

बि.पि. कोइराला मेमोरियल क्यान्सर अस्पताल
प्राविधिक (स्वास्थ्य) सेवा, मेडिकल (चिकित्सक) समुह, सर्जिकल अंकोलोजी (ग्याष्ट्रोइन्टेरोलोजी) उपसमुह,
अधिकृत नवौं तह, रजिष्ट्रार पदको खुला र आन्तरिक प्रतियोगितात्मक परीक्षाको पाठ्यक्रम
एवं परीक्षा योजना

कुल पूर्णाङ्क : १२०

१. प्रथम चरण : – लिखित परीक्षा				पूर्णाङ्क :- १००	
पत्र / विषय	पूर्णाङ्क	उतीर्णाङ्क	परीक्षा प्रणाली	प्रश्नसंख्या X अङ्क	समय
General Subject and Technical Subject	१००	४०	वस्तुगत बहुवैकल्पिक प्रश्न (MCQs)	१०० प्रश्न x १ अङ्क	१ घण्टा ३० मिनेट

२. द्वितीय चरण : – अन्तर्वार्ता

विषय	पूर्णाङ्क	परीक्षा प्रणाली
अन्तर्वार्ता	२०	मौखिक

द्रष्टव्य :

१. यो परीक्षा योजनालाई प्रथम चरण (लिखित परीक्षा) र द्वितीय चरण (अन्तर्वार्ता) गरी दुई चरणमा विभाजन गरिएको छ ।
२. लिखित परीक्षाको माध्यम भाषा नेपाली वा अंग्रेजी अथवा नेपाली र अंग्रेजी दुवै हुनेछ ।
३. लिखित परीक्षामा यथासम्भव पाठ्यक्रमका सबै एकाईबाट देहाय बमोजिम प्रश्नहरु सोधिनेछ ।

खण्ड	अङ्कभार	वस्तुगत प्रश्न संख्या
A	१०	१० प्रश्न X १ अङ्क = १०
B	१०	१० प्रश्न X १ अङ्क = १०

४. वस्तुगत बहुवैकल्पिक (Multiple Choice) प्रश्नहरुको गलत उत्तर दिएमा प्रत्येक गलत उत्तर बापत २० प्रतिशत अङ्क कट्टा गरिनेछ । तर उत्तर नदिएमा त्यस बापत अङ्क दिइने छैन र अङ्क कट्टा पनि गरिने छैन ।
५. यस पाठ्यक्रम योजना अन्तर्गतका पत्र/विषयका विषयवस्तुमा जेसुकै लेखिएको भए तापनि पाठ्यक्रममा परेका कानून, ऐन, नियम तथा नीतिहरु परीक्षाको मिति भन्दा ३ महिना अगाडि (संशोधन भएका वा संशोधन भई हटाईएका वा थप गरी संशोधन भई) कायम रहेकालाई यस पाठ्यक्रममा परेको सम्भनु पर्दछ ।
६. प्रथम चरणको परीक्षाबाट छनौट भएका उम्मेदवारहरुलाई मात्र द्वितीय चरणको परीक्षामा सम्मिलित गराइनेछ ।
७. पाठ्यक्रम लागू मिति :- २०७४/११/२९

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पत्र/विषय : **General Subject and Technical Subject**

General Subject

Section (A) – 10 Marks

- 1. B.P.Koirala Memorial Cancer Hospital, Related Legislations and General Health Issues**
 - 1.1. B.P.Koirala Memorial Cancer Hospital : History, organizational structure, functions, roles, services, problems and challenges
 - 1.2. National Health Policy
 - 1.3. B.P.Koirala Memorial Cancer Hospital related act and regulations
 - 1.4. Health Service Act, 2053 and Health Service Regulation, 2055
 - 1.5. Professional council related acts and regulations
 - 1.6. NMC and National Health Agencies
 - 1.7. Role and responsibilities of WHO, UNICEF and UNFPA
 - 1.8. Professional and medical ethics
 - 1.9. Preventive Oncology
 - 1.9.1. Cancer epidemiology
 - 1.9.2. Primary prevention (Cancer Awareness, Cancer Education, Vaccination)
 - 1.9.3. Secondary Prevention (Screening, Screening Methods)
- 2. Present Constitution of Nepal (Health and welfare issues)**

Technical Subject

Section (B) – 90 Marks

- 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. disorder
 - 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
 - 1.9 General human anatomy and physiology
- 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

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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, Stomach, Duodenum, Small Intestine, Appendix, Spleen & Portal hypertension:

4.1 Esophagus:

- 4.1.1 Applied anatomy, physiology & embryology
- 4.1.2 Investigations for different esophageal conditions
- 4.1.3 Neoplasm of esophagus – benign & malignant:
 - 4.1.3.1 Benign Tumor and Cysts of Esophagus
 - 4.1.3.2 Esophageal Cancer
 - 4.1.3.3 Esophagogastric Junction tumor
 - 4.1.3.4 Adjuvant and Neoadjuvant Therapy for Ca Esophagus
- 4.1.4 Other Esophageal conditions:
 - 4.1.4.1 Gastro-esophageal reflux disease, Barret's esophagus
 - 4.1.4.2 Esophageal Injuries
 - 4.1.4.3 Paraesophageal and Other Complex Diaphragmatic Hernias

4.2 Stomach, Duodenum, Small Intestine and Appendix:

- 4.2.1 Applied anatomy, physiology & embryology
- 4.2.2 Diagnostic procedures- Barium study, CECT, CT-enteroclysis, MRI, PET scan, Laparoscopy, Diagnostic and Therapeutic Endoscopy of the Stomach and Small Bowel
- 4.2.3 Neoplasm of Stomach, Duodenum, Small bowel and Appendix: Benign and Malignant
 - 4.2.3.1 Benign neoplasm of stomach, duodenum, small intestine and appendix
 - 4.2.3.2 Cancer of stomach: Advanced and Early Gastric Carcinoma
 - 4.2.3.3 Lymphomas
 - 4.2.3.4 Gastrointestinal stromal tumor
 - 4.2.3.5 Carcinoid tumor
 - 4.2.3.6 Adjuvant and Neoadjuvant Therapy for malignant conditions
- 4.2.4 Other conditions:
 - 4.2.4.1 Injuries to the Stomach, Duodenum, and Small Bowel
 - 4.2.4.2 Peptic Ulcer Disease, Zollinger–Ellison Syndrome
 - 4.2.4.3 Foreign Bodies and Bezoars of the Stomach and Small Intestine
 - 4.2.4.4 Small Bowel Obstruction and strangulation, volvulus of the stomach and small bowel
 - 4.2.4.5 Perforation peritonitis
 - 4.2.4.6 Appendicitis
 - 4.2.4.7 Crohn's Disease
 - 4.2.4.8 Tuberculosis of abdomen, peritoneum, small and large bowel
 - 4.2.4.9 Gastric, Duodenal, and Small Intestinal Fistulas
 - 4.2.4.10 Mesenteric Ischemia

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4.2.4.11 Radiation injury to stomach and intestine

4.2.4.12 Short bowel syndrome

4.2.4.13 Internal Hernias: Congenital and Acquired

4.2.4.14 Enteral and parenteral feeding–NG, feeding gastrostomy/
jejunostomy

4.3 Spleen:

4.3.1 Applied anatomy, physiology & embryology of spleen

4.3.2 Preoperative evaluation, preparation and complications of splenectomy

4.3.3 Management of splenic trauma in adults and in children

4.3.4 Cysts, tumors and abscess of the spleen

4.3.5 Splenectomy for conditions other than trauma

4.4 Portal Hypertension:

4.4.1 Applied anatomy & Pathophysiology of portal hypertension, location of
Portosystemic Shunting

4.4.2 Etiology, clinical presentation, diagnostic work up & management of portal
hypertension- cirrhotic & non-cirrhotic

4.4.3 Portal Hypertension in Children

4.4.4 Medical and Endoscopic Management of Bleeding Varices; Primary and
Secondary Prophylaxis

4.4.5 Surgery for Esophageal Varices and portal hypertension: Devascularization
and Splenectomy, Different shunt procedures- indications, techniques and
outcome

4.4.6 Transjugular Intrahepatic Portosystemic Shunting (TIPS): Indications,
Technique and complications

5. Liver, Pancreas and Biliary System:

5.1 Embryology, Applied Anatomy, Physiology and Pathology:

5.1.1 Embryologic Development of the Liver, Biliary Tract, and Pancreas

5.1.2 Surgical and Radiologic Anatomy of the Liver, Biliary Tract, and Pancreas

5.1.3 Liver Blood Flow: Physiology, Measurement and Clinical Relevance

5.1.4 Bile Secretion and Pathophysiology of Biliary Tract Obstruction

5.1.5 Assessment of Hepatic Function: Implications for the Surgical Patient

5.1.6 Pancreatic Physiology and Functional Assessment

5.1.7 Pancreatic Cancer and Premalignant Tumors

5.1.8 Biliary Tract Cancer

5.1.9 Infections in Liver, Biliary, and Pancreatic Surgery

5.2 Diagnostic Techniques:

5.2.1 Clinical Investigation of Hepatopancreaticobiliary Disease

5.2.2 Ultrasound of the Liver, Biliary Tract, and Pancreas

5.2.3 Nuclear Medicine Techniques in Hepatobiliary and Pancreatic Disease

5.2.4 Computed Tomography of the Liver, Biliary Tract and Pancreas

5.2.5 Magnetic Resonance Imaging of the Liver, Biliary Tract and Pancreas

5.2.6 Direct Cholangiography: Approaches, Techniques and Current status

5.2.7 Percutaneous Biopsy

5.3 Techniques of Biliary Tract Intervention- Radiologic, Endoscopic & Surgical:

5.3.1 Interventional Endoscopy: Technical Aspects

5.3.2 Radiologic Hepatobiliary Interventions

5.3.3 Bile Duct Exploration and Biliary-Enteric Anastomosis

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5.4 Gall bladder and Biliary Tract Diseases:

- 5.4.1 Inflammatory, Infective and Congenital:
 - 5.4.1.1 Cholelithiasis and Choledocholithiasis
 - 5.4.1.2 Biliary Stricture and Fistula
 - 5.4.1.2.1 Biliary Atresia
 - 5.4.1.2.2 Primary Sclerosing Cholangitis
 - 5.4.1.2.3 Benign Biliary Strictures and biliary fistula
 - 5.4.1.3 Biliary Infection and Infestation
 - 5.4.1.3.1 Cholangitis
 - 5.4.1.3.2 Recurrent Pyogenic Cholangitis
 - 5.4.1.3.3 Biliary Parasitic Disease
 - 5.4.1.4 Cystic Disease of the Biliary Tree - Bile Duct (choledochal) Cysts in Adults and children
- 5.4.2 Neoplastic:
 - 5.4.2.1 Benign Tumors and Pseudotumors of the Biliary Tract
 - 5.4.2.2 Malignant Tumors
 - 5.4.2.2.1 Cancer of the Gallbladder and Bile Ducts
 - 5.4.2.2.2 Interventional Techniques in Hilar and intrahepatic Biliary Structures
 - 5.4.2.2.3 Adjuvant and Neoadjuvant Therapy

5.5 Pancreatic Disease:

- 5.5.1 Inflammatory, Infective and Congenital:
 - 5.5.1.1 Congenital Disorders of the Pancreas: Surgical Consideration
 - 5.5.1.2 Pancreatitis
 - 5.5.1.2.1 Acute & Chronic Pancreatitis: Etiology, Pathophysiology and Clinical Aspect
 - 5.5.1.2.2 Management of Acute Pancreatitis and Complications
 - 5.5.1.2.3 Management of Chronic Pancreatitis: Conservative, Endoscopic and Surgical
- 5.5.2 Neoplasm:
 - 5.5.2.1 Benign and Premalignant Tumors: Cystic Neoplasms of the Pancreas
 - 5.5.2.2 Pancreatic and Periapillary Cancer: Epidemiology, Clinical Aspects, Assessment and Management; Borderline resectable tumours
 - 5.5.2.3 Duodenal Adenocarcinomas
 - 5.5.2.4 Endocrine Tumors of the Pancreas: Clinical Picture, Diagnosis and Therapy
- 5.5.3 Operative procedures and their complications:
 - 5.5.3.1 Resectional Techniques: Pancreaticoduodenectomy, Distal Pancreatectomy, Segmental Pancreatectomy, Total Pancreatectomy
 - 5.5.3.2 Surgery of the Pancreas: Minimally Invasive Approaches
 - 5.5.3.2 Chemotherapy and Radiotherapy for Pancreatic and Periapillary Cancer: Adjuvant, Neoadjuvant and Palliative
 - 5.5.3.3 Palliation of Pancreatic and Periapillary Tumors

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5.6 Hepatic Disease

5.6.1 Inflammatory, Infective and Congenital:

5.6.1.1 Liver Infection and Infestation: Pyogenic Liver Abscess, Amebiasis and Other Parasitic Infections, Hydatid Disease of the Liver

5.6.1.2 Simple Cysts and Polycystic Liver Disease

5.6.1.3 Hepatitis, Hepatic Cirrhosis, Portal Hypertension and Hepatic Failure

5.6.2 Neoplastic:

5.6.2.1 Tumors of the Liver: Diagnostic & Pathologic Aspects

5.6.2.2 Benign and Premalignant

5.6.2.2.1 Benign Liver Lesions

5.6.2.2.2 Cystic Hepatobiliary Neoplasia

5.6.2.3 Malignant Tumors

5.6.2.3.1 Hepatocellular Carcinoma

5.6.2.3.2 Metastatic Malignant Liver Tumors: Colorectal Cancer & Neuroendocrine

5.6.2.3.3 Hepatic Tumors in Childhood

5.6.2.4 Treatment: Nonresectable

5.6.2.4.1 Hepatic Artery Embolization and Chemoembolization for Liver Tumors

5.6.2.4.2 Percutaneous Methods for Ablating Liver Tumors

5.6.2.4.3 Radiofrequency Ablation for Liver Tumors

5.6.2.4.4 Microwave Ablation and Emerging Technologies for Liver Tumors

5.6.2.4.5 Regional Chemotherapy for Liver Tumors

5.6.2.4.6 Systemic Chemotherapy for Hepatic Colorectal Cancer

5.6.2.4.7 Systemic Therapy for Hepatocellular Carcinoma

5.7 Hepatobiliary Injury and Hemorrhage:

5.7.1 Injuries to the Liver and Biliary Tract

5.7.2 Pancreatic and Duodenal Injuries

5.7.3 Aneurysm and Arteriovenous Fistula of the Liver and Pancreatic Vasculature

5.7.4 Hemobilia and Bilhemia

6. Colon, Rectum, and Anus:

6.1 Anatomy, Physiology and Diagnosis of Colorectal and Anal Disease:

6.1.1 Applied Anatomy and Embryology of the Colon, Rectum and Anus

6.1.2 Physiology of the Colon and Its Measurement

6.1.3 Diagnostic procedures of Colon, Rectal, and Anal Disease

6.2 Benign Colon, Rectal and Anal Conditions:

6.2.1 Pelvic Floor Dysfunction, Rectal Prolapse

6.2.2 Rectovaginal and Rectourethral Fistulas, Pilonidal Disease

6.2.3 Traumatic Colorectal Injuries, Foreign Bodies

6.2.4 Colonic Intussusception and Volvulus, Bleeding and Ischemia

6.2.5 Diverticular Disease, Hemorrhoids, Fissure / Fistula -in-Ano

6.2.6 Miscellaneous Disorders of the Rectum and Anus

6.2.7 Inflammatory Bowel Diseases-surgery for ulcerative colitis & Crohns disease

6.2.8 Anorectal Anomalies

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6.3 Neoplastic Diseases:

- 6.3.1 Colorectal Polyps and Polyposis Syndromes
- 6.3.2 Adenocarcinoma of the Colon and Rectum
- 6.3.3 Operations for Colorectal Cancer & Recurrent and Metastatic Colorectal Cancer
- 6.3.4 Resection and Ablation of Metastatic Colorectal Cancer to the Liver
- 6.3.5 Neoplasms of the Anus
- 6.3.6 Adjuvant and Neoadjuvant Therapy for Colorectal Cancer
- 6.3.7 Radiation Injuries to the Rectum

7. Peritoneum and Retroperitoneum:

- 7.1 Chronic peritonitis
- 7.2 Malignant ascites
- 7.3 Diseases of retroperitoneum

8. G.I. Radiology

- 8.1 Reading and interpreting the common x-ray film's including
 - 8.1.1 X-ray films of the abdomen
 - 8.1.2 Barium studies, ultrasound of abdomen, EUS
 - 8.1.3 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

9. G.I. Pathology

- 9.1 Reading and interpreting histological slides of common gastrointestinal and liver diseases

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

11. Orientation of EUS, ERCP Capsule Endoscopy, Chromoendoscopy, Esophageal Manometry, Enteroscopy and pH study

12. WHO-TNM and other cancer staging systems

13. General Surgical Principles

- 13.1 Shock
- 13.2 Surgical infection
- 13.3 Fluid and electrolyte imbalance
- 13.4 Preoperative and post operative patient care
- 13.5 TNM classification of cancers

The questions distribution for this paper/subject shall be as follows:

Section	Marks	Multiple Choice Questions
		No. of Questions × Mark
A	10	10 Questions × 1Mark =10 Marks
B	90	90 Questions × 1Mark =90 Marks