

शहीद धर्मभक्त राष्ट्रिय प्रत्यारोपण केन्द्र
नेपाल स्वास्थ्य सेवा, सर्जरी समूह, ट्रान्सप्लाण्ट उपसमूह, सिनियर रजिष्ट्रार/ रजिष्ट्रार आठौं (८) तहको
प्रतियोगितात्मक परीक्षाको लागि पाठ्यक्रम

एवं परीक्षा योजना

यस पाठ्यक्रम योजनालाई दुई चरणमा विभाजन गरिएको छ :

प्रथम चरण :- लिखित परीक्षा (Written Examination)

पूर्णाङ्क :- २००

द्वितीय चरण :- अन्तर्वार्ता (Interview)

पूर्णाङ्क :- ३०

प्रथम चरण (First Phase) : लिखित परीक्षा योजना (Written Examination Scheme)

Paper	Subject		Marks	Full Marks	Pass Marks	No. Questions & Weightage	Time Allowed
I	General Subject	Part I: Management	35	100	40	3 × 5 = 15 (Short answer) 2 × 10 = 20 (Long answer)	3.00 hrs
		Part II: General Health Issues	35			3 × 5 = 15 (Short answer) 2 × 10 = 20 (Long answer)	
		Part III: Human Organ Donation & Transplantation	30			3 × 10 = 30 (Long answer)	
II	Technical Subject			100	40	10 × 10 = 100 (Long answer)	3.00 hrs

द्वितीय चरण (Second Phase)

Subject	Full Marks	Examination
Interview	30	Oral

द्रष्टव्य :

- यो परीक्षा योजनालाई प्रथम चरण (लिखित परीक्षा) र द्वितीय चरण (अन्तर्वार्ता) गरी दुई चरणमा विभाजन गरिएको छ ।
- लिखित परीक्षाको माध्यम भाषा नेपाली वा अंग्रेजी अथवा नेपाली र अंग्रेजी दुवै हुनेछ ।
- प्रथम र द्वितीय पत्रको लिखित परीक्षा छुट्टाछुट्टै हुनेछ ।
- परीक्षामा सोधिने प्रश्नसंख्या, अङ्क र अङ्कभार यथासम्भव सम्बन्धित पत्र/विषयमा तोकिए अनुसार हुनेछ ।
- प्रथम पत्रको Part I, Part II र Part III को लागि छुट्टाछुट्टै (Part I को लागि एउटा, Part II को लागि एउटा र Part III को लागि एउटा) उत्तरपुस्तिका हुनेछ भने द्वितीय पत्रको लागि प्रत्येक खण्डका लागि छुट्टाछुट्टै उत्तरपुस्तिकाहरू हुनेछन् । परीक्षार्थीले प्रत्येक खण्डका प्रश्नहरूको उत्तर सोही खण्डका उत्तरपुस्तिकामा लेख्नुपर्नेछ ।
- यस पाठ्यक्रममा जे सुकै लेखिएको भएतापनि पाठ्यक्रममा परेका ऐन, नियमहरू, परीक्षाको मिति भन्दा ३ महिना अगाडी (संशोधन भएका वा संशोधित भई हटाईएका वा थप गरी संशोधित भई कायम रहेका) लाई यस पाठ्यक्रममा परेको सम्झनु पर्दछ ।
- प्रथम चरणको परीक्षाबाट छनोट भएका उम्मेदवारहरूलाई मात्र द्वितीय चरणको परीक्षामा सम्मिलित गराइनेछ ।
- पाठ्यक्रम लागू मिति :-

शहीद धर्मभक्त राष्ट्रिय प्रत्यारोपण केन्द्र
नेपाल स्वास्थ्य सेवा, सर्जरी समूह, ट्रान्सप्लाण्ट उपसमूह, सिनियर रजिष्ट्रार/ रजिष्ट्रार आठौं (८) तहको
प्रतियोगितात्मक परीक्षाको लागि पाठ्यक्रम

Paper I: General Subject

(Management, General Health Issues, Human Organ Donation & Transplantation)

Part I: Management

1. Management: - concept, principles, functions, scope, role, level and skills of managers
2. Hospital management
3. Participative management: concept, advantages and disadvantages, techniques of participation
4. Time management: concept, advantages, and disadvantages
5. Conflict management: concept, approaches to conflict, levels of conflict, causes of conflict and strategies for conflict management
6. Stress management: concept, causes and sources of stress, techniques of stress management
7. Leadership: concept, functions, leadership styles, leadership and management effectiveness
8. Coordination: concept, need, types, techniques, and approaches of effective coordination
9. Communication: concept, communication process and barrier to effective communication, techniques for improving communication

Part II: General Health Issues

1. Present Constitution of Nepal (health and welfare issues)
2. National Health Policy, 2071
3. International health agencies: role and responsibilities of WHO, UNICEF, UNFPA and interagency relationships
4. Medical ethics in general and its application
5. Indigenous and traditional faith healing and health practices
6. Supervision, types and its usage in health sector
7. Monitoring and evaluation system in health
8. Health management information system
9. Health insurance and financing in health care
10. Effects of environment in public health: air pollution, domestic pollution, noise pollution
11. Importance of water, sanitation and hygiene in public health
12. Effects of disaster in public health: deforestation, land slide, flood, earthquake and fire
13. Health volunteers involvement in health service delivery
14. Counseling: - concept, type, importance and its application in health service delivery

Part III: Human Organ Donation and Transplantation

1. General concept of solid organ donation and transplantation
 - 1.1 History of organ transplantation in Nepal
 - 1.2 Immunology and immunosuppressant drugs used in organ transplantation
 - 1.3 Complications among organ transplant recipients and management
2. Human Organ Transplant Act and Regulations
 - 2.1 Human Organ Transplantation (Regulation and Prohibition) Act- 2055
 - 2.2 Human Organ Transplantation (Regulation and Prohibition) Act- 2072
 - 2.3 Human Organ Transplantation Regulations- 2073
 - 2.4 Concept and practice of international rules and regulations on organ donation and transplantation
3. General knowledge about Shahid Dharmabhakta National Transplant Center

शहीद धर्मभक्त राष्ट्रिय प्रत्यारोपण केन्द्र
नेपाल स्वास्थ्य सेवा, सर्जरी समूह, ट्रान्सप्लाण्ट उपसमूह, सिनियर रजिष्ट्रार/ रजिष्ट्रार आठौं (८) तहको
प्रतियोगितात्मक परीक्षाको लागि पाठ्यक्रम

Paper II: Technical subject
Section (A): 40 %

1. Liver and The Biliary Tree

1.1 Anatomy and Pathophysiology

- 1.1.1 Surgical anatomy and anatomical surgery of the liver.
- 1.1.2 The biliary tract and anatomy of biliary exposure.
- 1.1.3 Radiological anatomy of the liver and biliary tract.
- 1.1.4 Assessment of liver function in the surgical patient.
- 1.1.5 Compensatory hyperplasia of the liver.
- 1.1.6 Liver hyperplasia, hypertrophy and atrophy: clinical relevance.
- 1.1.7 Liver blood flow: physiology, measurement and clinical relevance.
- 1.1.8 Bile secretion
- 1.1.9 The function of biliary tract and Factors in production of biliary pain.
- 1.1.10 Biliary tract obstruction: - pathophysiology.
- 1.1.11 Infection in hepato-biliary-pancreatic surgery.
- 1.1.12 Endotoxin in liver and biliary tract disease.
- 1.1.13 Haemostatic factors in liver and biliary disease.

1.2 Diagnostic Techniques

- 1.2.1 Clinical examinations and investigations.
- 1.2.2 USG in surgery of the liver and biliary tract.
- 1.2.3 Isotopic studies.
- 1.2.4 Computed tomography of the liver and biliary tract.
- 1.2.5 Magnetic resonance imaging.
- 1.2.6 Plain radiographs oral cholecystograph and intravenous cholangiography.
- 1.2.7 Percutaneous transhepatic cholangiography.
- 1.2.8 Diagnostic endoscopic retrograde.
- 1.2.9 Angiography.
- 1.2.10 Liver biopsy.
- 1.2.11 Diagnostic laparoscopy.
- 1.2.12 Laparotomy and minilaparotomy
- 1.2.13 Assessment of diagnostic technique for biliary obstruction and liver masses.
- 1.2.14 Intraoperative radiology
- 1.2.15 Intraoperative ultrasound- biliary disease.
- 1.2.16 Choledochoscopy.
- 1.2.17 Intraoperative ultrasound-diagnostic aspects in liver surgery.

1.3 Pre- and Post-Operative Care and Anaesthesia

- 1.3.1 The kidney and liver, pre and postoperative factors.
- 1.3.2 Pre and postoperative nutrition in hepato - biliary surgery.
- 1.3.3 Anaesthesia and postoperative intensive care.

1.4 Interventional Radiology and Endoscopic Technique

- 1.4.1 Intervention endoscopy (technical aspects)
- 1.4.2 Intervention radiology technique in the liver and biliary tract.
- 1.4.3 Percutaneous and endoscopic drainage and endoprosthesis- surgical relevance

1.5 Gallstones and Gall Bladder

- 1.5.1 Gallstones formation and epidemiology
- 1.5.2 The natural history of gallstones and asymptomatic gallstones.
- 1.5.3 Dissolution of gallstones.

शहीद धर्मभक्त राष्ट्रिय प्रत्यारोपण केन्द्र
नेपाल स्वास्थ्य सेवा, सर्जरी समूह, ट्रान्सप्लाण्ट उपसमूह, सिनियर रजिष्ट्रार/ रजिष्ट्रार आठौं (८) तहको
प्रतियोगितात्मक परीक्षाको लागि पाठ्यक्रम

- 1.5.4 Acute cholecystitis.
- 1.5.5 Chronic cholecystitis.
- 1.5.6 Biliary acute pancreatitis.
- 1.5.7 The technique of cholecystectomy.
- 1.5.8 Laparoscopic cholecystectomy and laparoscopic choledocholithotomy.
- 1.5.9 Cholecytolithiasis: which approaches gallbladder disease.
- 1.5.10 Shock wave therapy for gall bladder and bile duct stones.
- 1.5.11 Stones in the common bile duct- surgical approaches.
- 1.5.12 Stones in the bile duct- endoscopic approaches.
- 1.5.13 Intervention radiology in the management of duct stones.
- 1.5.14 Dissolution of the common bile duct stones.
- 1.5.15 Stones in CBD, which approach when?
- 1.5.16 Intrahepatic stones.
- 1.5.17 Supraduodenal choledochotomy.
- 1.5.18 Transduodenal sphincteroplasty and exploration of CBD.
- 1.5.19 Choledochoduodenostomy- technique.
- 1.5.20 Postcholecystectomy problems.
- 1.5.21 Papillary stenosis.
- 1.6 Biliary Stricture and Fistula**
 - 1.6.1 Biliary atresia
 - 1.6.2 Scroosing cholangitis.
 - 1.6.3 Benign biliary strictures
 - 1.6.4 External biliary fistula.
 - 1.6.5 Internal biliary fistula and gallstone ileus.
- 1.7 Biliary Tumours**
 - 1.7.1 Tumours of the bile duct- pathological aspects.
 - 1.7.2 Benign tumours and pseudotumours of biliary tract.
 - 1.7.3 Tumours of the gall bladder.
 - 1.7.4 Cancer of the bile ducts.
 - 1.7.5 Periapillary and pancreatic cancer.
 - 1.7.6 Whipple pancreaticoduodenectomy.
 - 1.7.7 Transduodenal resection of the papilla of Vater.
 - 1.7.8 Percutaneous intubation techniques in biliary and periampullary cancer.
 - 1.7.9 The endoscopic management of biliary and periampullary cancer.
- 1.8 Biliary Bypass and Intubational Techniques**
 - 1.8.1 Hilar and interhepatic biliary-enteric anastomosis.
 - 1.8.2 Operative intubational technique in biliary obstruction.
- 1.9 Liver and Biliary Infection and Infestation**
 - 1.9.1 Cholangitis non toxic and toxic.
 - 1.9.2 Liver abscess and subphrenic abscess.
 - 1.9.3 Amebiasis and biliary infestation.
 - 1.9.4 Hydatid disease.
 - 1.9.5 Recurrent pyogenic cholangitis.
- 1.10 Biliary and Liver Cysts**
 - 1.10.1 Choledochal cyst
 - 1.10.2 Choledochal cyst in adult life
 - 1.10.3 Non-parasitic cystic disease of the liver and intrahepatic biliary tree.
 - 1.10.4 Surgical management of Non-parasitic liver cysts.

शहीद धर्मभक्त राष्ट्रिय प्रत्यारोपण केन्द्र
नेपाल स्वास्थ्य सेवा, सर्जरी समूह, ट्रान्सप्लाण्ट उपसमूह, सिनियर रजिष्ट्रार/ रजिष्ट्रार आठौं (८) तहको
प्रतियोगितात्मक परीक्षाको लागि पाठ्यक्रम

1.11 Injury and Haemorrhage

- 1.11.1 Liver and bile duct injury.
- 1.11.2 Trauma to the liver vasculature aneurysm and atriovenous fistula.
- 1.11.3 Haemobilia.

1.12 Liver Tumours

- 1.12.1 Tumors of the liver- Pathological aspects.
- 1.12.2 Benign liver tumors.
- 1.12.3 Primary hepato-cellular carcinoma.
- 1.12.4 Liver tumors in children.
- 1.12.5 Metastatic tumor of the liver.
- 1.12.6 Endocrine aspects of liver tumors.
- 1.12.7 Embolization of liver tumor.
- 1.12.8 Ischemic therapy of liver tumors.
- 1.12.9 Chemotherapy of liver tumors.
- 1.12.10 Intra-arterial chemotherapy for liver tumors.

1.13 Hepatic Resection

- 1.13.1 Liver resection- liver and biliary tumours.
- 1.13.2 Liver resection in cirrhosis of the liver.
- 1.13.3 Segment oriented anatomical liver resection.
- 1.13.4 Intraoperative Ultrasound and liver surgery.

1.14 CIRRHOSIS AND PORTAL HYPERTENSION

- 1.14.1 Cirrhosis and portal hypertension: pathological aspects.
- 1.14.2 Diagnosis of cirrhosis and portal hypertension
- 1.14.3 Measurement of variceal pressure.
- 1.14.4 Management of liver failure.
- 1.14.5 Management of ascites in cirrhosis and portal hypertension.
- 1.14.6 Medical management of bleeding varices.
- 1.14.7 Injection sclerotherapy in management of cirrhosis and portal hypertension.
- 1.14.8 Operative devascularization and oesophageal transection.
- 1.14.9 Devascularization- modified Sugiura procedure.
- 1.14.10 Percutaneous transhepatic occlusion of oesophageal varices.
- 1.14.11 The place of portasystemic shunting.
- 1.14.12 Portal hypertension in children.
- 1.14.13 Portal hypertension in non alcoholic liver.
- 1.14.14 Budd-Chiari syndrome and veno-occlusive disease.
- 1.14.15 The technique of portacaval shunt.
- 1.14.16 Distal splenorenal shunt.
- 1.14.17 Mesocaval Shunt –technique

Section (B): 30 %

2. The Pancreas

- 2.1 Surgical anatomy of the pancreas.
- 2.2 Surgical physiology: the exocrine and endocrine pancreas.
- 2.3 Estimation of pancreatic enzymes in body fluids.
- 2.4 Pancreatic function tests.
- 2.5 Ultrasonography in surgery of pancreas.
- 2.6 Computerised tomography in surgery of pancreas.
- 2.7 Magnetic resonance imaging.

शहीद धर्मभक्त राष्ट्रिय प्रत्यारोपण केन्द्र
नेपाल स्वास्थ्य सेवा, सर्जरी समूह, ट्रान्सप्लाण्ट उपसमूह, सिनियर रजिष्ट्रार/ रजिष्ट्रार आठौं (८) तहको
प्रतियोगितात्मक परीक्षाको लागि पाठ्यक्रम

- 2.8 Endoscopic retrograde cholangiopancreatography.
- 2.9 Congenital abnormalities: cystic fibrosis, Annular pancreas, Ectopic pancreas.
3. **Acute Pancreatitis**
 - 3.1 Etiopathogenesis and Epidemiology of Alcohol-Induced Acute Pancreatitis .
 - 3.2 Etiology and Epidemiology of Biliary Acute Pancreatitis.
 - 3.3 Acute Pancreatitis Associated with Congenital Anomalies.
 - 3.4 Acute Pancreatitis Associated with Metabolic, Infectious, and Drug-Related Diseases.
 - 3.5 Acute Pancreatitis in Children.
 - 3.6 Genetic Factors in Acute Pancreatitis.
 - 3.7 Histopathology of Acute Pancreatitis.
 - 3.8 Molecular, Biochemical, and Metabolic Abnormalities of Acute Pancreatitis.
 - 3.9 Clinical Course of Alcoholic Acute Pancreatitis.
 - 3.10 Clinical Course and Treatment Principles of Biliary Acute Pancreatitis.
 - 3.11 Clinical Assessment & Biochemical Markers to Objectify Severity and Prognosis.
 - 3.12 Imaging Acute Edematous–Interstitial and Necrotizing Pancreatitis.
 - 3.13 Treatment of Acute Pancreatitis.
 - 3.14 Bacterial and Fungal Infections in Necrotizing Pancreatitis: Pathogenesis, Prevention, and Treatment.
 - 3.15 Endoscopic Treatment of Necrotizing Pancreatitis.
 - 3.16 Management of Fluid Collections in Acute Pancreatitis.
 - 3.17 Management of Pancreatic Fistula in Acute Pancreatitis.
 - 3.18 Enteral Nutrition and Parenteral Nutrition
 - 3.19 Long-Term Outcome after Acute Pancreatitis
 - 3.20 Indications for Interventional and Surgical Treatment of Acute Pancreatitis
 - 3.21 Surgical Management of Necrotizing Pancreatitis
 - 3.22 Strategies for Surgical Treatment of Pseudocysts after Acute Pancreatitis
 - 3.23 Minimal-Access Surgical Treatment of Necrotizing Pancreatitis and Pancreatic Abscess
4. **Chronic Pancreatitis**
 - 4.1 Chronic Pancreatitis: Consequences of Recurrent Acute Episodes
 - 4.2 Fibrogenesis of the Pancreas: The Role of Stellate Cells
 - 4.3 Epidemiology and Pathophysiology of Alcoholic Chronic Pancreatitis
 - 4.4 Hereditary Chronic Pancreatitis
 - 4.5 Epidemiology and Pathogenesis of Tropical Chronic Pancreatitis
 - 4.6 Autoimmune Pancreatitis
 - 4.7 Molecular understanding of Chronic Pancreatitis
 - 4.8 Pain Mechanisms in Chronic Pancreatitis
 - 4.9 Clinical and Laboratory Diagnosis of Chronic Pancreatitis
 - 4.10 Contrast-Enhanced Computed Tomography and Magnetic Resonance Imaging
 - 4.11 Endoscopic Retrograde Cholangiopancreatography, Magnetic Resonance Cholangiopancreatography, and Endoscopic Ultrasound in Chronic Pancreatitis
 - 4.12 Natural Course of Chronic Pancreatitis
 - 4.13 Treatment of Pseudocysts in Chronic Pancreatitis
 - 4.14 Medical Treatment of Chronic Pancreatitis
 - 4.15 Endoscopic and Interventional Therapy of Chronic Pancreatitis
 - 4.16 Strategies for Surgical Treatment of Chronic Pancreatitis
 - 4.17 Chronic Pancreatitis: Late Outcome after Medical and Surgical Treatment
 - 4.18 Management of Pancreatic Diabetes Secondary to Chronic Pancreatitis

5. Neoplastic Lesions of Exocrine Tissue: Pancreatic Cancer

- 5.1 Epidemiology of Pancreatic Cancer
- 5.2 Molecular Biological Understanding of Development of Pancreatic Cancer
- 5.3 Familial Pancreatic Cancer
- 5.4 Pathology of Exocrine Pancreatic Tumors
- 5.5 Precancerous Lesions
- 5.6 Role of Endoscopic Ultrasound for Diagnosis and Differential Diagnosis of Neoplastic Lesions
- 5.7 Radiologic Diagnosis of Pancreatic Cancer: Computed Tomography and Magnetic Resonance Imaging
- 5.8 Clinical Assessment and Staging of Pancreatic Cancer
- 5.9 Role of Positron Emission Tomography in Diagnosis of Pancreatic Cancer and Cancer Recurrence
- 5.10 Tumor Markers in Pancreatic Malignancies
- 5.11 The Role of Laparoscopy and Peritoneal Cytology in the Management of Pancreatic Cancer
- 5.12 Pancreatic Cancer Staging Systems and their Clinical Impact
- 5.13 Endoscopic and Interventional Palliation of Pancreatic Cancer
- 5.14 Pancreatic Cancer: Indications for Resection
- 5.15 Pancreaticoduodenectomy for Pancreatic Cancer: Results after Kausch–Whipple and Pylorus-Preserving Resection
- 5.16 Extended Radical Surgery for Pancreatic Cancer
- 5.17 Palliative Pancreaticoduodenectomy: Benefits and Limitations
- 5.18 Bypass Surgery for Advanced Pancreatic Cancer
- 5.19 Neoadjuvant Treatment of Pancreatic Cancer: Borderline-Resectable Disease
- 5.20 Adjuvant Chemotherapy in Pancreatic Cancer
- 5.21 Palliative Chemotherapy for Advanced Pancreatic Cancer
- 5.22 Management of Cancer Pain
- 5.23 Role of Radiotherapy in the Treatment of Pancreatic Cancer
- 5.24 Management of Cancer Recurrence
- 5.25 Survival and Late Morbidity after Resection of Pancreatic Cancer

6. Endocrine Tumors of The Pancreas

- 6.1 Diagnosis of Endocrine Tumors of the Pancreas
- 6.2 Islet Cell Tumors
- 6.3 Pancreatic Endocrine Tumors in Multiple Endocrine Neoplasia Syndrome
- 6.4 Nonfunctioning Endocrine Tumors.
- 6.5 Surgical Treatment of Endocrine Tumors
- 6.6 Treatment of Carcinoids of the Pancreas and Biliary Tract
- 6.7 Nonsurgical Management of Endocrine Tumors
- 6.8 Liver Transplantation in Advanced Disease of Endocrine Tumors
- 6.9 Long-Term Outcome after Treatment of Endocrine Tumors
- 6.10 Periampullary Tumors: Clinical Presentation and Diagnostic Strategy
- 6.11 Histology of Cancer of the Papilla, Distal Common Bile Duct, and Duodenum
- 6.12 Adenoma and Adenocarcinoma of the Ampulla of Vater: Diagnosis and Management
- 6.13 Endoscopic Treatment of Adenomas of the Ampulla of Vater: Benefits and Limits
- 6.14 Surgical Treatment of Periampullary Cancer: Early and Late Results after Resection

शहीद धर्मभक्त राष्ट्रिय प्रत्यारोपण केन्द्र
नेपाल स्वास्थ्य सेवा, सर्जरी समूह, ट्रान्सप्लाण्ट उपसमूह, सिनियर रजिष्ट्रार/ रजिष्ट्रार आठौं (८) तहको
प्रतियोगितात्मक परीक्षाको लागि पाठ्यक्रम

7. Other Tumors of The Pancreas

- 7.1 Histology of Cystic Tumors of the Pancreas
- 7.2 Diagnostic Imaging of Cystic Tumors
- 7.3 Diagnosis and Natural History of Intra ductal Papillary Mucinous Neoplasms
- 7.4 Mucinous Cystic Neoplasm
- 7.5 Surgical Treatment and Long-Term Outcome of Cystic Neoplasms of the Pancreas
- 7.6 Minimally Invasive and Local Ablation Techniques of Serous and Mucinous Cystic Lesions

8. THE SPLEEN

- 8.1 Anatomy of the spleen.
- 8.2 Splenectomy and Splenorrhaphy.
- 8.3 Laparoscopic Splenectomy.
- 8.4 Post splenectomy complications and management.
- 8.5 Splenic preservation.

Section (C): 40 %

9. Organ (Kidney, Liver, Pancreas) Donation and Transplantation

9.1 Pharmacology and Immunosuppression

- 9.1.1 Basic pharmacology (mechanisms of action, metabolism, adverse effects, potential interactions, dosing strategies, and target levels) for all immunosuppressive agents in current clinical use.
- 9.1.2 Concept of transplant immunology and potential complications and clinical and laboratory markers of over- and under- immunosuppression.
- 9.1.3 Donor and recipient factors which impact the use of immunosuppressive agents including the risk of rejection, infection and malignancy
- 9.1.4 Clinical and pathologic features of acute and chronic cellular and humoral rejection and implement appropriate pharmacologic therapy; identify short and long term ramifications of rejection episodes.

9.2 Opportunistic Infections in transplant recipients.

9.3 Organ Transplantation and malignancies

9.4 Donor and recipient factors that impact the use of immunosuppressive agents, including the risk of rejection, infection, and malignancy.

9.4.1 Rejection

- 9.4.1.1 Identification of recipient groups that would generally be considered at high vs. low risk for acute rejection.
- 9.4.1.2 Induction protocols for management of recipients at high vs. low risk for acute rejection.
- 9.4.1.3 Clinical and pathologic features of acute and chronic cellular and antibody mediated rejection
- 9.4.1.4 Management strategies for the treatment of Antibody mediated rejection, Mild acute cellular rejection, Moderate to severe acute cellular rejection, Chronic rejection
- 9.4.1.5 Identification of the early and late adverse events associated with the treatment of rejection episodes

9.5 Organ Procurement

- 9.5.1 Moral, ethical and legal issues and steps involved in determining brain death.

शहीद धर्मभक्त राष्ट्रिय प्रत्यारोपण केन्द्र
नेपाल स्वास्थ्य सेवा, सर्जरी समूह, ट्रान्सप्लाण्ट उपसमूह, सिनियर रजिष्ट्रार/ रजिष्ट्रार आठौं (८) तहको
प्रतियोगितात्मक परीक्षाको लागि पाठ्यक्रम

- 9.5.2 Moral, ethical and legal issues and steps involved in live organ donation.
- 9.5.3 Basic assessment of the medical, laboratory, and anatomic characteristics of a potential organ donor (live or deceased), the quality of a donor organ, and its suitability for a given recipient.
- 9.5.4 Procedure to safely recover abdominal organs from deceased donors, including those for donation after cardiac death (DCD).
- 9.5.5 Recovery processes for living donor organs and describe the steps necessary to perform relevant organ specific recovery (liver, kidney, or pancreas).
- 9.5.6 Outline the basic principles and limits of organ preservation and be familiar with organ preservation techniques, including pulsatile perfusion.
- 9.6 Kidney Transplantation**
 - 9.6.1 Indications for kidney transplantation, explain the different disease processes resulting in end-stage renal disease, and describe the treatment options.
 - 9.6.2 Basic of principles of donor and recipient selection and deceased donor organ allocation.
 - 9.6.3 Living and deceased donor kidney transplant procedures
 - 9.6.4 Basic immunosuppressive strategies used in kidney transplantation, including induction and maintenance therapy.
 - 9.6.5 Diagnosis of renal transplant rejection including performing diagnostic biopsy, identification of basic pathologic findings of rejection, and treatment strategies for rejection.
 - 9.6.6 Long term follow-up and identification and treatment of short and long term complications of kidney transplantation.
 - 9.6.7 Short and long term outcomes of kidney transplantation.
 - 9.6.8 Basic principles of renal replacement therapy; identification of indications for and surgical techniques necessary to place hemo- and peritoneal dialysis access.
 - 9.6.9 Criteria used to assess suitability of a living donor for kidney transplant
 - 9.6.10 Identification and treatment of surgical complications after kidney transplant
- 9.7 Liver Transplantation**
 - 9.7.1 Basic principles of liver transplantation, donor and recipient selection and donor allocation.
 - 9.7.2 Types of immunosuppressive therapy utilized in liver transplantation.
 - 9.7.3 Different disease processes which may require liver transplantation; management of complications of liver disease including end stage liver disease and the care of patients with fulminant hepatic failure.
 - 9.7.4 Workup needed to diagnose liver transplant rejection.
 - 9.7.5 Technique of percutaneous liver biopsy including management of complications
 - 9.7.6 Operative steps necessary involved in performing liver allograft recovery from deceased donors and deceased donor liver transplant.
 - 9.7.7 Diagnosis and implementation of treatment approaches for both short and long term medical and surgical complications following liver transplantation.
- 9.8 Pancreas Transplantation**
 - 9.8.1 Basic principles of pancreas transplantation, donor and recipient selection and donor allocation.
 - 9.8.2 Types of immunosuppressive therapy utilized in pancreas transplantation.

शहीद धर्मभक्त राष्ट्रिय प्रत्यारोपण केन्द्र
नेपाल स्वास्थ्य सेवा, सर्जरी समूह, ट्रान्सप्लाण्ट उपसमूह, सिनियर रजिष्ट्रार/ रजिष्ट्रार आठौं (८) तहको
प्रतियोगितात्मक परीक्षाको लागि पाठ्यक्रम

- 9.8.3 Different disease processes which may require pancreas transplantation
- 9.8.4 Workup needed to diagnose pancreas transplant rejection.
- 9.8.5 Operative steps necessary involved in performing pancreas allograft recovery from deceased donors and deceased donor pancreas transplant.
- 9.8.6 Diagnosis and implementation of treatment approaches for both short and long term medical and surgical complications following pancreas transplantation.
- 9.9 **Immediate Post Transplant Care after organ (Kidney/ Liver/ Pancreas) transplantation**
 - 9.9.1 Immediate Post Transplant Management
 - ICU management
 - Surgical and Medical Complications
 - Prophylactic Regimen
 - Immunosuppression therapy
 - 9.9.2 Management of Acute Cellular Rejection and Antibody Mediated Rejection
 - Management strategies of acute cellular rejection
 - Management strategies of antibody medicated (humoral) rejection
 - 9.9.3 Post-operative Patient Education
 - Medication teaching
 - Signs and symptoms of infection and rejection
 - Monitoring for infection, rejection and changes in medical status
 - Follow up care post discharge
- 9.10 **Long Term Follow-up**
 - 9.10.1 Follow up Surveillance program (include common complications diabetes, HTN, hypercholesterolemia)
 - 9.10.2 Current recommendations
 - 9.10.3 Role of surveillance biopsy
 - 9.10.4 Non-transplant complications, frequencies, and treatment strategies
 - 9.10.5 Return to Work, School and Quality of Life
 - 9.10.6 Infection and Malignancy
 - Common infections and their timing in the post-transplant period
 - Prevention and treatment of infections
 - Malignancy Risk
 - Prevention and treatment of malignancy
 - 9.10.7 Chronic Rejection
 - Signs and symptoms
 - Current treatment strategies
 - Re-transplantation