outflow. Pancreas: syntopia, skeletotopia. Departments of the gland, blood vessels, nerves, lymph flow.
80. Duodenum: syntopia, skeletotopia, departments, vessels, nerves, lymph outflow. Attitude to the peritoneum. Topography of the confluence of the common bile duct and the pancreatic duct into the duodenum.
81. Topographic anatomy of the small intestine: syntopia, skeletotopia, divisions, mesentery, vessels, nerves, lymph outflow.
82. Topographic anatomy of the colon: syntopia, skeletotopia, divisions, mesentery, vessels, nerves, lymph outflow. Attitude to the peritoneum. Topography of the ileocecal angle and the vermiform process.
83. Operations on the abdominal wall. Surgical instruments and equipment. Laparocentesis. Laparotomy (median, pararectal, paramedial, transrectal, oblique, transverse, combined).
84. Methods and stages of herniation in inguinal hernias. Plastic surgery of the inguinal canal according to Ru, Martynov, Girard-Spasokukotsky, Kimbarovsky, Bassini, Kukudzhinov, Pastempsky. Features of inguinal herniation in children.
85. Methods and stages of herniation in femoral hernias. Femoral canal plastic surgery according to Bassini, Fabricius, Ruggi-Parlovecchi.
86. Methods and stages of hernia repair and hernia gate plastic surgery for umbilical hernias, white line hernias, postoperative hernias. Features of herniation in congenital, sliding and pinched hernias.
87. The technique of intestinal suture. Types of interstitial anastomoses. Technique of suturing wounds of the small intestine, resection of the small intestine. Suturing of a perforated ulcer of the stomach, duodenum.
88. Features of the technique of colon suture. Colon resection.
89. Colostomy, technique, types. Operations with megacolon.
90. Appendectomy: anesthesia, accesses (comparative assessment), stages. Retrograde and antegrade appendectomy.
91. Gastrostomy (according to Witzel-Yudin, Toprover, Kader). Types of gastroenterostomy. Gastric resection according to Billroth-I, Billroth-II, Chamberlain-Finsterer, Finsterer.
92. Operative access to the liver and bile ducts. Liver suture, liver resection. Choledocholithotomy. Biliodigestive anastomoses.
93. Operations on the spleen: suture, splenectomy, autotransplantation of spleen tissue. The concept of operations on the pancreas (marginal neurotomy, sequestronecrectomy, resection, pancreatoejunostomy).
94. The posterolateral wall of the abdomen - the lumbar region, boundaries, structure, weak points. Blood supply, innervation, venous and lymphatic outflow.
95. Retroperitoneal space. Fascia and cellular layers.
96. Topography of the kidneys, adrenal glands and ureters. Syntopia, skeletotopia, blood supply, innervation, lymphatic outflow.
97. Topography of the abdominal aorta and its branches, the inferior vena cava, nerve plexuses and the border sympathetic trunk. Branches of the lumbar plexus.
98. Operations on the kidneys and ureters. Access rights. Liver suture, resection, nephrectomy, pyelotomy. Ureteral suture. The technique of paranephral novocaine blockade.
99. Topographic anatomy of the pelvis: external landmarks, boundaries, pelvic walls and bottom (pelvic diaphragm and urogenital diaphragm). Bone-ligamentous base, muscles, fascia of the pelvis.

<p>100. Division of the pelvis into floors. The course of the peritoneum in the male and female pelvis. The folds of the peritoneum. Vesico-rectal recess in men, vesico-uterine and recto-intestinal-uterine recesses in women.</p> <p>101. Fascia of the pelvis. The course of the parietal and visceral leaves of the interstitial fascia and its spurs. Aponeurosis of Dennoyillier. Cellular spaces of the pelvis, their connections with the retroperitoneal space, the anterior abdominal wall, the gluteal region, the thigh and perineum area.</p> <p>102. Topography of the internal iliac artery and its branches, trunks of the lumbosacral plexus and the border sympathetic trunk. The connection of the cellular spaces of the peritoneal floor with the retroperitoneal space, the spaces of the gluteal region, pelvis and perineum.</p> <p>103. Topography of the rectum, ureters, bladder and urethra in men.</p> <p>104. Topography of the rectum, ureters, bladder and urethra in women.</p> <p>105. Topography of the uterus with appendages: relation to the peritoneum, fixing and suspending apparatus, parotid tissue, parametrium. Blood supply, innervation, lymph outflow.</p> <p>106. Topography of the prostate gland, seminal vesicles, vas deferens.</p> <p>107. Topographic anatomy of the perineum: bone-ligamentous-muscular boundaries. Division into triangles.</p> <p>108. Anal triangle. Borders, layers. The muscle that raises the anus. External and internal sphincters of the rectum. Topography of the sacral neurovascular bundle. Cellular spaces of the sciatic-rectal fossa, its walls and connection with the cellular spaces of the pelvis and the gluteal region.</p> <p>109. Urogenital triangle, urogenital diaphragm. Layers, fascia, vessels, nerves.</p> <p>110. The external part of the urethra in men. Testicle and appendage. Blood supply, innervation, lymph outflow.</p> <p>111. External genitalia in women. Blood supply, innervation, lymph outflow. Bartholinium glands.</p> <p>112. Intra-phase blockade according to Shkolnikov, equipment, indications. Puncture of the posterior vaginal arch and colpotomy.</p> <p>113. Puncture of the bladder. Cystotomy and cystostomy. Plastic surgery of the bladder.</p> <p>114. Operations for paraproctitis, hemorrhoids, rectal prolapse. Methods of drainage of cellular spaces.</p> <p>115. Operations in ectopic pregnancy. Ovarian resection. Supravaginal amputation of the uterus.</p> <p>116. Operations for testicular dropsy according to Winkelman and Bergman. Operations for cryptorchidism, epispadias and hypospadias.</p>	
<p><b>Task for the evaluation indicator of the descriptor "Abilities", "Skills"</b></p>	<p><b>Task type</b></p>
<p>The student be able to:</p> <ul style="list-style-type: none"> <li>- palpate the main bone landmarks on a person;</li> <li>- outline the topographic contours of the organs and the main vascular and nerve trunks;</li> <li>- explain the nature of deviations in the course of development that can lead to the formation of variants of anomalies and defects</li> </ul> <p>The student have skills of:</p> <ul style="list-style-type: none"> <li>- medical and anatomical conceptual apparatus;</li> <li>- the simplest medical instruments (phonendoscope, spatula, neurological hammer, scalpel, tweezers, probe, clamp, expander, etc.)</li> </ul> <p>Typical situational tasks:</p> <p><b>Task No. 1.</b></p>	<p><b>theoretical</b></p>

A housewife, opening a tin can, received a stab wound at the level of the transverse fold of the wrist. During the examination-the movement of the hand in full, there is no tactile and pain sensitivity of the I, II and ½ III fingers. Give an anatomical justification of the existing symptom.

**Task No. 2.**

A 25-year-old patient, a sailor of a fishing trawler by profession, received a stab wound with a fish fin on the palmar surface of the nail phalanx of the second finger of the left hand. I did not seek medical help. When examined after 4 days, a sharp hyperemia of the II finger is determined, soreness during palpation on the palmar surface. When pressed, droplets of pus are released in the wound area. What is the danger of existing damage? The surgeon's tactics?

**Task No. 3.**

A 40-year-old patient was hospitalized with a diagnosis of spilled phlegmon of the right half of the face. What cellular spaces can be involved with such a phlegmon? Possible ways of spreading the infection?

**Task No. 4.**

During the operation of the lower tracheostomy, when creating an operative access, the patient began to bleed heavily with dark blood. Specify the source of the bleeding. The surgeon's tactics?

**Task No. 5.**

A 25-year-old patient in a serious condition was delivered by ambulance. A few hours ago, I received a strong blow to the epigastric region. Due to the presence of peritoneal symptoms, the patient urgently underwent median laparotomy, there are signs of damage to the pancreas. How to examine the pancreas? What anatomical formations can still be affected by this injury?