

**निजामती कर्मचारी अस्पताल**  
**प्राविधिक सेवा, सर्जरी समूह, अर्थोप्लास्टी एण्ड अर्थोस्कोपि उपसमूह, सिनीयर रजिष्ट्रार (स्पेसलिष्ट) पद, नवौं तहको खुला**  
**तथा आन्तरिक 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 :

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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. Hip Joint**

- 1.1. Anatomy and biomechanics of hip joint.
- 1.2. Clinical examination of hip joint.
- 1.3. Natural History, clinical presentation, classification and treatment of adult hip dysplasia.
- 1.4. Management of femoro-acetabular Impingement.
- 1.5. Occurrence, etiology, clinical presentation, imaging, staging and treatment of osteonecrosis of Femoral head.
- 1.6. Transient osteoporosis of the Hip.
- 1.7. Management of hip arthritis.
- 1.8. Biomechanics, indications, contraindications, pre-operative Planning, templating, techniques, surgical Approaches, soft tissue handling, rehabilitation and outcomes of total hip arthroplasty.
- 1.9. Total hip arthroplasty implants: composition, choices, biomechanics, merits and demerits.
- 1.10. Bone cement.
- 1.11. Polyethylene wear, composition, manufacturing and osteolysis in THA.
- 1.12. Peri-prosthetic fractures in THA.
- 1.13. Biomechanics, techniques, advantages, contraindications and complications of Hip resurfacing arthroplasty
- 1.14. Complications after THA; Pre-operative, Intraoperative and post-operative complications: dislocation, neurovascular injury, infections and osteolysis, thromboembolism, limb length discrepancy, peri-prosthetic fractures, heterotopic ossifications and impingements.
- 1.15. THA in special cases: DDH, sickle cell anemia, protusio acetabuli, paget's disease, acute femoral neck fracture, failed hip surgeries, acetabular fractures, arthrodesis of hip joint, chronic renal failure, hemophilia, tuberculosis, pyogenic arthritis and neuromuscular disorders.
- 1.16. Principles, techniques of Revision THA.
- 1.17. Current concepts in Total Hip Arthroplasty.

**2. Knee Joint**

- 2.1. Clinical presentation, imaging studies and treatment of knee osteoarthritis
- 2.2. Clinical examinations of knee joint
- 2.3. Surgical anatomy and biomechanics of knee joint
- 2.4. Modern prosthesis evolution and different designs: cruciate retaining, cruciate sacrificing, posterior stabilized, mobile bearing, uni-compartmental, Anterior stabilized, modular, constraint design and hinged.
- 2.5. Biomechanics, indications, contraindications, pre-operative planning, templating, surgical approaches, soft tissue balancing, rehabilitation, complications and outcomes of total knee arthroplasty.
- 2.6. Polyethylene issues in TKA.
- 2.7. Indications and contraindications for total knee arthroplasty, unicompartmental knee arthroplasty and patella-femoral arthroplasty.
- 2.8. Patellar resurfacing arthroplasty and simultaneous bilateral total knee arthroplasty.
- 2.9. Management of bone deficiency in TKA.
- 2.10. Patello-femoral tracking after TKA.

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- 2.11. Wound closure after TKA.
- 2.12. Pre-operative, Intra-operative and Postoperative management after TKA.
- 2.13. Surgical problems in specific disorders: previous high tibial osteotomy, previous patellectomy, neuropathic arthropathy and other medical conditions.
- 2.14. Complications after TKA: Thromboembolism, Infection, Patellofemoral complications, neurovascular complications and periprosthetic fractures
- 2.15. Revision total knee arthroplasty: Aseptic failure of primary total knee arthroplasty, surgical exposures, component removal, reconstruction principles, and results.
- 2.16. Current concepts in total knee arthroplasty

**3. Other Joints and miscellaneous**

- 3.1. Indications, requirements, component positioning, complications after shoulder hemiarthroplasty, total shoulder arthroplasty and reverse shoulder arthroplasty
- 3.2. General principles of arthroplasty of wrist joint, elbow joint, ankle joints and small joints of hands and feet.
- 3.3. Indications, contraindications, general principles, techniques and complications after arthrodesis of hip, knee, shoulder, elbow, wrist, ankle, small joints of hands and feet.
- 3.4. Soft tissue procedures and corrective osteotomies around knee joints.
- 3.5. Ligaments and soft tissue reconstruction for instabilities of different joints: shoulder, elbow wrist, hip, knee ankle and other small joints.
- 3.6. Bony and soft tissue reconstruction in special conditions: Cerebral palsy, poliomyelitis, brachial plexus injury, myelo-meningocele, other congenital and acquired disorders.

**Section (B) – 50 % Marks**

**4. General Principles of Arthroscopy**

- 4.1 Instruments and equipment
- 4.2 Anesthesia
- 4.3 Documentation
- 4.4 Advantages
- 4.5 Disadvantages
- 4.6 Indications and contraindications
- 4.7 Basic arthroscopic techniques
- 4.8 Surgical implants used in Arthroscopic therapy.
- 4.9 Complications

**5. Arthroscopy of the Lower Extremity**

- 5.1 Knee
  - 5.1.1 Basic diagnostic techniques
  - 5.1.2 Arthroscopic examination of the knee
  - 5.1.3 Arthroscopic surgery of the meniscus
  - 5.1.4 Anterior cruciate ligament
  - 5.1.5 Posterior cruciate ligament
  - 5.1.6 Posteromedial complex
  - 5.1.7 Posterolateral complex
  - 5.1.8 Arthroscopic surgery for other disorders
  - 5.1.9 Other applications of arthroscopy of the knee
  - 5.1.10 Complications

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- 5.2 Foot & Ankle
  - 5.2.1 Arthroscopic portal placement and examination of Ankle
  - 5.2.2 Soft-tissue procedures
  - 5.2.3 Bony procedures
  - 5.2.4 Complications
  - 5.2.5 Arthroscopy of the subtalar joint, arthroscopic subtalar arthrodesis
  
- 5.3 Hip
  - 5.3.1 Indications including Clinical assessment and patient selection
  - 5.3.2 General setup,
  - 5.3.3 Arthroscopy in supine and lateral position
  - 5.3.4 Management of labral and articular lesions/injuries, Femoral acetabular impingement
  - 5.3.5 Snapping hip syndrome and Peri trochanteric disorders
  - 5.3.6 Biopsy, Irrigation for infection, OCD & Chondral lesions, Lig Teres injury, IA loose bodies, foreign body. Assessment of Total Hip Replacement,
  - 5.3.7 Extraarticular conditions: Snapping Psoas, Piriformis syndrome & Sciatic Nerve decompression, Ischiofemoral impingement.
  - 5.3.8 Complications

**6. Arthroscopy of the Upper Extremity**

- 6.1 Shoulder
  - 6.1.1 Indications
  - 6.1.2 Patient positioning and anesthesia
  - 6.1.3 Lateral decubitus position
  - 6.1.4 Beach-chair position
  - 6.1.5 Control of bleeding during arthroscopy
  - 6.1.6 Fluid extravasation
  - 6.1.7 Portal placement
  - 6.1.8 Diagnostic arthroscopy and arthroscopic anatomy
  - 6.1.9 Specific arthroscopic surgical procedures
    - 6.1.9.1 Removal of loose bodies
    - 6.1.9.2 Synovectomy
    - 6.1.9.3 Drainage and debridement
    - 6.1.9.4 Repair of labral tears
    - 6.1.9.5 Repair of biceps tendon lesions
    - 6.1.9.6 Reconstruction for anterior instability
    - 6.1.9.7 Posterior shoulder stabilization
    - 6.1.9.8 Impingement syndrome
    - 6.1.9.9 Impingement and os acromiale
    - 6.1.9.10 Partial rotator cuff tears
    - 6.1.9.11 Delamination tears and localized partial-thickness, articular-side rotator cuff tears
    - 6.1.9.12 Complete rotator cuff tears
    - 6.1.9.13 Massive contracted rotator cuff tears
    - 6.1.9.14 Subscapularis tendon tears
    - 6.1.9.15 Acromioclavicular joint
    - 6.1.9.16 Calcific tendinitis of the rotator cuff
    - 6.1.9.17 Arthroscopic debridement for osteoarthritis

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- 6.1.9.18 Posterior ossification of the shoulder (Bennett lesion)
- 6.1.9.19 Spinoglenoid cyst
- 6.1.9.20 Arthroscopic capsular release
- 6.1.9.21 Complications
- 6.2 Elbow
  - 6.2.1 Indications
  - 6.2.2 Patient positioning and anesthesia
  - 6.2.3 Portal placement
  - 6.2.4 Arthroscopic examination of the elbow
  - 6.2.5 Specific arthroscopic surgical procedures
    - 6.2.5.1 Removal of loose bodies
    - 6.2.5.2 Panner's disease and osteochondritis dissecans
    - 6.2.5.3 Throwing injuries
    - 6.2.5.4 Evaluation of ulnar collateral ligament function
    - 6.2.5.5 Posterior elbow impingement
    - 6.2.5.6 Radial head resection
    - 6.2.5.7 Arthroscopic treatment for arthrofibrosis
    - 6.2.5.8 Arthroscopic debridement for osteoarthritis
    - 6.2.5.9 Synovectomy
    - 6.2.5.10 Tennis elbow release
    - 6.2.5.11 Olecranon bursitis
    - 6.2.5.12 Arthroscopic-assisted intraarticular fracture care
    - 6.2.5.13 Pyarthrosis
    - 6.2.5.14 Complications
- 6.3 Wrist
  - 6.3.1 Wrist arthroscopy anatomy, portals
  - 6.3.2 Triangular fibrocartilage complex tears
  - 6.3.3 Arthroscopic treatment of dorsal and volar ganglion, repetitive strain injury
  - 6.3.4 Endoscopic carpal tunnel release
  - 6.3.5 Role of wrist arthroscopy in intraarticular distal radius fractures
- 7. **Arthroscopy of Axial skeleton**
  - 7.1 Spine:
    - 7.1.1 Treatment of Disc herniation and degenerative discs
    - 7.1.2 Spinal deformity
    - 7.1.3 Tumors
  - 7.2 Temporomandibular joint :
    - 7.2.1 Diagnostics/Therapeutics
- 8. **Arthroscopy & Recent advances**
  - 8.1 Regenerative Medicine
  - 8.2 Computer assisted surgery/ Navigation surgery
  - 8.3 Robotic assisted surgery