

**वी.पी. कोइराला मेमोरियल क्यान्सर अस्पताल**  
**प्राविधिक अन्य सेवा, इन्जिनियरिङ्ग सेवा, सिभिल समूह, पाँचौं तह, ओभरसियर पदको खुल्ला र 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

**परीक्षा योजना (Examination Scheme)**

**प्रथम चरण (First Phase) : लिखित परीक्षा**

Paper	Subject	Full Marks	Pass Marks	No. Questions & Weightage	Time Allowed
I	Technical Subject & Organizational Knowledge	100	40	50× 2= 100 (Objective Multiple Choice Questions)	45 minutes
II		100	40	12× 5 = 60 4 × 10 = 40 (Subjective Descriptive Type)	2.30 hrs

**द्वितीय चरण (Second Phase)**

Subject	Full Marks	Examination
Interview	30	Oral

**द्रष्टव्य :**

- यो पाठ्यक्रमको योजनालाई प्रथम चरण र द्वितीय चरण गरी दुई भागमा विभाजन गरिएको छ ।
- प्रथम र द्वितीय पत्रको पत्रको विषयवस्तु एउटै हुनेछ ।
- प्रथम र द्वितीय पत्रको लिखित परीक्षा छुट्टाछुट्टै हुनेछ ।
- लिखित परीक्षाको माध्यम भाषा नेपाली वा अंग्रेजी अथवा नेपाली र अंग्रेजी दुवै 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 ।
- परीक्षामा सोधिने प्रश्नसंख्या, अङ्क र अङ्कभार यथासम्भव सम्बन्धित पत्र /विषयमा दिइए अनुसार हुनेछ ।
- परीक्षामा परीक्षार्थीले मोबाइल वा यस्तै प्रकारका विद्युतीय उपकरण परीक्षा हलमा लैजान पाइने छैन ।
- विषयगत प्रश्न हुने पत्रका हकमा प्रत्येक खण्डका लागि छुट्टाछुट्टै उत्तरपुस्तिकाहरू हुनेछन् । परीक्षार्थीले प्रत्येक खण्डका प्रश्नहरूको उत्तर सोही खण्डको उत्तरपुस्तिकामा लेख्नुपर्ने छ ।
- यस पाठ्यक्रम योजना अन्तर्गतका पत्र/विषयका विषयवस्तुमा जेसुकै लेखिएको भए तापनि पाठ्यक्रममा परेका कानून, ऐन, नियम तथा नीतिहरू परीक्षाको मिति भन्दा ३ महिना अगाडि (संशोधन भएका वा संशोधन भई हटाईएका वा थप गरी संशोधन भई) कायम रहेकालाई यस पाठ्यक्रममा परेको सम्भन्नु पर्दछ ।
- प्रथम चरणको परीक्षाबाट छनौट भएका उम्मेदवारहरूलाई मात्र द्वितीय चरणको परीक्षामा सम्मिलित गराइनेछ ।
- पाठ्यक्रम लागू मिति :-२०७८/०९/२४

**Paper I & II : - Technical Subject & Organizational Knowledge**  
**Section (A): 40 % Marks**

1. **Surveying**
  - 1.1 Principle and types of surveying, units, scales and maps
  - 1.2 Principles and methods of leveling, levelling instruments and accessories
  - 1.3 Methods of plane tabling and required equipments
  - 1.4 Basic difference between different theodolites
  - 1.5 Characteristics of contour lines
  - 1.6 Setting Out: Small buildings and Simple curves
2. **Construction Materials**
  - 2.1 Formation and availability of stones in Nepal
  - 2.2 Methods of laying and construction with various stones
  - 2.3 Different cements: Ingredients, properties and manufacture; Admixtures
  - 2.4 Brick: type, manufacture, laying, bonds
  - 2.5 Paints and Varnishes: Type and selection; preparation techniques and use
  - 2.6 Bitumen: Type, selection and use
3. **Mechanics of Materials and Structures**
  - 3.1 Ultimate strength and working stress of materials
  - 3.2 Relation between shear force and bending moment
  - 3.3 Simple Strut Theory
4. **Hydraulics**
  - 4.1 Properties of fluid: mass, weight, density, volume, pressure and Pascal's law
  - 4.2 Energy of flowing liquid: elevation energy, Kinetic energy, potential energy, internal energy
  - 4.3 Flows: Characteristics of pipe flow and open channel flow
5. **Soil Mechanics**
  - 5.1 Soil types and classification
  - 5.2 Three phase system of soil
  - 5.3 Factors affecting soil compaction
  - 5.4 Active and passive earth pressures

**Section (B): 40 % Marks**

6. **Building Construction Technology**
  - 6.1 Type and suitability of different foundations: Shallow, deep
  - 6.2 Design of simple brick or stone masonry foundations
  - 6.3 Type and thickness of walls, use of scaffolding
  - 6.4 Source of Dampness, remedial measures for damp proofing
  - 6.5 Concrete Technology
    - 6.5.1 Constituents of cement concrete
    - 6.5.2 Grading of aggregates
    - 6.5.3 Concrete mixes
    - 6.5.4 Water cement ratio
    - 6.5.5 Factors affecting strength of concrete
    - 6.5.6 Form work
    - 6.5.7 Curing

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- 6.6 Wood work : Frame and shutters of door and window, timber construction of upper floors
  - 6.7 Floor finishes and plastering
  7. **Water Supply and Sanitation Engineering**
    - 7.1 Objectives of water supply system
    - 7.2 Source of water and its selection
    - 7.3 Quantity of sanitary sewage
    - 7.4 Pit latrine and septic tank
  8. **Irrigation Engineering**
    - 8.1 Need for irrigation; advantages of irrigation
    - 8.2 Sources of irrigation: water, river & streams, ground water and others
    - 8.3 Methods of irrigation: surface, sub-surface and others
  9. **Highway Engineering**
    - 9.1 Introduction to transportation systems
    - 9.2 Historic development of roads
    - 9.3 Classification of road in Nepal
    - 9.4 Basic requirements of road alignment
    - 9.5 Use of Nepal Road Standard and subsequent revision in road design
  10. **Estimating and Costing**
    - 10.1 Units of measurement and payment of various items of work and material
    - 10.2 Standard estimate formats of government offices
    - 10.3 Basic general knowledge on the use of rate analysis norms prepared by Ministry of Works and Transport and the district rates
    - 10.4 Specification and valuation
  11. **Construction Management**
    - 11.1 Need for organization, responsibilities of a civil Sub- engineer
    - 11.2 Preparation of site plan, organizing labor
    - 11.3 Procurement and Contract Procedure
    - 11.4 Contracts and its types
    - 11.5 Tender procedure
    - 11.6 Contract agreement
    - 11.7 Construction schedule, equipment and materials schedule, construction stages and operations
- Section (C): 20 % Marks**
12. **Organizational Knowledge**
    - 12.1 B.P.Koirala Memorial Cancer Hospital : History, organizational structure, functions, roles, services, problems and challenges
    - 12.2 B.P.Koirala Memorial Cancer Hospital related act and regulations
    - 12.3 The Constitution of Nepal (From Part 1 to 5, 13, 14, 15, 16, 17, 18, 19 & 20; and Schedules)
    - 12.4 Local Government Operation Act, 2074