

**शहीद धर्मभक्त राष्ट्रिय प्रत्यारोपण केन्द्र**  
नेपाल स्वास्थ्य सेवा, एनेस्थेसियोलोजि समूह, 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 :-

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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/noise pollution, domestic 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 int'l rules and regulations on organ donation and transplantation
3. General knowledge about Shahid Dharmabhakta National Transplant Center

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

- 1. Anesthetic Physiology**
  - 1.1 Autonomic Nervous system
  - 1.2 Cardiac physiology
  - 1.3 Cerebral physiology and the effects of anesthetic drugs
  - 1.4 Gastrointestinal physiology and pathophysiology
  - 1.5 Hepatic physiology and pathophysiology
  - 1.6 Neuromuscular physiology and pharmacology
  - 1.7 Renal physiology, pathophysiology and pharmacology
  - 1.8 Respiratory physiology and pathophysiology
- 2. Anesthetic Pharmacology**
  - 2.1 Basic Principles of Pharmacology
  - 2.2 Inhaled Anesthetics: Mechanism of Action, Pharmacokinetics - uptake, distribution, metabolism and toxicity
  - 2.3 Inhaled Anesthetics: Pulmonary Pharmacology, Cardiovascular Pharmacology
  - 2.4 Inhaled Anesthetics: Delivery system- Anesthesia machines, circuits and Physics
  - 2.5 Intravenous Anesthetics
  - 2.6 Opioids Analgesia and Nonopioid Pain Medication
  - 2.7 Pharmacology of Neuromuscular Blocking Drugs and Antagonism of Neuromuscular Blockade
  - 2.8 Local Anesthetics
- 3. Anesthesia Management**
  - 3.1 Airway management
  - 3.2 Preoperative Evaluation
  - 3.3 Cardiovascular monitoring and management: Perioperative Echocardiography, Electrocardiography, Perioperative Ischemia and Myocardial Infarction, Implantable Cardiac Pulse Generators- Pacemakers and Cardioverter – Defibrillators
  - 3.4 Respiratory monitoring and management
  - 3.5 Renal monitoring and management
  - 3.6 Hepatic monitoring and management
  - 3.7 Neurology monitoring: Monitoring Brain State During General Anesthesia and Sedation
  - 3.8 Patients positioning and associated risk
  - 3.9 Risk of Anesthesia
  - 3.10 Perioperative Acid Base Balance
  - 3.11 Perioperative Fluid and Electrolyte therapy
  - 3.12 Blood management: Coagulation and Transfusion therapy
  - 3.13 Depth of anesthesia monitoring: Bispectral index (BIS), EEG, Neuromuscular blockade monitor
  - 3.14 Supra glottis airway devices
  - 3.15 Airway algorithm

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**Section (B): 40 %**

**4. Subspecialty Management**

- 4.1 Anesthesia for Cardiac Surgical procedures -Thoracic and Vascular surgery
- 4.2 Anesthesia and ICU management for Cardiac Arrhythmias cardiovascular emergency
- 4.3 Anesthesia for Renal and Genitourinary System
- 4.4 Anesthesia for Renal Transplant and ICU management
- 4.5 Anesthesia for Hepatobiliary system, Transplant and ICU management
- 4.6 Anesthesia for Organ Procurement (Renal /Liver/Cardiac/Pancreas and other): Management of organ donors before procurement (pulmonary/ cardiovascular/ temperature/hormones/steroids/electrolytes)
- 4.7 Donor management goals, management of donors after brain stem death
- 4.8 Anesthesia and pre hospital emergency: BLS and ACLF (Recent Guideline)
- 4.9 ICU management- Sepsis and multisystem organ failure (Recent guideline), Post transplant Infection, Acute Graft Rejection/Shock- cardiogenic/ hypovolumic/ septic/Anaphylactic
- 4.10 ICU management-ARDS, TRALI, Transfusion complication, Pneumothorax/ Pneumohydrothorax, Acute liver Failure, Acute Renal failure, VAP, Catheter related Bloodstream infection.
- 4.11 Remote Anesthesia: Endoscopy, Angiogram, Radio ablation, CT.
- 4.12 Use of Ultrasonography for: Echocardiography and Regional anesthesia

**5. WHO surgical checklists**

**Section (C): 20 %**

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

- 6.1 Basic concept of organ donation and transplantation
- 6.2 Assessment and investigations of the donor and recipient undergoing organ transplantation
- 6.3 Acute Tubular Injury and acute rejection of the transplanted kidney
- 6.4 Concept of immunology and commonly used drugs used in organ transplantation with their side effects
- 6.5 Complications and their management in an organ transplant recipient