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DEPARTMENT OF THE GENERAL AND OPERATIONAL SURGERY
WITH TOPOGRAPHICAL ANATOMY AND COURSE OF
STOMATOLOGY

Smolkina A. V., Makarov S.V.

**GUIDELINES FOR INDEPENDENT WORK OF STUDENTS FOR THE
DISCIPLINE "GENERAL SURGERY. INTRODUCTION TO SPECIALTY "FOR
SPECIALTY 05.31.01 "MEDICAL BUSINESS "**

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Reviewers: doctor of medical sciences, professor Yuri Grigorievich Shapkin

Smolkina Antonina Vasilievna - MD, associate professor, head of the Department of General and Operative Surgery with topographic anatomy and a course of dentistry of the State Pedagogical University of Ulyanovsk State University of the Ministry of Education and Science of the Russian Federation.

Makarov Sergey Victorovich - Candidate of Medical Science, associate professor of the Department of General and Operative Surgery with topographic anatomy and a course of dentistry of the State Pedagogical University of Ulyanovsk State University of the Ministry of Education and Science of the Russian Federation.

Guidelines are prepared in accordance with the work program of the discipline "General surgery. Introduction to the specialty", according to the current curriculum. The structure includes guidelines for each topic studied according to the plan of classroom practical work. The guidelines are intended for independent training of students of the faculty of medicine studying in the specialty 31.05.01-Medical science.

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The course aims and objectives

The objectives of mastering the discipline:

introducing students to the specialty, determining the place of surgery among all medical disciplines; teach a student to apply knowledge of anatomy, physiology and other fundamental disciplines to solve specific practical clinical problems with an emphasis on children, master the basic principles of diagnosis, treatment and prevention of surgical diseases and perform general medical manipulations with childhood characteristics.

Studying the fundamentals of modern clinical surgery forms clinical thinking and allows the student to subsequently successfully understand not only the diagnosis and treatment of certain surgical diseases, but also master other medical subjects.

The focus is on the characteristics of children's age of patients.

Tasks of mastering the discipline "General Surgery. Introduction to the specialty "

Acquaintance of students with the structure of surgical institutions (clinic, general surgery hospital, tuberculosis dispensary, children's clinic, children's surgical department), equipment and equipment of the surgical room. Familiarization with the work of doctors on surgical admission by a patient with an emphasis on childhood. Mastering the basic principles of ethics and deontology with both children and their parents, without which it is impossible to master the art of treating patients. Focus students on the tasks of surgery; distinguish a group of the most common diseases and teach emergency care for surgical patients with childhood problems.

In this case, the main objectives of the discipline are to teach the student:

- purposefully ascertain the patient's complaints and the history of the disease, conduct a physical examination of the surgical patient (examination, palpation, percussion, auscultation), outline a plan for the examination of the surgical patient;
- organize surgical activities in compliance with the rules of asepsis in the premises of the surgical hospital and clinic;
- identify the main surgical syndromes and diagnose the main types of purulent-septic diseases (etiology, pathogenesis, classification, clinic, the basic principles of diagnosis and treatment of the most common surgical diseases);
- training students to provide first aid in case of emergency;
- familiarization of students with the principles of organization and operation of medical institutions of various types;
- the formation of skills for studying scientific literature and official statistical surveys;
- the formation of communication skills with the patient, taking into account ethics and deontology, depending on the identified pathology and characterological characteristics of the patients;
- the formation of the student's communication skills with the team, with pediatric patients and their parents.

TOPICS practical and seminars

Topic 1. History of the development of surgery. Great surgeons. Deontology.

Questions:

1. Epoch of the development of surgery.
2. The development of surgery until the 19th century.
3. The ideological precursors of antiseptics (L. Pasteur, N. And. Pirogov) and its creators (I. Zemmelsweis, D. Lister).
4. The role of Pirogov N.I. in the development of surgery.
5. The development of surgery in the 19-20 centuries.
6. The development of surgery in Russia.
7. The current stage of development of surgery.
8. Deontology - the concept.
9. Ethical behavior with patients and doctors.

Topic 2. Antiseptic, its types, antiseptic preparations and their use.

Questions:

1. Antiseptic. Definition of the concept.
2. Types of antiseptics (mechanical, physical, chemical, biological).
3. The mechanism of action of antiseptics,
4. Characteristics of basic antiseptics and antibiotics.
5. Methods of using antiseptic preparations.
6. Rational antibiotic therapy. Complications of antibiotic therapy and their prevention.
7. Enzymotherapy of surgical infection. Used enzymes.

Topic 3. Asepsis, sources of infection, prevention of airborne and drip infections. Organization of the surgical department. Preparing the surgeon's hands for surgery.

Questions:

1. Asepsis. Definition of the concept. The value of asepsis for surgery in modern conditions.
2. Sources of infection. Endogenous and exogenous infections (airborne, contact, implant). The concept of nosocomial, intrahospital, nosocomial infection.
3. Organization of the surgical department, its layout, the main premises and their device.
4. Chambers, dressing, their equipment and cleaning.
5. Operational unit, its device and equipment. Cleaning in the operating room, its types.
6. The behavior of staff and visitors in the operating room.
7. Device and equipment of the surgical clinic office.
8. Orders and instructions of the Ministry of Health of the Russian Federation on the prevention of intra-hospital infection. The essence of the orders.

9. Training of hands of the personnel for operation.

Topic 4. Aseptic. Prevention of contact infection. Sterilization of tools, material and linen. Prevention of implantation infection. Sterilization of suture and plastic material.

Questions:

1. Prevention of contact infection. The concept of contact infection, its sources.
2. Surgical instruments: classification, features of their device, sterilization and care for them.
3. Dressing material: its types and basic properties. Requirements for dressings.
4. Preparation of dressing and surgical material, as well as linen and their sterilization.
5. Autoclave, its device and work.
6. Sterilization gloves.
7. Preparation of the surgical field.
8. Hot air (dry heat) sterilization in dry heat ovens (air sterilizers).
9. Control of autoclave sterilization and dry heat ovens (air sterilizers).
10. Implant infection. The concept and its sources.
11. Suture material, its types and purpose, classification by source. Requirements.
12. Modern stitching machines. Their types and purpose. Suture material applied here. Sterilization of the sewing devices.
13. Autoplastic materials used in surgery and traumatology and their sterilization.
14. Homoplastic materials used in surgery and traumatology and their sterilization.

Topic 5. General issues of anesthesiology. Methods of general anesthesia, indications, contraindications and complications. Methods of local anesthesia.

Questions:

1. General anesthesia (anesthesia). Types of anesthesia as prescribed. Mechanisms of action of drugs on the body (the theory of anesthesia).
2. Preparations used for general anesthesia and their pharmacodynamics.
3. Muscle relaxants, their mechanism of action and complications.
4. The clinical course of anesthesia in stages.
5. Mask anesthesia. Indications, contraindications and complications.
6. Endotracheal anesthesia. Indications, contraindications and complications.
7. Intravenous anesthesia. Indications, contraindications and complications.
8. Local anesthesia. Preparations for local anesthesia, their pharmacodynamics. Local layered infiltration anesthesia by the method of tight creeping infiltration according to Vishnevsky.
9. Methods of local anesthesia. Indications, contraindications and complications.
10. Local intraosseous, intravenous and intraarterial anesthesia. Indications, contraindications and complications.

11. Conductive, spinal and epidural anesthesia. Indications, contraindications and complications.

Theme 6. Resuscitation in violation of the vital functions of the body. The form of conducting - a practical lesson, work in the simulation center - a business game.

Questions:

1. Neuroleptanalgesia. Indications, contraindications and complications. Used drugs.

2. Equipment for anesthesia and mechanical ventilation (ALV). Methods of mechanical ventilation.

3. Methods for managing vital body functions (artificial hypotension, hypothermia).

4. Reanimation. Notion Vital functions of the body, their types and causes of violations.

5. Methods of elementary and skilled resuscitation. Restoration of the patency and function of the respiratory system, circulatory system and metabolism. The equipment used for resuscitation.

6. Central venous pressure (CVP).

Topic 7. Bleeding and blood loss. Concept, classification, first aid and treatment. Methods to stop external bleeding.

Questions:

1. The concept of bleeding and blood loss. The hemostasis system is normal.

2. Classification of bleeding.

3. External bleeding, causes, clinic.

4. Internal bleeding, causes, clinic.

5. Temporary methods to stop bleeding.

6. Plaits to stop external bleeding, their types, the technique of blending, depending on the location of the bleeding and its nature.

7. Methods for the final stop of bleeding. Blood loss treatment.

8. The reaction of the body to bleeding and blood loss. The value of compensatory mechanisms.

9. Factors contributing to independent bleeding. Outcomes of bleeding.

10. Catheterization, puncture of the central (subclavian, femoral, internal jugular) and peripheral veins.

11. Methods of determination and value for determining the volume of blood loss and the degree of blood loss.

Topic 8. Disorder of blood coagulation in surgical patients and methods for their correction. Endogenous intoxication and water and electrolyte disturbances in surgery.

The principles of its correction.

Questions:

1. The hemostasis system is normal.

2. Methods for the study of hemostasis.
3. The effect of diseases, injuries and surgeries on hemostasis.
4. Thromboembolic complications, causes, clinical presentation, treatment and prevention.
5. Reduction of blood coagulation properties in diseases, injuries, operations.
6. Hemorrhagic syndrome in surgery. DIC or TGS-syndrome.
7. The concept of endogenous intoxication and its main types in surgical patients.
8. Clinical and laboratory findings. Assessment of the severity of patients.
9. Principles of complex treatment. Stimulation of natural detoxification mechanisms, artificial detoxification.
10. Efferent detoxification methods.
11. Surgical elimination of endogenous intoxication.
12. Water-electrolyte disorders in surgical patients, causes.
13. Clinical and laboratory diagnosis of water and electrolyte disorders in surgical patients.
14. Methods of correction of water and electrolyte disorders, applied solutions.
15. Dangers and complications of plasma-replacement solutions.
16. Preparations for parenteral nutrition in order to correct protein exchange.

Theme 9. Blood type and Rh factor. Determination of blood type.

Questions:

1. Historical data. The concept of science - transfusiology.
2. Erythrocyte and plasma factors of blood groups (agglutinogens and agglutinins). The designation of blood groups.
3. Method of determining blood groups. Errors in the determination of blood groups.
4. Rh factor, its value, the method of determination.
5. Compatibility tests. Methods of conducting tests.
6. Indications and contraindications for blood transfusion and its components and preparations.
7. Preservation of blood. Preparation of components and blood products, their storage and shelf life.
8. The mechanism of action of transfused blood.
9. Ways of blood components transfusion. Intraosseous path. Method of puncture of the epiphysis of large bones, sternum. Other indications for these punctures.

Topic 10. Transfusion of blood components and blood substitutes.

Errors and complications. Donation

Questions:

1. Technique of intravenous, intraarterial and intraosseous transfusion of blood and its components.
2. Mistakes, dangers and complications during the transfusion of blood and its components, their prevention and treatment.
3. Exchange transfusions, blood reinfusion, transfusion of canned autologous blood, bone marrow transplantation.
4. Transfusion of carriers of blood gases (erythrocyte mass).
5. Transfusion correctors of hemostasis and fibrinolysis (blood plasma, platelet mass, cryoprecipitate).
6. Transfusion of immunity correction agents (leukovzvesz, plasma of the directed anti-infective action). Blood products and their transfusion.
7. Blood substitutes, purpose and classification. Blood substitutes for hemodynamic, detoxification, parenteral nutrition and regulation of ionic equilibrium.
8. Blood transfusion technique, complications and their prevention and treatment.
9. Donation, organization. Contraindications to donation.

Theme 11. Thermal and chemical burns.

Questions:

1. Thermal burns. Classification according to the degree and stages of flow.
2. Methods for determining the area of destruction.
3. Disorders of the body during thermal burns (shock, toxicosis, plasma loss).
4. Features of shock during thermal burns.
5. Complications of thermal burns (purulent complication, sepsis).
6. First aid for thermal burns.
7. Burn disease. Treatment, outcomes.
8. Organization and work of specialized burn wards and centers.
9. Chemical burns of the skin. Causes, first aid and treatment. Chemical burns of the esophagus, clinic, first aid.

Theme 12. Cold injury and electric shock.

Questions:

1. Frostbite, causes, classification by degrees and area of damage.
2. Modern views on the pathogenesis of frostbite.
3. Symptoms of frostbite in the pre-reactive and reactive periods.
4. First aid and treatment for frostbite. Technique of imposing thermoisolating dressings.
5. Chills and freezing, symptoms, first aid and treatment.
6. Electrotrauma. Causes, local and general effects of electric current on the body. Electric burns, their features.
7. First aid and treatment for electrical injuries.

Theme 13. Wounds, wound process, clinical manifestations, first aid, treatment. Treatment of wounds, its types, types of wound healing. Infected wounds.

Questions:

1. Wounds, classification by origin and nature of wounds, their localization and relationship to body cavities.
2. Clinical manifestations common to all types of wounds.
3. Clinic of wounds depending on their nature and location.
4. The course of the wound process, depending on its phase.
5. Morphological and biochemical changes in the wound.
6. First aid for wounds depending on their nature, complications and attitudes to the body cavities.
7. General principles of treatment of wounds.
8. Medical tactics for fresh wounds, depending on the location, nature of wounds and attitude to the body cavities.
9. Primary surgical treatment of wounds. General concepts and its principles.
10. Justification of the primary treatment of wounds, indications, technique, results.
11. Features of primary treatment of wounds, depending on the nature of the wound.
12. Features of treatment and tactics for wounds penetrating into the body cavity.
13. Features of treatment of wounds depending on related complications (bleeding, bone fractures, hematomas).
14. Types of stitches: primary, primary delayed, secondary and secondary delayed.
15. General principles of treatment of infected wounds.
16. General and local treatment of infected wounds. Wound drainage methods: active, passive, flow-suction and vacuum drainage of wounds.
17. Features of primary surgical treatment of bitten wounds.

Theme 14. Desmurgy.

Questions:

1. General concepts of desmurgy.
2. Classification of dressings depending on their type and name.
3. Screw dressings, their types, the technique of applying to individual areas of the body.
4. Kanova bandages, their types and overlay technique.
5. Adhesive dressings, their purpose and technique of imposition.
6. Bandages on the body.
7. Bandages on the lower extremities.
8. Headbands.

Topic 15. Parasitic surgical diseases.

Questions:

1. The concept of surgical parasitic diseases.

2. Echinococcosis. Brief ideas about the development cycle of the parasite. Ways of infection. Prevention of echinococcosis.
3. Morphological forms of echinococcosis in humans.
4. Diagnosis of echinococcal cyst in the liver, lungs and other internal organs.
5. Surgical treatment of echinococcosis.
6. Alveococcosis: causes, diagnosis, surgical treatment.
7. Ascariasis. Brief ideas about the development cycle of the parasite. Ways of infection. Prevention of ascariasis.
8. Clinical manifestations of "surgical" ascariasis.
9. Surgical treatment of surgical complications of ascariasis.
10. Opisthorchiasis - damage to the liver, gallbladder, pancreas trematodes.
11. Ways of infection of opisthorchiasis. Prevention of opisthorchiasis.
12. The clinical picture, diagnosis, surgical treatment of complications of opisthorchiasis.

Theme 16. Basics of surgical oncology. Tumors.

Questions:

1. Benign and malignant tumors.
2. Pre-cancerous diseases.
3. General concepts about tumors, benign and malignant tumors, tumor classification, classification of tumors according to various criteria, including the TMNP system. Organization of cancer care.
4. Clinic of tumors and methods of their diagnosis (x-ray, endoscopic, histological, cytological, ultrasound).
5. Pre-cancerous diseases. The need and importance of early diagnosis of malignant tumors.
6. Clinic of connective tissue tumors: benign (fibroma, lipoma, chondroma, osteoma) and malignant (sarcoma).
7. Clinic of tumors from muscular, vascular and nervous tissue (fibroids, angiomas, gliomas, neuromas, ganglioneuromas).
8. Clinic of tumors of epithelial origin: benign (papilloma, adenoma, cystadenoma, dermoid) and malignant (cancer).
9. Surgical treatment of tumors. The possibilities of endoscopic operations.
10. Radiation, chemotherapy, hormonal and combined treatment of tumors - the basic concepts.
11. Treatment outcomes of tumor processes.

Theme 17. Malformations

Questions:

1. The concept of congenital pathology.
2. Congenital malformations of the head.
3. Anomalies of the face and oral cavity.
4. Congenital fistula and cysts of the neck. Torticollis.

5. Spinal defects.
6. Congenital tumors of the sacrococcygeal region.
7. Congenital malformations of the chest and chest organs.
8. Congenital abdominal defects.
9. Congenital heart defects.
10. The concept of surgical treatment of malformations.

Theme 18. Plastic and reconstructive surgery. Transplantology.

Questions:

1. The concept of corrective surgery.
2. The concept of plastic surgery.
3. The concept of reconstructive surgery.
4. Restorative anatomical and functional disorders of organs and systems.
5. Corrective surgery of the consequences and complications of diseases.

Theme 19. Examination of the surgical patient.

Form conducting - business and role-playing game.

Questions

1. General clinical research methods: survey, examination, palpation and auscultation.
2. Measurement of organs and body parts.
3. Measurement of the shape of the body part.
4. Measurement of body temperature.
5. Blood pressure measurement.
6. Pulse measurement.
7. Special research methods.
8. Interpretation of laboratory research methods.
9. Interpretation of functional research methods.
10. Interpretation of radiological methods.
11. Interpretation of endoscopic research methods.
12. Interpretation of ultrasound methods.
13. Interpretation of radioisotope research methods.
14. Interpretation of computed tomography.
15. Interpretation of magnetic resonance imaging.

Theme 20. Bone fractures. Treatment of bone fractures.

Form holding - practical lesson

Questions:

1. Bone fractures: causes, mechanisms, classification.
2. Fractures of large bones: clinic, diagnosis, complications.
3. Features of the clinical signs of fractures of large bones, depending on the location (thigh, shin, shoulder, forearm).

4. Features of mechanisms and clinic fractures of lamellar bones (ribs, skull, pelvis).
5. Some features of the mechanisms and clinic fractures of small bones (spine, foot, hand).
6. First aid for closed fractures of large bones.
7. Features of first aid for open bone fractures.
8. Features of first aid and treatment for fractures of the lamellar and small bones of the pelvis (hand, foot, pelvis, ribs, spine).
9. General principles of treatment of closed and open fractures of large tubular bones.
10. Traumatic amputation of bones and soft tissues, methods of preserving amputated segments for replantation. Methods of microsurgery during replantation.
11. Indications for treatment of fractures of large bones with plaster casts, skeletal traction, the use of osteosynthesis and compression-distraction apparatus.
12. Surgical treatment of fractures of large bones: indications, methods.
13. Features of the treatment of fractures of lamellar and small bones.
14. Morphological changes in the fracture zone at different times. Bone callus formation.
15. Causes of delayed fusion of bone fractures and the formation of false joints. Treatment of patients in such cases.
16. Gypsum, its properties, storage, inspection and quality control.
17. Plaster dressings, their types and use.

Theme 21. Dislocation of joints.

Form holding - practical lesson

Questions:

1. Dislocations: causes, mechanisms, classification.
2. Clinic, diagnosis, first aid and treatment of shoulder dislocations.
3. Clinic, diagnosis, first aid and treatment of other dislocations.
4. Complications of dislocations, their signs and treatment.
5. Hemarthrosis. Technique puncture large joints. Other indications for puncture of the joints.
6. Types of standard tires and their application. Rules of immobilization for dislocation of bones.

Theme 22. Damage to soft tissue. Prolonged Syndrome and positional compression syndrome.

Form holding - practical lesson

Questions:

1. Closed soft tissue injuries (bruises, strains, tears): causes, mechanisms. Hematomas: treatment, methods of puncture.
2. Symptoms of soft tissue injuries: first aid, treatment.

3. Signs of rupture of the ligamentous apparatus of the joints: first aid and treatment. Hemarthrosis: methods of puncture of the joint cavity.
4. Soft tissue tears, their clinic, first aid and treatment.
5. Outcomes of soft tissue damage
6. Syndrome of prolonged compression (VTS) and the syndrome of positional compression: the concept, causes of pathogenesis.
7. Clinical signs of VTS and positional compression syndrome.
8. First aid, treatment and outcomes VTS.

Theme 23. Transport immobilization.

Uniform holding is a business game.

Questions:

1. Transport and therapeutic immobilization, the concept and their goals.
2. Types of tires for transport immobilization.
3. The use of available tools and standard tires for transport immobilization. The technique of their imposition.
4. Indications for use of transport immobilization.
5. Immobilization rules.
6. Features of transport immobilization for fractures of large bones.
7. Transport immobilization for fractures of the pelvic bones
8. Transport immobilization for spinal fractures.
9. Possible complications of transport immobilization.

Theme 24. Injuries to the skull, chest and abdomen.

Uniform holding is a business game.

Questions:

1. Injuries of the skull: classification, clinic, diagnosis.
2. First aid. First aid, treatment. Spinal (lumbar) puncture: indications, technique.
3. Breast injuries: classification, complications, clinic.
4. First aid and treatment for injuries of the chest.
5. Complications of injuries of the chest (pneumothorax, hemothorax).
6. Indications and techniques of pleural puncture and drainage of the pleural cavity.
7. Heart damage: clinic, first aid, treatment.
8. Puncture and drainage of the pericardial cavity, indications, technique.
9. Abdominal injuries: classification, clinic, diagnosis, first aid, treatment.
10. Laparocentesis: indications, technique.
11. Laparoscopy: indications.
12. Puncture and drainage of the bladder: indications, technique.

Theme 25. Acute purulent infection. Common questions, problems.

Purulent diseases of the skin and subcutaneous tissue.

Form holding - practical lesson

Questions:

1. Etiology of acute purulent infection. Pathogens.
2. Pathogenetic mechanisms of acute purulent infection.
3. General and local reaction of the body. Clinical signs are common to all forms of acute purulent infection.
4. Principles of general and local treatment of acute purulent infection.
5. Principles of antibiotic therapy.
6. The use of antiseptics and enzymes.
7. Folliculitis.
8. Furuncle, furunculosis.
9. Carbuncle and carbuncle. Etiopathogenesis, clinic, treatment.
10. Hydradenitis. Etiopathogenesis, clinic, treatment.
11. Abscesses of different locations.
12. Phlegmons of different localizations. Etiopathogenesis, clinic and treatment.
13. Empyema: the concept and its types.
14. Purulent diseases of cellulose spaces (phlegmon of the neck, subfascial and intermuscular phlegmons of the extremities, axillary and subpectoral phlegmons). Clinic, treatment.
15. Purulent mediastinitis: causes, clinic, diagnosis, treatment.
16. Purulent paranephritis and paracolitis: causes, clinic, treatment.
17. Purulent paraproctitis: classification, clinic, treatment. Pararectal fistula.
18. Erysipelas of the skin: etiopathogenesis, classification, clinic, diagnosis, prevention.

Theme 26. Acute purulent diseases of soft tissues and glandular organs and lymph nodes.

Form holding - practical lesson

Questions:

1. Lymphangitis, concept, form, clinic and treatment.
2. Lymphadenitis, types.
3. Adenoflegmon: concept, forms, clinic and treatment.
4. Mastitis: concept, factors contributing to the disease. Classification of mastitis.
5. Clinic and diagnosis of mastitis. Treatment of mastitis.
6. Mumps: causes, clinic, treatment.
7. Prostatitis: causes, clinic, treatment.

Theme 27. Acute purulent-destructive diseases of the abdominal organs.

Purulent inflammatory diseases of the serous cavities.

Form holding - operational game

Questions:

1. Acute purulent-destructive diseases of the abdominal organs, as the cause of peritonitis.

2. Peritonitis: concept, classification.
3. Etiopathogenesis of peritonitis.
4. Clinic and diagnosis of purulent peritonitis.
5. Treatment of peritonitis. Methods of sensing the stomach, small and large intestines. Methods of drainage of the abdominal cavity.
6. Pleurisy. Clinical signs and diagnosis of pleurisy
7. Pleural empyema: concept, classification.
8. Meningitis, as a surgical pathology.

Theme 28. Acute purulent diseases of bones, joints, feet.

Form holding - practical lesson

Questions:

1. Hematogenous osteomyelitis: concept and classification.
2. Etiology and pathogenesis of acute hematogenous osteomyelitis.
3. Clinic and diagnosis of acute hematogenous osteomyelitis.
4. Treatment of acute hematogenous osteomyelitis.
5. Traumatic and postoperative osteomyelitis. Etiology, pathogenesis, clinical features, diagnosis and treatment.
6. Primary chronic forms of osteomyelitis, etiopathogenesis, clinic and treatment.
7. Chronic osteomyelitis. Etiopathogenesis, clinic, diagnosis and treatment.
8. Acute suppurative arthritis. Classification, clinic, treatment. Technique puncture joints and arthrotomy.
9. Purulent diseases of the hand and fingers, causes.
10. Classification of felon and phlegmon brush.
11. Clinic of acute purulent diseases of the hand and fingers.
12. Treatment of felon and phlegmon of the hand.
13. Diabetic foot: concept, forms, clinic, treatment.

Theme 29. Sepsis, anaerobic clostridial and non-clostridial soft tissue infections.

Form holding - practical lesson

Questions:

1. The concept of sepsis, classification.
2. Etiopathogenesis of sepsis.
3. Clinic and diagnosis of sepsis.
4. Treatment of sepsis.
5. Modern methods of bacteriological confirmation of sepsis.
6. Anaerobic clostridial infection: etiology, pathogenesis, pathogens, patho-anatomical picture.
7. Clinic and diagnosis of various forms of anaerobic infection.
8. General and local treatment of anaerobic infection.
9. Anaerobic non-clostridial infection: etiopathogenesis, clinical presentation, diagnosis and treatment.
10. Treatment of anaerobic non-clostridial soft tissue infection.

Theme 30. Acute specific infection.

Form holding - practical lesson

Questions:

1. Etiology and pathogenesis of tetanus.
2. Clinic and diagnosis of tetanus.
3. Treatment of tetanus.
4. Emergency and routine prevention of tetanus.
5. Anthrax. Etiopathogenesis, clinical features and treatment.
6. Diphtheria wounds. Etiopathogenesis, clinic, diagnosis and treatment.
7. Rabies. Etiopathogenesis, clinic, prevention.
8. Candidomycosis (candidiasis), causes, forms, clinic, diagnosis, treatment.
9. Emergency prevention of tetanus.
10. Emergency prevention of rabies
11. Introduction of sera and vaccines by uncommon

Theme 31. Chronic specific infection.

Form holding - practical lesson

Questions:

1. Chronic tuberculosis. Notion Modern problems.
2. Surgical forms of pulmonary tuberculosis. Clinic, treatment.
3. Osteo-articular tuberculosis: classification, pathogenesis.
4. Stages of osteo-articular tuberculosis.
5. The clinical course of osteo-articular tuberculosis (general and local symptoms).
6. Peculiarities of the course of the pre-arthritis, arthritic and post-arthritic stages. Complications. Features puncture sinter abscesses.
7. Features of the course of individual forms of osteo-articular tuberculosis (spondylitis, coxitis, drives).
8. Surgical treatment of individual forms of bone and joint tuberculosis.
9. Tuberculosis of lymph nodes (peripheral and intrathoracic).
10. Bone syphilis: clinic, differential diagnosis with osteomyelitis and bone tuberculosis.
11. Actinomycosis: the main localization, pathogenesis, clinic, diagnosis and treatment.

Theme 32. Basics of circulatory disorders (necrosis, gangrene, ulcers and fistula).

Form holding - practical lesson

Questions:

1. Deaths: the concept, causes and conditions conducive to the development of the disease.
2. Types of death. Features clinic dry and wet gangrene.
3. General and local treatment of necrosis, prevention.

4. Certain types of circulatory disorders, the concept of them, the value of collateral circulation.
5. Thrombosis and embolism: etiopathogenesis, clinic, treatment.
6. Obliterating atherosclerosis, obliterating endarteritis, thromboangiitis obliterans (Buerger's disease): etiopathogenesis, clinical presentation, diagnosis and treatment.
7. Trophic ulcers (varicose, post-traumatic, cicatricial, post-burn, etc.). Etiopathogenesis, clinic and treatment.
8. Bedsores: causes, clinic, treatment and prevention.
9. Fistulas: types, etiopathogenesis, prevention and treatment.
10. Lymphostasis: causes, clinic and treatment.

Theme 33. Basics of surgery for circulatory and lymph circulation disorders of the extremities.

Form holding - practical lesson

Questions:

1. Acute arterial insufficiency of the extremities. Definition, clinic, diagnosis, treatment.
2. Chronic arterial insufficiency of the extremities. Definition, clinic, diagnosis, treatment. Stage.
3. Critical lower limb ischemia.
4. Acute venous insufficiency of the extremities. Definition, clinic, diagnosis, treatment.
5. Chronic venous insufficiency of the extremities. Definition, clinic, diagnosis, treatment.
6. Disorder of lymph circulation.

Theme 34. Surgery. Preoperative preparation of patients.

Form holding - practical lesson

Questions:

1. The concept of surgery, types of surgery.
2. Stages of surgery.
3. Anatomical and pathophysiological rationale for surgical operations.
4. The volume of study of the patient during planned and emergency operations.
5. Features and scope of research of patients, depending on the patient's age, area and organ from which the operation is performed.
6. Justification of indications for emergency and planned operations.
7. Preparation of organs and body systems for surgery, depending on the urgency and volume of the operation, the nature of the underlying disease
8. Monitoring the patient during the operation. Modern methods and equipment for monitoring the condition of the patient.

Theme 35. Post-operative period.

Form conducting - an interactive form-learning game: work in small groups.

Questions:

1. The postoperative period: the concept, pathophysiological changes in the body in this period.
2. Methods of monitoring patients in the postoperative period. Opportunities and methods of monitor surveillance.
3. Possible early postoperative complications from the postoperative wound and the operated organ and area. Their signs and diagnosis. Features after operations on the organs of the abdominal, pleural cavities, soft tissues and bones.
4. Late postoperative complications from the postoperative wound, the operated organ and the region, their clinical picture and diagnosis.
5. Complications of the internal organs, cardiovascular system, lungs, liver, kidneys and neuro-psychological sphere of the patient in the postoperative period, their signs and diagnosis.
6. Thromboembolic complications, risk factors, their occurrence, causes, clinical presentation, prevention and treatment.
7. Nutrition of patients and the value of care after surgery and the value of early activation of patients for the prevention of complications.
8. Treatment of complications arising from the operated organ or area.

Theme 36. History of the disease. Diagnostic algorithm. Epicrisis.

Form conducting - an interactive form-learning game: work in small groups.

Questions:

1. Analysis and discussion of case histories written by each student.
2. Algorithm - concept and types.
3. Epicrisis - the concept and types.

LIST OF QUESTIONS FOR THE EXAM

1. Aseptic, concept, endogenous and exogenous sources of infection. Intrahospital infection, concept, prevention. Orders of the Ministry of Health of the Russian Federation regulating the implementation of measures to prevent purulent infection.
2. Antiseptic, concept, species. Ideological predecessors of antiseptics (L.Paster, N.I. Pirogov) and its creators (I.Zemmelweis, D.Lister). Antiseptics and proteolytic enzymes, classification, methods of application.
3. Prevention of air and droplet infection. Organization of the surgical department (wards, dressing rooms, operating unit). Cleaning in the operating room, its types.
4. Prevention of contact infection. Surgical instruments: classification, features of the device, care, sterilization.
5. Prevention of contact infection. Operating linen, operating and dressing materials, requirements for them, their types, sterilization. Autoclave: its device and work.
6. Prevention of contact infection: preparation of the surgeon's hands for surgery, their methods, sterilization of gloves, preparation of the operating field.
7. Prevention of implantation (implanted) infection. Suture and alloplastic materials: their types, basic requirements for suture material. Sterilization.
8. Characteristics of blood groups. Methods and methods of their determination, errors, their classification and ways of warning.
9. Rh factor and blood cell factor, antigenic structure, importance in surgery, donation in obstetrics, gynecology and pediatrics, methods of determination.
10. Bleeding and blood loss, concept, classification, causes. The reaction of the body to blood loss, pathophysiological and compensatory mechanisms, developing at the same time. Mechanisms of hemostasis, methods of its study.
11. Methods of stopping bleeding: temporary and final (mechanical, chemical, physical, biological). Treatment of hemorrhage.
12. Indications and contraindications for transfusion of blood and its components. Compatibility tests. The mechanism of action of transfused blood and its components.
13. Errors, dangers and complications in blood transfusion: classification, clinic, treatment.
14. Blood substitutes and plasma substitutes (hemocorrectors), classification, indications for use, complications in transfusion and their prophylaxis.
15. Blood preparations: types, indications for use.
16. Modern concepts of blood transfusion. Components of blood: their characteristics, storage conditions, indications for use. Ways and methods of transfusion of blood and its components.
17. Sources of blood for transfusion (reinfusion, autotransfusion, donor blood). Donation.
18. Lymphostasis, the main causes, diagnosis and treatment.
19. Water-electrolyte and acid-base disorders in surgical patients, causes, clinic, diagnosis, correction Endogenous surgical intoxication, causes, clinic, diagnosis, conservative and surgical treatment. Methods detoxification.

20. General anesthesia, its types, the effect of narcotic substances on the body.
Preparation for general anesthesia, premedication. Clinical course of anesthesia.
21. Local anesthesia, its types, the drugs used, their pharmacodynamics, indications, contraindications, dangers and complications.
22. Intravenous anesthesia, drugs used for it. Indications, contraindications, complications.
23. Muscle relaxants, indications for use, mechanism of action, complications.
24. Inhalation anesthesia, its kinds, indications, complications and struggle with them.
25. Neuroleptanalgesia (NLA): indications, drugs used for it.
26. Equipment for anesthesia and artificial ventilation (IVL), methods of mechanical ventilation.
Principles of anesthesia apparatus.
27. Resuscitation, concept. Ways to restore cardiovascular and respiratory activities in the provision of first aid and in the treatment in intensive care units.
28. Terminal states, clinical characteristics, first aid and treatment.
29. Wounds, classification. Morphological and biochemical changes in the wound. Are common principles of treatment of fresh wounds.
30. Primary surgical treatment of wounds, its terms and their justification, technique. Types of seams, used in the initial surgical treatment of wounds.
31. Treatment of festering wounds, treatment and methods of their treatment.
32. Bitten wounds: clinical manifestations, peculiarities of treatment, complications.
33. Penetrating wounds of the pleural cavity, complications, first aid, treatment.
34. Traumatism: concept, causes, classification, organization of first aid and treatment
35. Shock, its types, pathogenesis, clinic, diagnosis, first aid and treatment traumatic shock.
36. Shock, its types. Traumatic shock, etiopathogenesis, clinic, diagnosis, treatment, prevention.
37. Thermal burns and burn disease, classification, disorders of the body with burns, determination of the area and degree of burn, first aid and treatment of burn disease.
38. Electrical injury: etiopathogenesis, classification, local and general manifestations, the first help and treatment.
39. Frostbites: etiopathogenesis, classification, clinic, first aid, treatment, prevention.
40. Chemical burns of skin and mucous membranes: causes, features of acid burns and alkalis, first aid and treatment.
41. Injuries to the chest and organs in it: a clinic, first aid, treatment.

42. Injuries of the abdominal cavity and its organs: mechanism, clinic, diagnosis, first aid and treatment.
43. Closed fractures of long bones: biomechanism, classification, general and local phenomena, clinic, diagnostics.
44. Open fractures of long bones: the features of the clinic, first aid and treatment, complications and their treatment.
45. Closed injuries of soft tissues (bruises, sprains, tears), mechanism, clinic, first aid, treatment.
46. Delayed consolidation and false joints in the treatment of bone fractures: causes, treatment.
47. Transport immobilization in bone fractures, types of immobilizing materials, rules of immobilization.
48. The syndrome of prolonged compression and the syndrome of positional compression, causes, pathogenesis, clinic, classification, first aid, treatment.
49. Functional method of treatment of bone fractures: species, indications for use.
50. Compression-distraction osteosynthesis: its place in the treatment of bone fractures, indications for use.
51. Gypsum: its properties, determination of suitability, plaster casts, species, indications to application, complications.
52. Dislocation of joints: biomechanism, types of dislocations of individual joints, clinic, diagnosis, first aid, treatment.
53. Bedsores: concept, cause, signs, treatment, prevention.
54. Acute purulent diseases, general issues of etiopathogenesis, stages, classification, clinic, diagnosis, treatment and prevention.
55. Acute purulent diseases of the skin and subcutaneous fat (furuncle, furunculosis, carbuncle, hydradenitis, abscesses, phlegmon): etiopathogenesis, clinic, treatment.
56. Purulent processes of the cellulose tissue of the retroperitoneal space and the pelvis, purulent paranephritis.
57. Acute purulent diseases of the hand and fingers: etiopathogenesis, classification, clinic, treatment, prevention.
58. Subfascial and intermuscular phlegmons of the extremities, phlegmon of the foot, cause, clinic, diagnosis and treatment.
59. Axillary and subpectoral phlegmon, causes, clinic, diagnosis and treatment
60. Purulent diseases of glandular organs (parotitis, pancreatitis, prostatitis), causes, clinic, diagnosis and treatment.
61. Acute purulent-destructive diseases of the abdominal cavity and peritonitis: etiopathogenesis, clinic, diagnosis, treatment.

62. Purulent and purulent-destructive diseases of the lungs and pleural cavity: etiopathogenesis, classification, clinic, diagnosis, treatment.
63. Lymphangitis, lymphadenitis, adenoflegion, etiopathogenesis, clinic, treatment.
64. Neck phlegmon, causes, clinic, diagnosis, treatment.
65. Mastitis: etiopathogenesis, classification, clinic, diagnosis, treatment, prevention.
66. Erysipelatous skin inflammation: etiopathogenesis, classification, clinic, treatment.
67. Surgical forms of pulmonary tuberculosis and tuberculous lymphadenitis, forms, clinic, diagnosis, treatment.
68. Anaerobic gas gangrene, pathogens, pathogenesis, clinic, treatment, prevention.
69. Purulent arthritis and bursitis, cause, clinic, diagnosis, treatment.
70. Acute and chronic paraproctitis, causes, clinic, diagnosis and treatment.
71. Inflammatory diseases of veins (phlebitis, thrombophlebitis, phlebothrombosis), the cause, clinic, diagnosis, treatment.
72. Antibiotic therapy for purulent surgical diseases, indications, complications and modern problems.
73. General purulent infection (sepsis), etiopathogenesis, classification, clinic, diagnosis, treatment and prevention.
74. Osteomyelitis: concept, etiopathogenesis, classification, clinic, diagnosis and treatment.
75. Syphilis of bones and joints: clinic, differential diagnostics with osteomyelitis and tuberculosis, treatment.
76. Tuberculosis of the spine: a clinic, diagnostics, treatment.
77. Tuberculosis of the spine and driving: clinic, diagnosis, treatment.
78. Purulent meningitis and abscesses of the brain, cause, clinic, diagnosis and treatment.
79. Purulent mediastinitis, causes, clinic, diagnosis, treatment.
80. Gangrene: concept, causes. Gangrene in vascular diseases of the extremities, causes, clinic, diagnosis, treatment.
81. Malformations of the skull, brain and spinal cord. Reason, clinic, diagnosis, principles of treatment.
82. Malformations of the development of the cardiovascular system: clinic, diagnosis, treatment.
83. Congenital diseases of the neck: clinic, diagnosis, treatment.
84. Congenital diseases of the digestive tract: clinic, diagnosis, treatment.
85. Malformations of the genitourinary system: types, clinic, diagnosis, treatment.
86. Congenital malformations of the spine: a clinic, diagnosis, treatment.
87. Congenital malformations of limbs: clinic, diagnosis, treatment.
88. General data on tumors, etiopathogenesis, precancerous diseases, classification, Clinic, general principles of diagnosis and treatment.
89. Tumors of muscular, vascular and nerve tissue: clinic, treatment.

90. Benign tumors of connective tissue: clinic, treatment.
91. Benign epithelial tumors: signs, treatment, depending on localization.
92. Malignant tumors of connective tissue: clinic, diagnosis, treatment.
93. Tetanus: etiopathogenesis, classification, clinic, treatment, emergency and planned prevention.
94. Rabies, etiopathogenesis, prevention and antiepidemic measures.
95. Empyema, the concept. Empyema of individual localizations, clinic, diagnosis, treatment.
96. Fistulas: concept, classification, clinic, treatment.
97. Obliterating arterial diseases of the extremities, thrombosis and embolism: etiopathogenesis, clinic, diagnosis, treatment, complications and their treatment.
98. Actinomycosis: etiopathogenesis, basic localization, clinic, treatment. Candidomycosis, causes, treatment.
99. Askaridosis and the surgical diseases caused by it: a clinic, treatment.
100. Echinococcosis and alveococcosis: etiopathogenesis, clinic, diagnosis, complications, treatment.
101. Opisthorchiasis, pathways of infection, clinic, diagnosis, treatment.
102. Anthrax and diphtheria of wounds: a clinic, differential diagnostics with purulent diseases, treatment, prevention.
103. Ulcers, the concept. Trophic ulcers of the lower extremities: causes, clinic, treatment.
104. Transplantation of tissues, organs and cells: indications, classification of tissues in dependence from the source of receipt.
105. Plastic of the skin, muscles, vessels, nerves, bones: indications, methods.
106. Preoperative preparation and its scope, depending on the nature of the operation and its urgency.
107. Preoperative period, scope of examination of a patient before surgery, preparation of organs and systems of the body, its features in emergency operations.
108. Surgical operation, concept, species, anatomical and physiological substantiation of surgical operations.
109. Postoperative period, care of patients, possible complications, their treatment and prevention.
110. Catheterization, puncture and drainage of the bladder, indications, technique.
111. Puncture and catheterization of peripheral and central veins, indications, techniques, complications.

112. Puncture of cavities of joints and bones, indications, technique.
113. Puncture and drainage of the pleural cavity, indications, technique.
114. Puncture of pericardium, indications, technique, points.
115. Puncture of the cavities of the heart, indications, technique.
116. Puncture of abdominal cavity - laparocentesis, indications, technique, possible complications.
117. Lumbar puncture, indications, technique.
118. Indications for sensing and draining of the esophagus, stomach, thin and thick intestines. Technique, possible complications.
119. Drainage of hollow organs of the abdominal cavity through natural openings and with using operations, indications. Principles of conducting.
120. Drainage of wounds and body cavities, types of drainage (active, passive, washing and aspiration).

Questions on offset 2 course discipline general surgery

1. Definition and concept - Surgery.
2. Antiseptic. Definition of the concept. Types of antiseptics.
3. The mechanism of action of antiseptics. Characteristics of basic antiseptics and antibiotics. Methods of use of antiseptic drugs.
4. Asepsis. Definition of the concept. The value of asepsis for surgery in modern conditions.
5. Sources of infection. The concept of nosocomial, intrahospital, nosocomial infection.
6. Organization of the surgical department, its layout, main premises and their device. Chamber, dressing, their equipment and cleaning.
7. Operational unit, its device and equipment. Cleaning in the operating room, its types.
8. Orders and instructions of the Ministry of Health of the Russian Federation on the prevention of intra-hospital infection. The essence of the orders.
9. Dressings: its types and basic properties. Requirements for dressings.
10. Training of hands of the personnel for operation.
11. Preparation of the surgical field.
12. Suture material, its types and purpose, classification by source. Requirements.
13. Autoplastic and homoplastic materials used in surgery and traumatology and their sterilization.
14. General anesthesia (anesthesia). Types of anesthesia as prescribed. The mechanism of action of drugs on the body (the theory of anesthesia).
15. The clinical course of anesthesia in stages.
16. Mask anesthesia. Indications, contraindications and complications.

17. Endotracheal anesthesia. Indications, contraindications and complications.
18. Intravenous anesthesia. Indications, contraindications and complications.
19. Local anesthesia. Methods of local anesthesia. Indications, contraindications and complications.
20. Conductive, spinal and epidural anesthesia. Indications, contraindications and complications.
21. Neuroleptanalgesia. Indications, contraindications and complications, drugs used.
22. Methods of management of vital body functions (artificial hypotension, hypothermia).
23. Reanimation. Notion Vital functions of the body, their types and causes of violations, their types.
24. The concept of bleeding and blood loss. The hemostasis system is normal.
25. Classification of bleeding.
26. Temporary methods to stop bleeding.
27. Methods for the final stop of bleeding. Treatment of blood loss.
28. Central venous pressure (CVP). The method of determination and value for determining the volume of blood loss and the degree of dehydration.
29. The hemostasis system is normal. Methods for the study of hemostasis. Thromboembolic complications, causes, clinical presentation, treatment and prevention.
30. Hemorrhagic syndrome in surgery. DIC or TGS-syndrome.
31. The concept of endogenous intoxication and its main types in surgical patients.
32. Effective detoxification methods. Concept, types, indications.
33. Introductory electrolyte disorders in surgical patients, causes. Methods for correcting electrolyte-induced disturbances, used solutions.
34. Erythrocyte and plasma factors of blood groups (agglutinogens and agglutinins). Designations of blood types.
35. The method of determining blood groups. Errors in the determination of blood groups.
36. Rh factor, its value, the method of determination.
37. Compatibility tests. Methods of conducting tests.
38. Thermal burns. Classification by degrees and stages of flow. Methods for determining the area of destruction.
39. First aid for thermal burns. Complications of thermal burns.
40. Chemical burns of the skin. Causes, first aid and treatment. Chemical burns of the esophagus, clinic, first aid.
41. Frostbite, causes, classification by degrees and area of damage.
42. First aid and treatment for frostbite. Technique of imposing thermoisolating dressings. Freezing, symptoms, first aid and treatment.
43. Electric shock. Causes, local and general effects of electric current on the body. First aid and treatment for electrical injuries.
44. Wounds, classification by origin and nature of wounds, their localization and relationship to the cavities of the body.

45. The course of the wound process, depending on its phase.
46. First aid for wounds, depending on their nature, complications and attitudes to the body cavities. General principles of treatment of wounds.
47. Primary surgical treatment of wounds. General concepts and its principles.
48. General principles of treatment of infected wounds. General and local treatment of infected wounds. Wound drainage methods.
49. Developmental impairments: concept, classification, treatment principles.
50. Transplantology. Basics of plastic surgery.
51. Tumors: definitions and features of tumors of different tissues.
52. Parasitic diseases: classification and main differences.
53. Desmurgy. Bandages on the body and abdomen.
54. Desmurgy. Headbands.
55. Desmurgy. Bandages on UPPER limbs.
56. Desmurgy. Bandages on the limbs.

TRAINING methodical and information Maintenance

a) List of recommended literature

Main literature

General surgery [Электронный ресурс] : The manual / Gostishchev V.K. - М. : ГЭОТАР-Медиа, 2015. -
<http://www.studentlibrary.ru/book/ISBN9785970434918.html>

Additional literature

1. The Course of Faculty (Analytical) Surgery in Pictures, Tables and Schemes [Электронный ресурс] / M.A. Lagoon, B.S. Kharitonov, edited by professor S. V. Vertyankin - М. : ГЭОТАР-Медиа, 2017. Режим доступа: <http://www.studentlibrary.ru/book/ISBN9785970439272.html>
2. General surgery : The manual / Gostishchev V.K. - М. : ГЭОТАР-Медиа, 2015. - 136 p.

Educational literature

1. A.V. Smolkina, S.V. Makarov, V.P. Demin, S.I. Barbashin. Sharp purulent diseases of skin and hypodermic fatty cellulose / Study Guide (e-course). - Ulyanovsk, USU, 2019. - 23 p.
 URL: <http://edu.ulsu.ru/courses/955/interface/>
2. A.V. Smolkina, S.V. Makarov, V.V. Ggoevikh, I.I. Midlenko, S.K. Lonskaya. Resuscitation, reanimation, anesthesia // Study Guide (e-course). - Ulyanovsk, USU, 2019. - 30 p. URL: <http://edu.ulsu.ru/courses/956/interface/>
3. Astakhov O. B. Veins and venous anastomoses of the trunk, and it's clinical value : for students of the Faculty of Medicine in the following specialties: 31.05.01 -

- General Medicine : In English / O. B. Astakhov, A. O. Plugatyreva ; Ulyanovsk State University, Institute of Medicine, Ecology and Physical culture. - Ulyanovsk : ULSU, 2018. - 39 p.
4. Smolkina A.V., Makarov S.V., Ostrovsky V.K., Demin V.P. Fractures of bones. Dislocations. First aid. Transport immobilization: electronic teaching method. allowance. // Study Guide (e-course). - Ulyanovsk, USU, 2018. - 33 p. URL: <http://edu.ulsu.ru/courses/910/interface/>
 5. Smolkina A.V., Makarov S.V., Ostrovsky V.K., Midlenko I.I. Wounds, bleedings. Desmurgiya – science about bandages: electronic teaching method. allowance. // Study Guide (e-course)..- Ulyanovsk, USU, 2018. - 32 p. URL: <http://edu.ulsu.ru/courses/912/interface/>
 6. Smolkina A.V., Makarov S.V. GUIDELINES FOR INDEPENDENT WORK OF STUDENTS FOR THE DISCIPLINE "GENERAL SURGERY. INTRODUCTION TO SPECIALTY "FOR SPECIALTY 05.31.01 "MEDICAL BUSINESS"- [Электронный ресурс].- Ulyanovsk, 2019. <https://www.ulsu.ru/media/documents/>
 7. Smolkina A. V., Ostrovsky V. K., Makarov S.V.. METHODOLOGICAL GUIDELINES FOR PRACTICAL EXERCISE ON THE DISCIPLINE "GENERAL SURGERY. INTRODUCTION TO SPECIALTY " FOR SPECIALTY 05/31/01 "MEDICAL BUSINESS" -[Электронный ресурс].- Ulyanovsk, 2019. <https://www.ulsu.ru/media/documents/>

в) software:

title agreement
 ATP Consultant Plus Contract No.
 NEB RF
 EBS IPRBooks
 AIBS "MegaPro"
 System "Anti-plagiarism. University"
 Microsoft Windows
 Microsoft Office 2016
 MyOffice Standard
 Automated information system “Vitacor RMIS”
 StatisticaBasicAcademicforWindows 13

с) databases, reference and search systems:

1. Electronic library systems:
 - 1.1. IPRbooks: electronic library system: website / group of companies AI PI Ar Media. - Saratov, [2020]. - URL: <http://www.iprbookshop.ru> – - access Mode: for registered users. users'. - Text: electronic.

- 1.2. YURAYT: electronic library system: website / LLC Electronic publishing house YURAYT. - Moscow, [2020]. - URL: <https://www.biblio-online.ru> – - access Mode: for registered users. users'. - Text: electronic.
- 1.3. student Consultant: electronic library system: website / Politehresurs LTD. - Moscow, [2020]. - URL: http://www.studentlibrary.ru/catalogue/switch_kit/x2019-128.html. - Access mode: for registered users. users'. - Text: electronic.
- 1.4. LAN: electronic library system: website / EBS LAN LLC. - Saint Petersburg, [2020]. - URL: <http://www.studentlibrary.ru/pages/catalogue.html> <https://e.lanbook.com> – - access Mode: for registered users. users'. - Text: electronic.
- 1.5. Znaniy.com : e-library system : website / OOO Synium. - Moscow, [2020]. - URL: <http://www.studentlibrary.ru/pages/catalogue.html> <http://znaniy.com> – - access Mode: for registered users. users'. - Text: electronic.
- 1.6. Clinical Collection: collection for medical universities, clinics, medical libraries / EBSCOhost : [portal]. - URL: <http://web.a.ebscohost.com/ehost/search/advanced?vid=1&sid=e3ddfb99-a1a7-46dd-a6eb-2185f3e0876a%40sessionmgr4008>. - access Mode: for authorization. users'. - Text: electronic.
2. ConsultantPlus [Electronic resource]: reference legal system. / Consultant Plus LLC-Electron. Dan. - Moscow: ConsultantPlus, [2020].
3. databases of periodicals:
- 3.1. database of periodicals: electronic journals / LLC IVIS. - Moscow, [2020]. - URL: <https://dlib.eastview.com/browse/udb/12> – - access Mode: for authorization. users'. - Text: electronic.
- 3.2. eLIBRARY.RU: scientific electronic library: website / LLC Scientific Electronic Library. - Moscow, [2020]. - URL: <http://elibrary.ru> – - access Mode: for authorization. users'. - Text: electronic
- 3.3. "Grebennikon": electronic library / Grebennikov ID. - Moscow, [2020]. - URL: <https://id2.action-media.ru/Personal/Products> – - access Mode: for authorization. users'. - Text: electronic.
4. national electronic library: electronic library: Federal state information system: website / Ministry of culture of the Russian Federation; RSE. - Moscow, [2020]. - URL: <http://www.studentlibrary.ru/pages/catalogue.html> <https://нэб.рф> – - access Mode: for users of the scientific library. - Text: electronic.
5. SMART Imagebase / / EBSCOhost: [portal]. - URL: <https://ebsco.smartimagebase.com/?TOKEN=EBSCO-1a2ff8c55aa76d8229047223a7d6dc9c&custid=s6895741> – - access Mode: for authorization. users'. - Image : electronic.
6. Federal information and educational portals:
- 6.1. Single window of access to educational resources: Federal portal / founder of the Federal state educational INSTITUTION DPO CRGOP and it. - URL: <http://window.edu.ru/>. - Text: electronic.

6.2. Error! Invalid hyperlink object. Russian education: Federal portal / founder of the Federal state educational INSTITUTION DPO CRGOP and it. - URL: <http://www.edu.ru>. - Text: electronic.

7. Ulsu Educational resources:

7.1. Ulsu Electronic library: ABIS Mega-PRO module / date Express LLC. - URL: <http://lib.ulsu.ru/MegaPro/Web> – - access Mode: for users of the scientific library. - Text: electronic.

7.2. Ulsu Educational portal. - URL: <http://edu.ulsu.ru> – - access Mode: for registered users. - Text: electronic.