

नेपाल सरकार  
गृह मन्त्रालय  
नेपाल प्रहरी प्रधान कार्यालय  
(मानवश्रोत विकास विभाग, भर्ना छनौट शाखा)  
नक्साल, काठमाण्डौ ।

**प्राविधिक प्रहरी नायव उपरीक्षक (Cardiologist) पदको खुला प्रतियोगितात्मक परीक्षाको पाठ्यक्रम**

सेवा: नेपाल प्रहरी

उपसमूह: स्वास्थ्य, चिकित्सक

समूह: प्राविधिक प्रहरी

श्रेणी: राजपत्राङ्कित द्वितीय

**परीक्षा योजना (Examination Scheme)**

क्र.सं.	परीक्षा चरण	विवरण	पूर्णाङ्क
१.	प्रथम चरण	प्रारम्भिक तथा विस्तृत स्वास्थ्य परीक्षण	-
२.	द्वितीय चरण	लिखित परीक्षा	२००
३.	तृतीय चरण	विशेष स्वास्थ्य परीक्षण	-
४.	चतुर्थ चरण	अन्तरवार्ता	३०

**प्रथम चरण:-** प्रारम्भिक तथा विस्तृत स्वास्थ्य परीक्षण

- प्रहरी सेवाको पदमा नियुक्ति र बढुवा गर्दा अपनाउनु पर्ने सामान्य सिद्धान्त, २०६९ को अनुसूची-६ र ८ बमोजिम हुने ।

**द्वितीय चरण:-** लिखित परीक्षा योजना (Written Examination Scheme)

Paper	Subject	Part	Marks	Full Marks	Pass Marks	No. and Weight of Question	Time
I	Professional and Service Specific Test (PSST)-I	General Subject-I	25	100	40	5X5= 25 (Short Answer)	3 hrs
		Hospital Administration and Management-II	30			1X10=10 (Critical Analysis) 4X5=20 (Short Answer)	
		General Health Issues-III	35			2X10=20 (Critical Analysis) 3X5=15 (Short Answer)	
		नेपाल प्रहरी सेवा सम्बन्धी-IV	10			2X5= 10 (Short Answer)	
II	Professional and Service Specific Test (PSST)-II	Technical Subject	100	100	40	6X10=60 (Critical Analysis) 2X20=40 (Problem Solving)	3 hrs

**तृतीय चरण:- विशेष स्वास्थ्य परीक्षण**

- प्रहरी सेवाको पदमा नियुक्ति र बढुवा गर्दा अपनाउनु पर्ने सामान्य सिद्धान्त, २०६९ को अनुसूची-९ बमोजिम हुने ।

**चतुर्थ चरण:- अन्तरवार्ता(Interview)**

विषय	पूर्णाङ्क	परीक्षा प्रणाली
अन्तरवार्ता	३०	मौखिक

१. यो पाठ्यक्रमको योजना अनुसार दुई पत्रको लिखित परीक्षा हुनेछ ।
२. लिखित परीक्षाको माध्यम भाषा नेपाली वा अंग्रेजी अथवा नेपाली र अंग्रेजी दुवै हुन सक्नेछ ।
३. प्रथम र द्वितीय पत्रको लिखित परीक्षा छुट्टाछुट्टै हुनेछ ।
४. प्रथम र द्वितीय पत्रको विषयगत प्रश्नका लागि तोकिएका १० अङ्क र २० अङ्कका प्रश्नहरूको हकमा १० अङ्क र २० अङ्कका एउटा लामो प्रश्न वा एउटै प्रश्नका दुई वा दुई भन्दा बढी भाग (Two or more parts of a single question) वा एउटा प्रश्न अन्तर्गत दुई वा बढी टिप्पणीहरू (Short notes) सोध्न सकिने छ ।
५. प्रथम पत्रको पाठ्यक्रमलाई ४ वटा खण्ड/एकाईमा विभाजन गरिएको छ । ४ वटा खण्ड/एकाईको लागि ४ वटै उत्तरपुस्तिका दिइनेछ र परीक्षार्थीले प्रत्येक खण्ड/एकाईका प्रश्नहरूको उत्तर सोही खण्ड/एकाईको उत्तरपुस्तिकामा लेख्नु पर्नेछ ।
६. यस पाठ्यक्रममा जेसुकै लेखिएको भएता पनि पाठ्यक्रममा परेका ऐन, नियमहरू परीक्षाको मिति भन्दा ३ (तीन) महिना अगाडि (संशोधन भएका वा संशोधन भई हटाइएका वा थप गरी संशोधन भई) कायम रहेकालाई यस पाठ्यक्रममा रहेको सम्झनु पर्दछ ।
७. यस भन्दा अगाडि लागू भएका माथि उल्लेखित समूहको पाठ्यक्रम खारेज गरिएको छ ।

**पाठ्यक्रम लागू मिति:- २०७९/१०/१९ गते ।**

**प्रथम पत्र (Paper I)**  
**General Subject, Hospital Administration and Management, General Health**  
**Issues र प्रहरी सेवा सम्बन्धी**

**Part-I**  
**General Subject**

5X5= 25 Marks (Short Answer)

1. Applied and Developmental Anatomy of Chest, Heart and Major Blood Vessels
2. Principles of Clinical Pharmacology specially in cardiovascular diseases
3. Principles of Biochemistry, particularly that of Carbohydrate and Lipid Metabolism and Nutrition
4. Principles of Immunology, Genetics and Molecular Biology as relevant to Clinical Medicine
5. Principles of Medical Ethics and Medical Informatics
6. Evidence Based Medicine / Critical Appraisal of Scientific Literature
7. Principles of Research Methodology and Scientific Writing
8. Methodology, design, variables, sampling, data collection, data entry, descriptive statistics, research reports, random number.
9. Cardiovascular system and disease as required for General Physicians

**Part-II**  
**Hospital Administration and Management: 30 MARKS**

1X10=10 (Critical Analysis)  
4X5=20(Short Answer)

- 1. Introduction to Management**
  - 1.1. Management Process
  - 1.2. Managerial Roles & Skills
  - 1.3. Nature of Managerial work
- 2. Environmental Context**
  - 2.1. The external environment
  - 2.2. The internal environment
  - 2.3. Organizational Culture
  - 2.4. Organization environmental Relationship
  - 2.5. Environmental – organizations effectiveness
- 3. Managing Interpersonal & Communication**
  - 3.1. Interpersonal nature of Organization
  - 3.2. Forms of Communication
  - 3.3. Managing Organizational Communication
- 4. Concept of Hospital Planning**
  - 4.1. Information and concept of Hospital planning
  - 4.2. Guiding Principles in Planning Hospital facilities & services
  - 4.3. Concept of Hospital unitization and its influencing factor
  - 4.4. Master plan

## **5. Background of Hospital**

- 5.1. Distinguishing Characteristics of Hospital
- 5.2. Complexities of Hospital
- 5.3. Organogram of the Hospital
- 5.4. Governing Board and its functions

## **6. Quality / Customer Service and Measuring Quality**

- 6.1. Define Customer and Identify Customers
- 6.2. Domains of Quality
- 6.3. Customer Experience: Core Service & Delivery of Service
- 6.4. Excellent Customer Service; Caring Service
- 6.5. Individual Behavior: Stress, Communication, and Interpersonal Relationship

## **7. Patient Satisfaction and Quality Audit**

- 7.1. Setting Objectives and Agreeing upon Standards
- 7.2. Assessment of Patient Satisfaction
- 7.3. Feedback: Customers, Staff, Suppliers etc.
- 7.4. Quality Audit and Review Techniques

## **8. Hospital Store, Planning & Distribution**

- 8.1. Definitions, Objectives, Importance
- 8.2. Material cycle
- 8.3. Integrative Material Management
- 8.4. Factors Affecting & types for distribution

### **Part-III**

### **General Health Issues: 35 marks**

2X10=20 (Critical Analysis)

3X5=15 (Short Answer)

- 1. National Health Policy, 2076
- 2. Guideline for Health Institutions Established Upgrade version
- 3. Health and Human Right including Professional's Right, Client Right and Informed Consent
- 4. Gender Issues and Health
- 5. International Health Agencies: Role and Responsibilities of WHO, UNICEF, UNFPA and Interagency Relationships
- 6. Nepal Medical Council and Related Regulations
- 7. Medical Ethics
- 8. Health Management Information System (HMIS)
- 9. Health Insurance and Financing in Health Care
- 10. Continue medical Education (CME)

## Part-IV

### सामान्य ज्ञान तथा नेपाल प्रहरी सेवा सम्बन्धी:10 Marks

2X5= 10 (Short Answer)

- क. नेपालको भूगोल सम्बन्धी सामान्य जानकारी (भौगोलिक अवस्था, स्वरूप, किसिम र विशेषताहरू, हावापानी किसिम र विशेषता, जल सम्पदा: स्थिति र महत्व, वन सम्पदा: अवस्था र महत्व, संरक्षण क्षेत्रहरू तथा वन विनाशका कारण र संरक्षणका उपायहरू, नेपालका प्रमुख हिमशिखरहरू, तालतलैया, झरना, भञ्ज्याङ ।
- ख. इतिहास र संस्कृति सम्बन्धी सामान्य जानकारी (आधुनिक नेपालको इतिहास (पृथ्वीनारायण शाह देखी हालसम्म), नेपालको सांस्कृतिक, धार्मिक एवं मौलिक परम्परा, जातजाति, भाषाभाषी, कला र साहित्य सम्बन्धी सामान्य जानकारी ।
- ग. नेपालको वर्तमान संविधान २०७२ (भाग १, ३, ४, ५, २८ र अनुसूचीहरू)
- घ. जनसंख्या र वातावरण सम्बन्धी सामान्य जानकारी (जनसंख्या, शहरीकरण, बसोवास (बँसाईसराई), जैविक विविधता, जलवायु परिवर्तन, वातावरण तथा प्रदुषण)
- ङ. समसामयिक घटना तथा नविनतम् विषयवस्तुहरू: (राष्ट्रिय तथा अन्तर्राष्ट्रिय महत्वका राजनैतिक, सामाजिक, आर्थिक, वैज्ञानिक, सांस्कृतिक, खेलकूद, पुरस्कार, कला साहित्य, संगीत सम्बन्धी)
- च. नेपाल प्रहरीको पृष्ठभूमि (वि.स. २००७ साल देखि हालसम्म) र वर्तमान अवस्था ।
- छ. प्रहरी ऐन, २०१२ र प्रहरी नियमावली, २०७१ (संशोधन सहित) का मुख्य-मुख्य व्यवस्थाहरू (संगठनात्मक स्वरूप, सेवाको प्रकार, दर्ज्यानी चिन्ह, पद तथा श्रेणी सेवा, शर्त र सुविधा, प्रहरी आचरण, नियुक्ति र अवकाश, प्रहरी कर्मचारीको काम-कर्तव्य अधिकार, नेपाल प्रहरीमा प्राविधिक प्रहरी कर्मचारीको महत्व र आवश्यकता, नेपाल प्रहरी कार्यालयको स्थापना र कार्यालय प्रमुख सम्बन्धी व्यवस्था)
- ज. विविध:- सुरक्षा समिति (केन्द्र, प्रदेश र जिल्ला), नेपाल प्रहरी र अन्य सुरक्षा निकायहरू (नेपाली सेना, सशस्त्र प्रहरी बलनेपाल र राष्ट्रिय अनुसन्धान विभाग) संगको सम्बन्ध, अपराध परिचय, महत्व र प्रविधिको प्रयोग, विपद व्यवस्थापनमा नेपाल प्रहरी, सार्क, संयुक्त राष्ट्रसंघ, इन्टरपोल सम्बन्धी जानकारी ।

## द्वितीय पत्र (Paper-II): Technical Subject

**Full Marks: 100**

(Critical Analysis) 6X10=60

(Problem Solving) 2X20=40

### **1. Clinical:**

(Definition, Pathophysiology, Epidemiology, Features of History, Examination findings, Differential Diagnosis, Investigations indicated, detailed initial management and principles of ongoing management (counseling, lifestyle, medical, surgical, care setting and follow up)

- 1.1. Coronary artery Diseases
- 1.2. Rheumatic Fever and Rheumatic Heart Diseases
- 1.3. Congenital Heart diseases
- 1.4. Vascular Disorders
- 1.5. Pulmonary Thrombo-embolism and Pulmonary Hypertension
- 1.6. Systemic Hypertension
- 1.7. Systemic Diseases involving Heart and its Vessels
- 1.8. Heart Muscle Diseases
- 1.9. Tumors of Heart
- 1.10. Genetics, molecular biology and immunology related to Cardiology
- 1.11. Geriatric heart diseases
- 1.12. General Anesthesia and non-cardiac surgery in heart patients
- 1.13. Pregnancy and heart diseases
- 1.14. Epidemiology, preventive and rehabilitative cardiology
- 1.15. Pericardial Diseases
- 1.16. Cardiac Arrhythmias
- 1.17. Approach to common cardiac symptoms like Chest pain, Shortness of Breath, and Syncope.

### **2. Core Procedures and Investigations:**

- 2.1. Basic Investigations: (Investigations for the diagnosis and assessment of patients with cardiac disease - Level 3)
  - 2.1.1. Electrocardiograms
  - 2.1.2. Ambulatory ECG
  - 2.1.3. Exercise Testing
  - 2.1.4. CXR
  - 2.1.5. Ambulatory BP
- 2.2. Echocardiography (Core)
  - 2.2.1. Role of echocardiography in the management of patients with cardiac disease (Level 3)
  - 2.2.2. To be able to satisfactorily perform, interpret and report transthoracic echocardiography for the diagnosis & assessment of adult patients (Level 3)
  - 2.2.3. To recognise the indications for advanced echocardiography, e.g. transoesophageal and stress echocardiography (Level 1 and 2)
  - 2.2.4. Demonstrate knowledge of:
    - 2.2.4.1 Indications for echocardiography in emergency, in-patient and outpatient settings. Ethics and sensitivities of patient care.

- 2.2.4.2 Basic principles of ultrasound imaging, spectral and colour flow Doppler. Basic instrumentation and scanning. Standard methods of measurement and analysis.
- 2.2.4.3 The echocardiographic assessment of ventricular structure and function in normal and abnormal cases
- 2.2.4.4 The echocardiographic assessment of the cardiac valves in normal and abnormal cases, including prosthetic heart valves
- 2.2.4.5 Echocardiographic assessment of the thoracic aorta in normal (e.g. screening) and abnormal cases
- 2.2.4.6 Use of echocardiography to assess the right heart; measurement of pulmonary artery pressure
- 2.2.4.7 Role and echocardiographic assessment of patients with suspected or confirmed endocarditis, intracardiac mass, pericardial disease
- 2.2.4.8 Indications for and limitations of advanced echocardiography: tissue Doppler/strain analysis, contrast echo, 3D echocardiography, transoesophageal echocardiography, stress echocardiography, perioperative echocardiography
- 2.3. Nuclear cardiology (Core):
  - 2.3.1. To be able to define the indications for nuclear Cardiology investigations
  - 2.3.2. To understand the clinical significance and limitations of the results of nuclear Cardiology investigations having participated in stress, imaging, and reporting sessions
  - 2.3.3. Knowledge on: the indications for MPS and ERNV, the importance of radiation protection IRMER, the methods of stress used in MPS Exam, the radiopharmaceuticals and protocols used in MPS and ERNV Exam, the equipment and techniques used in nuclear Cardiology imaging IRMER, the clinical value of MPS and ERNV in different clinical settings
- 2.4. CMR Resonance (core)
  - 2.4.1. To have a basic understanding of the role of CMR and its capabilities, including its indications
  - 2.4.2. To have a basic understanding of how the procedures are carried out, in particular the safety issues
  - 2.4.3. To have a basic understanding of image analysis, post-processing and interpretation of images and data with emphasis on patient management
  - 2.4.4. Knowledge on: the indications and contra-indications to CMR Exam, the basics of CMR safety, the basics of CMR image acquisition and image processing, the basics of CMR imaging protocols (anatomical imaging and functional imaging) The limitations of CMR
- 2.5. Cardiac CT (core)
  - 2.5.1. Cardiac Computed Tomography Techniques including contrast administration
  - 2.5.2. Modalities: Ultra-fast CT and Coronary angiogram (including grafts and stents)
  - 2.5.3. Indications for: Calcium score Exam and CT coronary angiography
- 2.6. Heart Rhythm Training (core):
  - 2.6.1. Common cardiac arrhythmia particularly in emergency setting like supra ventricular tachycardia, atrial fibrillation, ventricular tachycardia and do temporary pacing

- 2.6.2. Basic concepts, and theoretical knowledge of different rhythm management procedures like permanent pacing, AICD, CRT etc.
- 2.7. Invasive and Interventional Cardiology (core)
  - 2.7.1. Basic understanding, indications, contraindications, and technical aspects of various invasive diagnostic procedures like, coronary angiography, right heart catheterization, left heart catheterization, hemodynamic study, Pericardiocentesis, electrophysiological study and others.
  - 2.7.2. Basic understanding, indications, contraindications, and technical aspects of temporary and permanent pacemaker implantation.
  - 2.7.3. Basic understanding, indications, contraindications and technical aspects of coronary angioplasty, mitral balloon valvoplasty and other non-coronary percutaneous interventions.
  - 2.7.4. Pericardiocentesis: Candidates must be capable of performing pericardiocentesis

### **3. General Internal Medicine:**

- 3.1 Specialist level competence in the diagnostic evaluation and management of life threatening acute medical conditions including Advanced Cardiac Life Support (ACLS)
- 3.2 Specialist level competence in general internal medicine including the evaluation, diagnosis and management of major clinical conditions related to pulmonary, renal, gastrointestinal, musculoskeletal, endocrine, hematologic, nervous system and infectious diseases
- 3.3 Principle of Geriatric Medicine and Palliative Care

-समाप्त-