

पाटन स्वास्थ्य विज्ञान प्रतिष्ठान, सेवाआयोग
प्राज्ञिक सेवा, शल्य चिकित्सा समूह, Urology उपसमूह, सहायक प्राध्यापक पद,
(९ख) तहको खुला र आन्तरिक प्रतियोगितात्मक परीक्षाको पाठ्यक्रम
एवं परीक्षायोजना

यस पाठ्यक्रमयोजनालाई दुई चरणमा विभाजनगरिएको 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, General Health Issues, Academic Research and Teaching-Learning Practices	50	100	40	10 ×5 = 50 (Subjective)	1.30 hrs	2.15 hrs
		Part II: Technical Subject (Relevant Subject)	50			50 ×1 = 50 (Objective Multiple Choice)	45 min	
II	Technical Subject (Relevant Subject)			100	40	7 ×10 = 70 (Long answer) 2 ×15 = 30 (Critical Analysis)		3.00 hrs
द्वितीय चरण(Second Phase)								
	Interview			30		Oral		

द्रष्टव्य :

- लिखित परीक्षाको माध्यम भाषा नेपाली वा अंग्रेजी अथवा नेपाली र अंग्रेजी दुवै हुन सक्नेछ ।
- प्रतिष्ठानको प्राज्ञिक सेवा अन्तर्गत समान तहका सबै समूह/सबै उपसमूहहरूको लागि प्रथमपत्रको Part I पाठ्यक्रमको विषयवस्तु एउटै हुनेछ र एकै पटक परीक्षा संचालन हुनेछ ।
- प्रथम पत्रको Part II र द्वितीयपत्रको पाठ्यक्रम समूह/उपसमूह अनुरूप फरक फरक हुनेछ ।
- प्रथम पत्रको Part II र द्वितीय पत्रको विषयवस्तु एउटै समूह/उपसमूहहरूको हकमा समान हुनेछ ।
- प्रथम पत्रको Part II र द्वितीय पत्रको परीक्षा संचालन एकै दिन फरक समयमा 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 उक्त उत्तर 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 मिति भन्दा ३ महिना अगाडि (संशोधन भएका वा संशोधन भई हटाईएका वा थप गरी संशोधन भई) कायम रहेकालाई यस पाठ्यक्रममा परेको सम्झनु पर्दछ ।
- प्रथम चरणको परीक्षाबाट उत्तिर्ण भई छनौट भएका उम्मेदवारहरूलाई मात्र द्वितीय चरणको परीक्षामा सम्मिलित गराइनेछ ।
- पाठ्यक्रम लागु मिति : २०८१/१२/०४

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Paper I: General Subject

Part I:

(Management, General Health Issues, Academic Research and Teaching-Learning Practices)

Section (A) - 20 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. Management: Concept, principles, functions, scope and role, level and skills of manager
- 1.8. Planning: Concept, principles, nature, types, instruments and steps
- 1.9. Leadership: Concept, function, leadership styles, leadership and management
- 1.10. Coordination: Concept, types, techniques of effective coordination
- 1.11. Communication and counselling: Concept, communication processes and barrier to effective communication, techniques for improving communication
- 1.12. Decision making: Importance, types, rational process of decision making, problem solving techniques, improving decision making
- 1.13. Participative management: Concept, advantage and disadvantage, techniques of participation
- 1.14. Time management: Concept, essential factors and strategies for effective time management
- 1.15. Conflict management: Concept, approaches to conflict, levels of conflict, causes of conflict and strategies for conflict management
- 1.16. Stress management: Concept, causes and sources of stress, techniques of stress management
- 1.17. Change management: Concept, sources of organizational change, resistance to change, management of resistance to change
- 1.18. Appreciative inquiry: Concept, basic principle and management
- 1.19. Human resource management: Concept, functions and different aspects
- 1.20. Health manpower recruitment and development
- 1.21. Financial management: Concept, approaches, budget formulation and implementation, Auditing and topics related to fiscal administration

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
- 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

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- 2.17. National Health Training Centre
- 2.18. National and International Disaster Plan, Coordination
- 2.19. Patan Academy of Health Sciences Act, Mission, Goals, Organogram
- 2.20. Scope and function of Patan Academy of Health Sciences executive bodies (senate, executive committee, academic council, faculty board, hospital management committee, subject committee), various other committees

Section (B) - 30 Marks

3. Academic Research

- 3.1 Ethics, Bio-ethics and Professionalism
- 3.2 Human dignity and Human Right
- 3.3 Benefit and Harm
- 3.4 Autonomy and Individual responsibility
- 3.5 Consent and capacity to consent
- 3.6 Privacy and confidentiality
- 3.7 Respect for humans and personal integrity
- 3.8 Non-discrimination and non-stigmatization
- 3.9 Respect for cultural diversity and pluralism
- 3.10 National Health Research Council (NHRC) and its guidelines
- 3.11 Research process: ethical research proposal development, research principles, methods and materials, conclusion/recommendation/lesson learnt, commonly used referencing styles
- 3.12 IRB/IRC forms, types, use, importance; getting IRB/IRC clearance
- 3.13 Ethics on research methodology: sample selection, sample size calculation, ensuring reliability and validity of the instruments as well as methods proposed for health research
- 3.14 Quantitative and Qualitative studies
- 3.15 Data analysis (data visualization, descriptive statistics, inferential statistics with statistical hypotheses and appropriate tools/methods for quantitative studies; theme and code generation, thematic analysis, content analysis, grounded theory for qualitative and triangulation for mixed method studies)
- 3.16 Research ethics on vulnerable and non-vulnerable population
- 3.17 Research proposal/protocol/publication:
- 3.18 Publication ethics, plagiarism including self-plagiarism

4. Teaching-Learning, Assessment and Evaluation

- 4.1 Lancet Commission Report on Education of Health Professionals
- 4.2 Adult learning: Theories, principles, use, importance and outcomes, Andragogy vs. Pedagogy
- 4.3 Conventional teaching-learning: Didactic lectures, Teacher centred approaches, use and importance
- 4.4 Surface learning, deep learning and metacognition
- 4.5 Integrated teaching: Genesis, use, importance and outcomes
- 4.6 Problem-based learning: Genesis, use, importance and outcomes
- 4.7 SPICES model its use, importance and outcomes
- 4.8 Socialization, self-directed learning, mentoring, role model
- 4.9 Community orientation/community posting, re-orientation of medical education camp, community based learning and community engaged teaching-learning methods/models, use, importance and outcomes
- 4.10 Outcome Based Education (Competency-based Medical/Health Professions Education): Genesis, use, importance and outcomes
- 4.11 Experiential learning, Reflective practice, Feedback and feed-forward, Situated learning, Co-operative learning, Communities of practice
- 4.12 Assessment of students
 - 4.12.1 Blueprinting (Table and specification) :use, importance and outcomes
 - 4.12.2 Bloom's taxonomy of cognitive, psychomotor and affective domains, use and importance
 - 4.12.3 Diagnostic, Formative, Summative and Professional exams

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- 4.13 Assessment of knowledge: Selection methods like Multiple Choice Questions, Extended Matching Items and supply methods like Short Answer Question, Problem Based Question, Long Answer Question with or without model answers and marking schemes, unstructured, semi-structured and structured viva-voce examination, advantages and limitations, use and importance, outcomes and its use in quality control
- 4.14 Assessment of performance (in-vitro): Direct observation of skills in the simulated setting, lab, ward etc. with or without checklist, Objective Structured Practical Examination, Objective Structured Clinical Examination, Standardized patients, use and importance, analysis, quality assurance, outcomes and its use in quality control
- 4.15 Assessment of performance (in-vivo): Mini-Clinical Evaluation Exercise (Mini-CEX), Direct Observation of Procedural Skills (DOPS), Case-Based Discussion (CbD), OSATS/ PBA, Multi-Source feedback (360 degree evaluation) use and importance for competency based health professions education, analysis, quality assurance, outcomes and its use in quality control
- 4.16 Assessment of observable behaviours in small groups e.g. Problem Based Learning sessions, Community Based Learning and Education sessions, Clinical clerkship rotations
- 4.17 Evaluation: Difference between assessment and evaluation, theory of change and its use in health professions education, process and outcome evaluation, qualitative, quantitative and mixed methods used in evaluation of health professions education

Paper I
Part II: Technical Subject
Section (C) - 25 Marks
General Surgery

1. Basic&Applied

1.1 AppliedSurgicalAnatomy

- 1.1.1 Required to have acknowledge of the structure and function of all system of thebody (whereapplicabletocommonclinicalconditions in surgery)
- 1.1.2 Knowledge of histology to understand the function to tissue and organs as wellas growth,degenerationandrepair
- 1.1.3 Embryologicalbasisofcommoncongenital anomalies

1.2 System

- 1.2.1 Nervoussystem
- 1.2.2 Respiratorysystem
- 1.2.3 Cardiovascularsystem
- 1.2.4 Digestive system
- 1.2.5 Endocrinesystem
- 1.2.6 Musculoskeletalsystem
- 1.2.7 General – e.g.Acid-base balance, fluid and electrolyte balance, nutrition,metabolicresponseto traumaandsepsis, etc.

2. AppliedPhysiology

3. SurgicalPathology

- 3.1 Knowledge of the surgical pathology andmicrobiology in the contextof surgeryincluding inflammation, infection, neoplasm, response on the tissues to injury,disturbanceofgrowth,degenerationprocesses,repairand regulation
- 3.2 Immunology and Genetics
- 3.3 Neoplasticdiseases
- 3.4 Gross and histopathology of common surgical conditions
- 3.5 Nervoussystem
- 3.6 Respiratory system
- 3.7 Cardiovascularsystem
- 3.8 Genito-urinarysystem

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- 3.9 Gastrointestinalsystm
- 3.10 Muscleskeletalsystem

4. **CriticalCare**

- 4.1 Basics of pathophysiology, approach and management of critical surgical situation
e.g.Trauma,shock,sepsis,organfailure
 - 4.1.1 Clinicalpictures
 - 4.1.2 Investigation
 - 4.1.3 Diagnosisconfirmation
 - 4.1.4 Management–useofequipments
 - 4.1.5 Monitoring–complications
 - 4.1.6 Counseling – communication
 - 4.1.7 Follow-up

5. **Recent advance**

- 5.1 Research-inside country
- 5.2 Recent advance–international
- 5.3 Not published research work
- 5.4 Future national vision

6. **SurgicalManagement**

- 6.1 Principleofmanagement of common general surgical conditions
 - 6.1.1 Clinicalpractice (History and examinations)
 - 6.1.2 Investigation
 - 6.1.3 Provisional Diagnosis and differentials
 - 6.1.4 Treatment-Conservative,operative,palliative
 - 6.1.5 Monitoring
 - 6.1.6 Follow-up–ofthepatients with general surgical conditionof following systems
 - 6.1.6.1 Nervoussystem
 - 6.1.6.2 Respiratorysystem
 - 6.1.6.3 Cardiovascularsystem
 - 6.1.6.4 Gastrointestinal system
 - 6.1.6.5 Genitourinarysystem
 - 6.1.6.6 Endocrineandbreast
 - 6.1.6.7 Musculo-skeletalsystemandsofttissue
 - 6.1.6.8 Trauma/Polytrauma

7. **PrinciplesofSurgery**

- 7.1 KnowledgeoftheGeneralprincipleandpracticeofSurgery
 - 7.1.1 Imagingtechniques/interventionalRadiology
 - 7.1.2 Endoscopy/Laparoscopy
 - 7.1.3 Surgeryatextremesoflife
 - 7.1.4 Theatretechniques
 - 7.1.4.1 Aseptict techniques–sterilization
 - 7.1.4.2 Anesthesiaingeneral,maintenanceofhomeostasis
 - 7.1.4.3 Basic techniques–suturingmaterialdressingplaster
 - 7.1.4.4 Diathermy and electrosurgical devices
 - 7.1.4.5 Tourniquet
 - 7.1.5 Woundhealing,dehiscence,scar,contractures
 - 7.1.6 Post operative complication and management
 - 7.1.7 Sepsis's surgery
 - 7.1.7.1 Acuteand Chronic,inflammation
 - 7.1.7.2 Woundinfection andsepticemia
 - 7.1.7.3 TB,Leprosy,AIDS,Bacterialinfection

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7.1.7.4 Antiseptic, Antibiotic policies

8. **Operation Surgery**

8.1 **Nervous System**

- 8.1.1 Exposure to extradural haematoma
- 8.1.2 Skull traction
- 8.1.3 Nerve repair and transplant
- 8.1.4 Trauma-skull, spine

8.2 **Respiratory System**

- 8.2.1 F.B. in respiratory tract
- 8.2.2 Tracheostomy, cricothyroidotomy
- 8.2.3 Chest Drainage
- 8.2.4 Thoractomy
- 8.2.5 Chest trauma (variety of injuries)

8.3 **Cardiovascular**

- 8.3.1 Cardiac Tamponade
- 8.3.2 Exposure to artery and vein, embolectomy
- 8.3.3 Amputations

8.4 **Gastrointestinal System**

- 8.4.1 All type of GI Surgery of all magnitude and types
- 8.4.2 Different combination of operation
- 8.4.3 Except-transplantation

8.5 **Genitourinary system**

- 8.5.1 Suprapubic bladder drainage
- 8.5.2 Cystoscopy
- 8.5.3 Exposure of kidney, calculus, obstructive uropathy
- 8.5.4 Perinephric abscess
- 8.5.5 Scrotal/testicular operation
- 8.5.6 Ectopic pregnancy/other pelvic surgery

8.6 **Endocrine and breast**

- 8.6.1 Thyroid/parathyroid
- 8.6.2 Breast surgery (no reconstruction)

8.7 **Musculoskeletal and soft tissue**

- 8.7.1 Simple skeletal traction
- 8.7.2 Compartmental syndrome
- 8.7.3 Bone infection

8.8 **Plastic**

- 8.8.1 Simple cleft lip repair
- 8.8.2 Skin grafting/flaps
- 8.8.3 Skin lesion
- 8.8.4 Lymph node and biopsy

8.9 **Other**

- 8.9.1 Venesection central line
- 8.9.2 Laryngoscope, ET intubation
- 8.9.3 FNAC/tru-cut needle biopsy
- 8.9.4 Defibrillation

Section (D) - 25 Marks

Urology

1. Embryology of kidney, ureter, adrenal gland, lower urinary tract, male genitalia and reproductive organs
2. Surgical anatomy of retroperitoneum, kidney, ureter, adrenal gland, lower urinary tract, male genitalia and reproductive organs

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3. Congenital defects/ diseases of kidney, ureter, adrenal glands, lower urinary tract, male genitalia and reproductive organs
4. Renal physiology and pathophysiology
5. Basic principles of immunology in urology
6. Physiology and pharmacology of urinary bladder and urethra
7. Laboratory investigations pertinent to urological diseases
8. Radiological investigations pertinent to urological diseases
9. Nuclear imaging in urological conditions
10. Symptoms and signs of disorders of genitourinary tract
11. Workup and management of haematuria
12. Renovascular hypertension and ischemic nephropathy
13. Acute kidney injury and chronic kidney disease
14. Kidney transplantation
15. Pathophysiology and management of urinary tract obstruction/ obstructive uropathy
16. Infection and inflammation of urinary tract
17. Genitourinary trauma: investigations and management
18. Normal voiding function and voiding dysfunction
19. Neuromuscular dysfunction of lower urinary tract, and neuourological evaluation including urodynamics
20. Reproductive function and dysfunction
21. Male infertility, erectile dysfunction, priapism, Peyronie's disease, disorders of ejaculation and orgasm
22. Normal physiology and pathophysiology of adrenal glands
23. Evaluation and management of disease of adrenal glands
24. Aetiogenesis, presentation, investigation and management of the following urological cancers
 - a. Kidney cancers
 - b. Upper tract urothelial cancer
 - c. Urinary bladder cancer
 - d. Prostate cancer
 - e. Penile cancer
 - f. Testicular cancer
 - g. Adrenocortical cancer
25. Urethral trauma and urethral stricture diseases
26. Pathophysiology and management of bladder outlet obstruction, including benign enlargement of prostate
27. Disorders of testis, scrotum, spermatic cord and external genitalia
28. Principles of laparoscopy and robotics as applied to urology
29. Urolithiasis: aetiogenesis, evaluation and management
30. Lasers in urology
31. Use of intestinal segments in urinary tract/ urinary diversions