Surgical Diseases Exam Questions for 5th-Year Students: Academic Year 2022–2026

Liver Diseases

1. Anatomy, physiology, and special diagnostic methods of the liver diseases.
2. Non-parasitic liver cysts: etiology, clinical features, diagnosis, differential diagnosis, treatment.
3. Benign liver lesions: hemangioma, adenoma, focal nodular hyperplasia — clinical features, diagnosis, differential diagnosis, and treatment.
4. Pyogenic liver abscess: microbiology, pathogenesis, clinical presentation, differential diagnosis, and treatment.
5. Amebic liver abscess: pathogenesis, pathology, clinical features, differential diagnosis, and treatment.
6. Differential diagnosis of focal liver diseases: clinical, laboratory, and radiological features distinguishing hemangioma, adenoma, FNH, hepatocellular carcinoma, metastases, and liver abscesses.
7. Challenges and errors in the diagnosis and treatment of liver diseases: diagnostic pitfalls, treatment complications, and strategies for prevention.
8. Modern minimally invasive technologies in the diagnosis and treatment of focal liver lesions: interventional ultrasound, CT-guided procedures, and laparoscopic techniques.
9. Echinococcosis: clinical features, diagnosis, treatment, indications for surgery, and types of operations (cystectomy, pericystectomy, liver resection).
10. Alveococcosis: clinical picture, diagnostic workup, surgical management — indications, types of liver resections, and role of transplantation.
11. Opisthorchiasis: clinical presentation, diagnostic methods, medical and surgical treatment — indications for surgery and types of interventions for complicated cases.
12. Ascariasis: clinical presentation, diagnostic methods, medical and surgical treatment — indications for surgery and types of interventions for complicated cases (intestinal obstruction, biliary ascariasis).

Postcholecystectomy Syndrome. Cholestasis

1. Postcholecystectomy syndrome: definition, classification, clinical features, diagnosis, differential diagnosis, and treatment.
2. Iatrogenic bile duct injuries: causes, clinical features, diagnosis, and treatment (endoscopic and surgical repair).
3. Cholestasis: concept, classification, laboratory findings (enzyme hepatogram), clinical manifestations, and contemporary diagnostic approaches.
4. Obstructive jaundice: differential diagnosis and indications for interventional treatment (endoscopic biliary drainage, papillosphincterotomy, stenting, percutaneous transhepatic cholangiostomy).
5. Types of jaundice: hemolytic, hepatocellular, obstructive — clinical features, laboratory markers (direct/indirect bilirubin, ALT, AST, ALP, GGT), imaging

characteristics, and differential diagnosis. Treatment strategies based on etiology: medical management, endoscopic decompression, and surgical biliary drainage.
6. Choledocholithiasis: etiology, clinical features, diagnostics, treatment.
7. Stenosis of the major duodenal papilla: etiology, clinical features, diagnostics, treatment.
8. Cholangitis: etiology, clinical manifestations (Charcot's triad, Reynolds' pentad), laboratory and instrumental diagnostics, treatment.
9. Mirizzi syndrome: clinical features (obstructive jaundice, recurrent cholangitis), diagnostic methods (ultrasound, MRCP, ERCP), and treatment strategies (cholecystectomy, biliary reconstruction, hepaticojejunostomy).

Portal Hypertension

1. Portal hypertension: definition, classification, etiology, pathogenesis, and clinical presentation.
2. Portal hypertension: clinical picture and diagnostic methods.
3. Gastroesophageal varices in portal hypertension: management strategies and prevention of variceal bleeding.
4. Acute variceal hemorrhage: treatment approaches (pharmacological, endoscopic, balloon tamponade, TIPS, surgical shunting).
5. Complications of portal hypertension: clinical features, diagnosis, treatment, and outcomes.
6. Modern minimally invasive technologies in the treatment of portal hypertension.
7. Severity assessment in portal hypertension: Child–Pugh and MELD scores in clinical practice.
8. Prognostic classification of liver cirrhosis and portal hypertension: role of Child–Pugh and MELD in treatment stratification.
9. Ascites in portal hypertension: pathogenesis, diagnostic approach, and treatment strategies.
10. Spontaneous bacterial peritonitis: risk factors, clinical features, diagnosis, and treatment.

Diseases of the Spleen. Diseases of the Diaphragm

1. Anatomy and physiology of the spleen: surgical anatomy and physiological basis for splenic surgery.
2. Classification of spleen diseases: surgical perspective.
3. Splenic cysts: etiology, clinical picture, diagnosis, and surgical treatment.
4. Splenic tumors: clinical features, diagnosis, and surgical management.
5. Regional circulatory disorders of the spleen (thrombosis, splenic artery aneurysm, splenic infarction): clinical picture, diagnosis, and surgical treatment.
6. Surgical pathology of the spleen: indications for splenectomy and surgical approaches.
7. Surgical aspects of spleen involvement in hematological disorders (anemia, hemoblastosis, thrombocytopenic purpura): role of splenectomy, diagnostic and treatment algorithms.

8. Diaphragmatic hernia: classification (Morgagni, Bochdalek, hiatal), etiopathogenesis, clinical features, diagnosis, and surgical management.
9. Anatomy and physiology of the diaphragm: surgical anatomy and classification of diaphragmatic diseases.
10. Relaxation of the diaphragm: etiology, pathogenesis, clinical picture, diagnosis, and surgical treatment.

Deep Vein Thrombosis. Post-thrombotic Disease
1. Deep vein thrombosis: classification, etiopathogenesis, clinical presentation, laboratory and instrumental diagnostics.
2. Management of deep vein thrombosis: pharmacotherapy, compression therapy, surgical indications and techniques, prognosis, and rehabilitation principles.
3. Complications of major vein thrombosis: clinical features, diagnostic approach, and treatment strategies.
4. Thrombophlebitis (including varicothrombophlebitis) of the saphenous veins: classification, etiopathogenesis, clinical picture, laboratory and instrumental diagnostics, and treatment principles.
5. Postthrombotic syndrome: classification, etiopathogenesis, clinical manifestations, diagnosis, treatment principles, indications for surgery, and types of surgical interventions.
6. Venous thromboembolism risk in surgical patients: risk factors, stratification, and preventive measures (mechanical and pharmacological prophylaxis).
7. Paget–Schroetter syndrome (effort thrombosis of the axillary-subclavian vein): etiopathogenesis, clinical features, diagnosis, and treatment.

Diseases of the Mediastinum
1. Topographic anatomy of the mediastinum: surgical anatomy, boundaries, divisions, and clinical significance in mediastinal surgery.
2. Mediastinitis: classification, etiology, clinical features, diagnostics, differential diagnosis, and general principles of treatment.
3. Masses of the anterior mediastinum (thymoma, thymic cysts, teratoma, nonseminomatous tumors; lymphoma, mesenchymal tumors, intrathoracic goiter): etiology, pathological anatomy, clinical features, diagnosis, differential diagnosis, and surgical treatment.
4. Masses of the posterior mediastinum (neurogenic tumors: schwannoma, neurofibroma, ganglioneuroma; paravertebral abscess, bronchogenic and pericardial cysts, esophageal tumors, aortic aneurysms): etiology, pathological anatomy, clinical features, diagnosis, differential diagnosis, and surgical treatment.

Diseases and Trauma of the Esophagus
1. Surgical anatomy and physiology of the esophagus. Classification of esophageal diseases. Special diagnostic methods (endoscopy, chromoendoscopy, barium swallow study, 24-hour pH-impedance monitoring, high-resolution manometry).

2. Surgical anatomy and physiology of the esophagus. Classification of esophageal diseases. Common symptoms of esophageal diseases (dysphagia, odynophagia, heartburn, regurgitation, chest pain) and extraesophageal manifestations.
3. Caustic esophageal injury (chemical burn of the esophagus): incidence, etiology and pathogenesis, classifications (by depth of lesion and pathologic stages), clinical picture, diagnostics, and differential diagnosis.
4. Treatment of caustic esophageal injury (chemical esophageal burns): emergency care, conservative management, indications for surgical intervention.
5. Early and late complications of caustic esophageal injury: clinical features, diagnostics, and treatment strategies.
6. Achalasia: classification (manometric subtypes), etiology and pathogenesis, clinical manifestations, diagnosis (barium swallow, high-resolution manometry), indications for surgical treatment, and types of operations (Heller myotomy, POEM, laparoscopic and thoracoscopic approaches).
7. Esophageal diverticula: classification (by location and by mechanism). Clinical picture, diagnosis (barium swallow, endoscopy, manometry), indications for surgical treatment, and types of operations (diverticulectomy, myotomy, diverticulopexy).
8. Foreign bodies in the esophagus: clinical features, diagnostic methods, and treatment strategies (endoscopic removal, pharmacological relaxation, surgical intervention).
9. Benign tumors of the esophagus: histological types : clinical features (dysphagia, chest pain, bleeding, asymptomatic course), diagnostic methods, and indications for surgical treatment.
10. Esophageal trauma: causes, clinical features, diagnostic methods and management strategies (conservative and surgical).
11. Spontaneous esophageal rupture (Boerhaave syndrome): causes, clinical picture, diagnosis, and management.
12. Hiatal hernias : classification, etiopathogenesis, clinical features, diagnosis, indications for surgical treatment, types of operations and the role of hiatal hernia in the development of gastroesophageal reflux disease and Barrett's esophagus.
13. Gastroesophageal reflux disease: etiopathogenesis, clinical picture, diagnosis, conservative and surgical treatment, complications (Barrett's esophagus, stricture, bleeding), and surgical strategies for Barrett's esophagus with dysplasia.

Blunt Chest Trauma

1. Blunt chest trauma: definition, classification (by mechanism, nature, and type of injury).
2. Blunt chest trauma with injuries to the chest wall: rib fractures, flail chest, and sternal fracture. Clinical presentation, diagnostic workup, and treatment approach.
3. Blunt chest trauma complicated by pneumothorax: causes, classification (simple vs. tension pneumothorax), clinical findings, emergency diagnosis, and management (needle decompression, tube thoracostomy).

4. Blunt chest trauma complicated by hemothorax: causes, classification (small, moderate, massive), clinical findings, emergency diagnosis, and management (tube thoracostomy, indications for thoracoscopy or thoracotomy).
5. Blunt chest trauma complicated by cardiac tamponade or traumatic aortic injury. Pathophysiology, clinical suspicion and presentation, radiographic and sonographic findings, and treatment options.
6. Blunt chest trauma with traumatic aortic injury. Mechanism (deceleration), clinical suspicion, imaging diagnosis (X-ray signs, CT angiography), and treatment options (endovascular repair, open surgery).
7. Blunt chest trauma with tracheobronchial injury. Clinical red flags (massive air leak, persistent pneumothorax), diagnostic confirmation and treatment options.

Blunt Abdominal Injury

1. Blunt abdominal trauma: definition, classification (by mechanism, prevalence, nature and type of injury), mechanisms of injury, pathogenesis, general principles of laboratory and instrumental diagnostics, and treatment strategies.
2. Blunt abdominal trauma: injuries of the anterior abdominal wall — clinical picture, diagnosis, differential diagnosis, and treatment.
3. Blunt abdominal trauma: injuries of parenchymal organs (liver and spleen) — clinical features, diagnosis, indications for surgery, and types of surgical interventions (organ-preserving surgery, resection, splenectomy).
4. Blunt abdominal trauma: injuries of the pancreas — clinical picture, diagnostic challenges, treatment strategies (conservative management, drainage, distal pancreatectomy), and postoperative complications.
5. Blunt abdominal trauma: injuries of hollow organs (stomach, small intestine) — clinical features, diagnosis, surgical tactics (suture, resection), and features of postoperative management.
6. Blunt abdominal trauma: injuries of the colon — clinical picture, diagnosis, surgical treatment (primary repair, resection with anastomosis, colostomy), and factors influencing surgical choice.
7. Blunt abdominal trauma: injuries of major retroperitoneal vessels — clinical picture, emergency diagnosis, indications for surgery, and surgical approaches to vascular control and repair.

Transplantation of Organs and Tissues

1. General principles of transplantation: definition, history, and milestones in transplantation medicine.
2. Types of grafts and donors: autografts, isografts, allografts, xenografts; living and deceased donors; brain death criteria and donor selection protocols.
3. Immunological basis of transplantation: transplant antigens, rejection mechanisms, tissue typing, and crossmatching. Immunosuppressive therapy: types of drugs, indications, and complications.

4. Legal and ethical aspects of organ transplantation: definitions (transplantation, donor, recipient), classification of transplants, and legislative regulations in organ procurement and allocation.
5. Kidney transplantation: indications, donor and recipient selection, preoperative preparation, surgical technique (graft implantation, vascular anastomoses, ureteral reconstruction), postoperative management, and complications.
6. Liver transplantation: indications, donor and recipient selection, surgical techniques (orthotopic, living donor, piggyback technique), postoperative management, and complications.
7. Heart transplantation: indications, donor selection, surgical technique (orthotopic implantation, anastomoses), postoperative management, and complications.
8. Lung transplantation: indications, donor and recipient selection, types of procedures (single, bilateral), surgical technique, postoperative management, and complications.
9. Pancreas transplantation: indications, recipient selection, types of operations (simultaneous pancreas-kidney, pancreas after kidney, pancreas alone), surgical technique (systemic-enteric vs. portal-enteric drainage), postoperative management, and complications.
10. Other types of transplantations (intestinal, multivisceral) and future directions in transplantation medicine.

Diabetes Mellitus in Surgery
1. Diabetes mellitus in surgical patients: definition, classification, and pathophysiological changes affecting surgical outcomes.
2. Preoperative management of diabetic patients: assessment, glycemic control, and risk stratification.
3. Intraoperative and postoperative management of diabetic patients: glycemic control, prevention of complications, and management of hyperglycemia and ketoacidosis.
4. Surgical complications of diabetes mellitus: acute conditions requiring surgical intervention, emergency care principles, and modern treatment perspectives.
5. Diabetic foot syndrome: definition, classification (Wagner, WiFi), and etiopathogenesis.
6. Diabetic foot syndrome: clinical picture, diagnostic methods (physical examination, vascular assessment, neurological testing, imaging), and differential diagnosis.
7. Conservative treatment of diabetic foot syndrome: glycemic control, wound care, offloading, and management of infection.
8. Surgical treatment of diabetic foot syndrome: indications for surgery, types of interventions (debridement, revascularization, minor and major amputations), and postoperative management.
9. Prevention of diabetic foot syndrome: multidisciplinary approach, patient education, foot care, and regular screening.
10. Acute abdomen in diabetes: diagnostic challenges and surgical approaches.

11. Bariatric Surgery for Type 2 Diabetes: indications, interventions, mechanisms and outcomes.

Diseases of the Thyroid and Parathyroid Glands

1. Nontoxic goiter: etiology and pathogenesis, clinical features, diagnosis, indications for surgery, and types of operations.
2. Hyperthyroidism: etiology and pathogenesis, clinical features, diagnosis, indications for surgery, and types of operations.
3. Diffuse toxic goiter (Graves' disease): etiology and pathogenesis, clinical features, diagnosis, indications for surgery, and types of operations.
4. Acute thyroiditis: etiology and pathogenesis, clinical features, diagnosis, differential diagnosis, indications for surgery, and types of operations.
5. Subacute (de Quervain's) thyroiditis: etiology and pathogenesis, clinical features, diagnosis.
6. Lymphocytic (Hashimoto's) thyroiditis: etiology and pathogenesis, clinical features, diagnosis, indications for surgery, and types of operations.
7. Invasive fibrous (Riedel's) thyroiditis: etiology and pathogenesis, clinical features, diagnosis, indications for surgery, and types of operations.
8. Hyperparathyroidism: etiology and pathogenesis, clinical features, diagnosis, indications for surgery, and types of operations.

Surgical Diseases of the Breast

1. Anatomy and physiology of the breast: surgical anatomy, blood supply, lymphatic drainage, and physiological changes.
2. Classification of breast diseases: congenital, inflammatory, dyshormonal, benign tumors, and malignant neoplasms.
3. Diagnosis of breast diseases: clinical history, physical examination, breast imaging (mammography, ultrasonography, MRI), and biopsy techniques (fine-needle aspiration, core needle biopsy, excisional biopsy).
4. Congenital anomalies of the breast: clinical picture, diagnostics, differential diagnosis, and treatment.
5. Breast injuries: clinical picture, diagnosis, and treatment.
6. Inflammatory disorders of the breast (nonspecific and specific infections): clinical picture, diagnosis, and treatment.
7. Dyshormonal and functional disorders of the breast: clinical picture, diagnostics, differential diagnosis, and treatment.
8. Benign breast tumors and cysts: clinical features, diagnosis, and management.
9. Gynecomastia: definition, etiology, clinical features, diagnosis, and management.
10. Nipple discharge: causes, clinical features, diagnosis, and management.
11. Mastalgia: causes, clinical features, diagnosis, and management.

Head of Department of Surgery
and Transplantoplogy with advanced training course and retraining, professor — O.O. Rummo