

**शहीद धर्मभक्त राष्ट्रिय प्रत्यारोपण केन्द्र**  
नेपाल स्वास्थ्य सेवा, मेडिसिन समूह, ग्यास्ट्रोइन्टेरोलोजी 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 छनौट भएका उम्मेदवारहरूलाई मात्र द्वितीय चरणको परीक्षामा सम्मिलित गराइनेछ ।
- पाठ्यक्रम लागू मिति :-

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**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

**Paper II: Technical subject**

**Section (A): 40 %**

**1. Basic Sciences**

- 1.1 Embryology of the gut, liver, pancreas & congenital anomalies
- 1.2 Immune system of the GIT and its importance in various G.I. disorders
- 1.3 Molecular biology in relation to GIT
- 1.4 Genetic diseases of GIT & liver
- 1.5 Gene Therapy
- 1.6 GI Tumors & Tumor biology
- 1.7 Gastrointestinal hormones in health & diseases
- 1.8 GI related microbiology, clinical chemistry & haematology

**2. Problems related to GIT, Hepatobiliary and Pancreatic system**

- 2.1 Upper & lower G.I. bleeding
- 2.2 Gastrointestinal tuberculosis
- 2.3 HIV and the GIT, hepatobiliary and pancreatic system
- 2.4 GIT & liver in systemic diseases
- 2.5 Cutaneous manifestation of G.I. disease
- 2.6 Gastrointestinal side effects of drugs especially NSAIDS
- 2.7 Gastro-intestinal symptoms physiology and interpretation:
  - 2.7.1 Nausea, vomiting
  - 2.7.2 Pain abdomen
  - 2.7.3 Diarrhoea, constipation
  - 2.7.4 Dysphagia
  - 2.7.5 Jaundice

**3. Nutrition**

- 3.1 Normal nutritional requirement
- 3.2 Nutritional assessment and management
- 3.3 Protein energy malnutrition
- 3.4 Manifestations and management of nutritional deficiency & excess
- 3.5 Nutritional support in various G.I. disorders (malabsorption, acute & chronic pancreatitis, IBD)

**4. Esophagus**

- 4.1 Basic anatomy, histology & physiology
- 4.2 Congenital anomalies
- 4.3 Motor physiology and motor disorder of the esophagus.
- 4.4 GERD & its complication
- 4.5 Esophageal disorders caused by infection, systemic illness, medication Radiation & Trauma

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- 4.6 Esophageal tumors
- 5. **Stomach**
  - 5.1 Anatomy, histology and functions
  - 5.2 Physiology of acid & bicarbonate secretion in health & diseases
  - 5.3 Defense mechanism against acid & pepsin
  - 5.4 Gastroduodenal motor function in health & diseases
  - 5.5 Gastritis (specific & nonspecific)
  - 5.6 H pylori
  - 5.7 Peptic ulcer & its complications, their management
  - 5.8 Stress & stomach
  - 5.9 Gastric hypersecretory states including Zollinger Ellison Syndrome (ZES)
  - 5.10 Surgery for peptic ulcer
  - 5.11 Post gastrectomy complication
  - 5.12 Tumors of stomach
  - 5.13 Diverticuli & hernia of the stomach
- 6. **Small intestine**
  - 6.1 Anatomy, blood supply, histology
  - 6.2 Motility of small intestine
  - 6.3 Congenital anomalies
  - 6.4 Normal absorption of the nutrients
  - 6.5 Intestinal electrolyte absorption and secretion
  - 6.6 Malabsorption syndrome
    - 6.6.1 Pathophysiology, manifestations & approach
  - 6.7 Celiac sprue
  - 6.8 Infection related diseases
    - 6.8.1 Intestinal microflora in health & diseases
    - 6.8.2 Tropical sprue
    - 6.8.3 Infectious diarrhoea & food poisoning
    - 6.8.4 Parasitic diseases
  - 6.9 Small intestinal ulcers
  - 6.10 Short bowel syndrome
  - 6.11 Eosinophilic gastroenteritis
  - 6.12 Food allergies
  - 6.13 Intestinal obstruction & pseudo-obstruction
  - 6.14 Management of diarrhoea.
  - 6.15 G.I. lymphomas
  - 6.16 Small intestinal tumors
  - 6.17 Small intestinal transplantation
- 7. **Colon**
  - 7.1 Basic anatomy, blood supply, histology & functions
  - 7.2 Motility the colon & disorders of motility

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- 7.3 Congenital anomalies
- 7.4 Megacolon
- 7.5 Constipation
- 7.6 Colonic pseudo-obstruction.
- 7.7 Fecal incontinence
- 7.8 Antibiotic associated diarrhoea
- 7.9 Inflammatory bowel disease
  - 7.9.1 Ulcerative colitis
  - 7.9.2 Crohn's disease
  - 7.9.3 Indeterminate colitis
  - 7.9.4 Ileostomies & its management
- 7.10 Diverticular disease of colon.
- 7.11 Radiation entetero-colitis.
- 7.12 Colonic polyps & polyposis syndrome
- 7.13 Malignant disease of colon.
- 7.14 Hemorrhoids
- 7.15 Disease of the anorectum
- 7.16 Other inflammatory diseases of the colon including
  - 7.16.1 Solitary rectal ulcer syndrome
  - 7.16.2 Diversion colitis
  - 7.16.3 Collagenous & microscopic colitis
  - 7.16.4 Non specific ulceration of the colon
  - 7.16.5 Pneumatoses cystoids intestinalis

**Section (B): 40 %**

**8. Pancreas**

- 8.1 Anatomy, Physiology, blood supply developmental anomalies
- 8.2 Physiology of the pancreatic secretion
- 8.3 Pancreatic function test
- 8.4 Acute, recurrent & chronic pancreatitis
- 8.5 Pancreatic tumor (Exocrine & endocrine)
- 8.6 Cystic fibrosis & other childhood disorder of the pancreas
- 8.7 Pancreatic transplantation

**9. Biliary Tree**

- 9.1 Anatomy, Physiology
- 9.2 Physiology of bile formation & excretion
- 9.3 Enterohepatic circulation
- 9.4 Bilirubin metabolism
- 9.5 Approach to the patient with jaundice
- 9.6 Gall stone, its complications & management
- 9.7 Acute calculous cholecystitis

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- 9.8 Miscellaneous disorders of the gall bladder
- 9.9 Acute cholangitis
- 9.10 Benign biliary structures
- 9.11 Benign & malignant neoplasm of the biliary system
- 9.12 Endoscopic management of biliary obstruction
- 9.13 Motility & dysmotility of the biliary system & sphincter of oddi dysfunction
- 9.14 Congenital diseases of the biliary system
- 9.15 Sclerosing cholangitis & recurrent pyogenic cholangitis

**10. Liver**

- 10.1 Anatomy, Physiology, blood supply
- 10.2 Function of liver
- 10.3 Microcirculation of liver
- 10.4 Liver function test
- 10.5 Portal hypertension
  - 10.5.1 Extra hepatic porto splenic vein obstruction
  - 10.5.2 Non cirrhotic portal fibrosis
  - 10.5.3 Cirrhosis
- 10.6 Acute viral hepatitis
- 10.7 Chronic hepatitis
- 10.8 Fulminant hepatic failure
- 10.9 Cirrhosis of liver with the emphasis on the spectrum of alcohol related disorder
- 10.10 Ascites
- 10.11 Hepatorenal syndrome
- 10.12 Autoimmune liver disease
- 10.13 Metabolic liver disease
- 10.14 Primary biliary cirrhosis
- 10.15 Hepatic venous outflow tract obstruction
- 10.16 Fibrocystic disease of the liver
- 10.17 Wilson's disease
- 10.18 Hemochromatosis
- 10.19 Liver abscess & Bacterial, parasitic, Fungal and granulomatous liver disease.
- 10.20 Liver in porphyria, pregnancy & Congestive heart failure
- 10.21 Hepatic tumors
- 10.22 Liver biopsy
- 10.23 Liver transplantation & artificial liver support

**11. Peritoneum and Retroperitoneum:**

- 11.1 Chronic peritonitis
- 11.2 Malignant ascites
- 11.3 Diseases of retroperitoneum

**12. Vascular diseases of the G.I. tract**

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**13. G.I. Radiology**

13.1 Reading and interpreting the common x-ray film's including

13.1.1 X-ray films of the abdomen

13.1.2 Barium studies, ultrasound of abdomen, EUS

13.1.3 CT scan including CT angiography / Portography, MRCP, Portography, Percutaneous Cholangiography (PTC) & PTCD, TIPS, BRTO (Ballon Occluded Transvenous Obliteration), Angiographic Management of difficult GI bleeding, MR scan, angiography and ERCP films

**14. G.I. Pathology**

14.1 Reading and interpreting histological slides of common gastrointestinal and liver diseases

**15. Adequate understanding and training of procedures including upper G.I. endoscopy and lower G.I. procedures**

**16. Orientation of EUS, ERCP Capsule Endoscopy, Chromo endoscopy, Esophageal Manometry, Enteroscopy and pH study**

**Section (C): 20 %**

**17. Organs (Kidney, Liver, Pancreas and others) donation and transplantation**

17.1 Basic concept of solid organ donation and transplantation

17.2 GI assessment and other investigations of the donor and recipient undergoing Liver transplantation

17.3 Concept of immunology and commonly used drugs used in liver transplantation with their side effects

17.4 Complications and their management in a liver transplant recipient