

निजामती कर्मचारी अस्पताल
प्राविधिक सेवा, रेडियोलोजी समूह, रेडियो डाइग्नोसिस एण्ड इमेजीङ उपसमूह, कन्सल्ट्यान्ट पद, दशौं तहको खुला
प्रतियोगितात्मक परीक्षाको पाठ्यक्रम

यस पाठ्यक्रम योजनालाई दुई चरणमा विभाजन गरिएको छ :

प्रथम चरण :- लिखित परीक्षा (Written Examination)

पूर्णाङ्क :- २००

द्वितीय चरण :- अन्तर्वार्ता (Interview)

पूर्णाङ्क :- ३०

१. प्रथम चरण (First Phase): परीक्षा योजना (Examination Scheme)

Paper	Subject		Marks	Full Marks	Pass Marks	No. Questions & Weightage	Time
I	General Subject	Part I: Management	50	100	40	6 × 5 = 30 (Short answer) 2 × 10 = 20 (Long answer)	3.00 hrs
		Part II: General Health Issues	50			6 × 5 = 30 (Short answer) 2 × 10 = 20 (Long answer)	
II	Technical Subject			100	40	4 × 15 = 60 (Critical Analysis) 2 × 20 = 40 (Problem Solving)	3.00 hrs

२. द्वितीय चरण (Second Phase)

Subject	Full Marks	Examination System
Interview	30	Oral

द्रष्टव्य :

- लिखित परीक्षाको माध्यम भाषा नेपाली वा अंग्रेजी अथवा नेपाली र अंग्रेजी दुवै हुन सक्नेछ ।
- अस्पतालको प्राविधिक सेवा अन्तर्गतका सबै समूह/सबै उपसमूहहरूको लागि प्रथमपत्रको पाठ्यक्रमको विषयवस्तु एउटै हुनेछ । तर द्वितीयपत्र Technical Subject को पाठ्यक्रम समूह/उपसमूह अनुरूप फरक फरक हुनेछ ।
- प्रथम र द्वितीय पत्रको लिखित परीक्षा छुट्टाछुट्टै हुनेछ । परीक्षामा सोधिने **प्रश्नसंख्या र अङ्कभार** यथासम्भव सम्बन्धित पत्र, विषयमा दिईए अनुसार हुनेछ ।
- वस्तुगत बहुवैकल्पिक (Multiple Choice) प्रश्नहरूको 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 ।
- वस्तुगत बहुवैकल्पिक हुने परीक्षामा परीक्षार्थीले उत्तर लेख्दा अंग्रेजी ठूलो अक्षर (Capital letter) A, B, C, D मा लेख्नुपर्नेछ । सानो अक्षर (Small letter) a, b, c, d लेखेको वा अन्य कुनै सङ्केत गरेको भए सबै उत्तरपुस्तिका रद्द हुनेछ ।
- बहुवैकल्पिक प्रश्नहरू हुने परीक्षामा कुनै प्रकारको क्याल्कुलेटर (Calculator) प्रयोग गर्न पाइने छैन ।
- विषयगत प्रश्नहरूको हकमा 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 ।
- विषयगत प्रश्नमा प्रत्येक पत्र/विषयका प्रत्येक खण्डका लागि छुट्टाछुट्टै उत्तरपुस्तिकाहरू हुनेछन् । परीक्षार्थीले प्रत्येक खण्डका प्रश्नहरूको उत्तर सोही खण्डका उत्तरपुस्तिकामा लेख्नुपर्नेछ ।
- यस पाठ्यक्रम योजना अन्तर्गतका पत्र/विषयका विषयवस्तुमा जेसुकै लेखिएको भएतापनि पाठ्यक्रममा परेका कानून, ऐन, नियम, विनियम तथा नीतिहरू परीक्षाको मितिभन्दा ३ महिना अगाडि (संशोधन भएका वा संशोधन भई हटाईएका वा थप गरी संशोधन भई) कायम रहेकालाई यस पाठ्यक्रममा परेको सम्झनु पर्दछ ।
- प्रथम चरणको परीक्षाबाट छनौट भएका उम्मेदवारहरूलाई मात्र द्वितीय चरणको परीक्षामा सम्मिलित गराइनेछ ।
- पाठ्यक्रम लागू मिति : आ.व.२०७९/०८० देखि

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Paper I: General Subject
Part I: Management
(6 × 5) + (2 × 10) = 50 Marks

1. Management

- 1.1. Health care management system in Nepal and other parts of the world
- 1.2. Fundamental principles of healthcare institution and hospital management.
- 1.3. Effective hospital management principles
- 1.4. Purpose of medical and non-medical data and records
- 1.5. Ethics and responsibility of management
- 1.6. Concept of management and its application in health care including hospital
 - 1.7.1 Management: Concept, principles, functions, scope and role, level and skills of manager
 - 1.7.2 Planning: Concept, principles, nature, types, instruments and steps
 - 1.7.3 Leadership: Concept, function, leadership styles, leadership and management
 - 1.7.4 Coordination: Concept, types, techniques of effective coordination
 - 1.7.5 Communication and counselling: Concept, communication processes and barrier to effective communication, techniques for improving communication
 - 1.7.6 Decision making: Importance, types, rational process of decision making, problem solving techniques, improving decision making
 - 1.7.7 Participative management: Concept, advantage and disadvantage, techniques of participation
 - 1.7.8 Time management: Concept, essential factors and strategies for effective time management
 - 1.7.9 Conflict management: Concept, approaches to conflict, levels of conflict, causes of conflict and strategies for conflict management
 - 1.7.10 Stress management: Concept, causes and sources of stress, techniques of stress management
 - 1.7.11 Change management: Concept, sources of organizational change, resistance to change, management of resistance to change
 - 1.7.12 Appreciative inquiry: Concept, basic principle and management
 - 1.7.13 Human resource management: Concept, functions and different aspects
 - 1.7.14 Health manpower recruitment and development
 - 1.7.15 Financial management: Concept, approaches, budget formulation and implementation, Auditing and topics related to fiscal administration

Part II: General Health Issues
(6 × 5) + (2 × 10) = 50 Marks

2. General Health Issues

- 2.1. Present constitution of federal republic of Nepal (including health and welfare issues)
- 2.2. Organizational structure of Ministry of Health at national/federal, regional/state, district (if applicable), municipal and village council level
- 2.3. Professional council and related regulations
- 2.4. National Health Policy
- 2.5. Health Service Act and Regulation
- 2.6. Second Long term health plan
- 2.7. Health Management Information System, forms, indicators, annual reports
- 2.8. Human Development Indices, Sustainable Development Goals
- 2.9. Health volunteers in the national health system, its rationale, use and effectiveness

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- 2.10. Local governance and community participation in health service delivery
- 2.11. Health Insurance and financing in health care
- 2.12. Alternative health care system: Ayurveda, homeopathy, Unani, Chinese etc.
- 2.13. Indigenous and traditional faith health and health practices
- 2.14. International Health Agencies: Roles and responsibilities of WHO, UNICEF, UNFPA, Inter-agency relationships, Government-agency coordination: Joint Annual Review meeting
- 2.15. Supervision, types and its usage in health sector
- 2.16. Monitoring and evaluation system in health sector
- 2.17. National Health Training Centre
- 2.18. National and International Disaster Plan, Coordination
- 2.19. General introduction of Civil Service Hospital and its Bylaws

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Paper II : Technical Subject
Section (A) – 50 Marks

1. **Physics in radiology**
 - 1.1 Production of x-rays
 - 1.2 Interaction of x-rays with metals
 - 1.3 X-ray tube
 - 1.4 Radiation protection
 - 1.5 Basic physics and advances in fluoroscopy/ imaging intensifier
 - 1.6 Basic physics and advances in CR/DR system
 - 1.7 Basic physics and advances in CT
 - 1.8 Basic physics and advances in MRI
 - 1.9 Basic physics and advances in USG
 - 1.10 Introduction to nuclear medicine
2. **Sectional and Imaging anatomy**
 - 2.1 Cross-sectional & imaging anatomy of brain
 - 2.2 Cross-sectional and imaging anatomy of chest
 - 2.3 Cross-sectional and imaging anatomy of Abdomen
 - 2.4 Anatomy of orbits and its bones
 - 2.5 Vascular anatomy of brain/head
 - 2.6 Vascular anatomy of abdominal aorta and its branches
 - 2.7 Vascular anatomy of upper and lower limbs
 - 2.8 Relevant Embryology
3. **Nervous system**
 - 3.1 Craniocerebral Trauma
 - 3.2 Imaging of non-traumatic SAH
 - 3.3 Imaging of non-traumatic ICH
 - 3.4 Imaging of stroke
 - 3.5 Cerebral ischemia
 - 3.6 Brain tumors and tumor like processes
 - 3.7 Extra-axial Tumors
 - 3.8 Imaging of sellar tumours
 - 3.9 Non-neoplastic and neoplastic spinal cord pathologies
4. **Head & Neck**
 - 4.1 Radiological imaging of diseases and conditions related to Ear, Nose, Throat
 - 4.2 Radiological imaging of diseases of thyroid, salivary gland and other soft tissue neck
5. **Paediatric imaging**
 - 5.1 Imaging of the kidneys and urinary tract in children
 - 5.2 Imaging of congenital CNS malformations
 - 5.3 Respiratory Distress
6. **Recent advances in radiology and imaging**
 - 6.1 Teleradiology, Radiology Information System & PACS
 - 6.2 Newer advances in CR/ DR system, Fluoroscopy and Mammogram
 - 6.3 Newer advances in CT and MRI

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Section (B) – 50 Marks

7. **CVS & Interventional**
 - 7.1 Radiological imaging of aortic and peripheral arterial diseases
 - 7.2 Radiologic approach to pulmonary thromboembolism
 - 7.3 Heart and pericardium
 - 7.4 Congenital and acquired heart disease
 - 7.5 Image guided radiological procedures and contrast media
8. **Musculoskeletal System**
 - 8.1 Skeletal trauma
 - 8.2 Radiological imaging of bone tumors
 - 8.3 Radiological imaging of large and small joints
 - 8.4 Haemopoietic bone disorder
 - 8.5 Osteomyelitis and septic arthritis
9. **Thoracic / respiratory system**
 - 9.1 Radiological imaging of Chest
 - 9.2 Chest trauma
10. **Gastrointestinal & hepatobiliary system**
 - 10.1 Imaging of non-neoplastic / neoplastic esophageal pathology
 - 10.2 Imaging of gastric pathology
 - 10.3 Liver neoplasms
 - 10.4 Inflammatory bowel disease
 - 10.5 Imaging and interventions in GI bleed
 - 10.6 Imaging of pancreatic neoplasm
11. **Genito-urinary system**
 - 11.1 Renovascular disease
 - 11.2 Genitourinary trauma
 - 11.3 Genito-urinary tumor
 - 11.4 Urinary bladder & Prostate imaging
12. **Breast and diagnostic ultrasound**
 - 12.1 Breast imaging
 - 12.2 Role of USG in IUGR
 - 12.3 Diagnostic ultrasound