

मेलुङ गाउँपालिका  
गाउँ कार्यपालिकाको कार्यालय  
भेड्पु, दोलखा  
बागमती प्रदेश, नेपाल

इन्जिनियर पदको पाठ्यक्रमको रूपरेखा

**१.इन्जिनियर (अधिकृतस्तर छैटौँ तहको लागि)**

विषय	पूर्णाङ्क	उर्तीर्णाङ्क	परीक्षा प्रणाली	प्रश्नसंख्याXअङ्क	समय
सिभिल इन्जिनियरिङ सम्बन्धी	१००	४०	वस्तुगत बहुवैकल्पिक प्रश्न(Multiple Choice Questions)	१०० प्रश्न X१ अङ्क	१ घण्टा १५ मिनेट
अन्तरवार्ता	२०	-	मौखिक	-	-

**द्रष्टव्य :**

- इन्जिनियरको लागि बागमती प्रदेश लोक सेवा आयोगले प्रकाशन गरेको इन्जिनियरिङ सेवा, सिभिल समूह, अधिकृत छैटौँ तह इन्जिनियर पदको प्रथम पत्रको पाठ्यक्रमको बुँदा १-९ बाट १ अङ्कका १०० प्रश्नहरू सोधिनेछ।
- लिखित परीक्षा र मौखिक परीक्षामा प्राप्त अङ्क जोडेर अन्तिम नतिजा गणना गरिनेछ।
- लिखित परीक्षामा यस गाउँपालिकाको वेबसाइटमा राखिएको पाठ्यक्रमबाट प्रश्नहरू सोधिनेछ।

प्रदेश लोक सेवा आयोग, बागमती प्रदेश  
स्थानीय तह अन्तर्गतको इञ्जिनियरिङ सेवा, सिभिल समूह, अधिकृत छैटौँ तह, इञ्जिनियर पदको खुला प्रतियोगितात्मक  
परीक्षाको पाठ्यक्रम

प्रथम पत्र :- सिभिल इञ्जिनियरिङ

**1. Structure Analysis and Design**

- 1.1 Stresses and strains; theory of torsion and flexure; moment of inertia
- 1.2 Analysis of beams and frames: Bending moment, shear force and deflection of beams and frames: determinate structure
- 1.3 Reinforced concrete structures: Difference between working stress and limit state philosophy, analysis of RC beams and slabs in bending, shear, deflection, bond and end anchorage, Design of axially loaded columns; isolated and combined footings, introduction to pre-stressed concrete
- 1.4 Steel and timber structures: Standard and built-up sections: Design of riveted, bolted and welded connections, design of simple elements such as ties, struts, axially loaded and eccentric columns, column bases,

**2. Construction Materials**

- 2.1 Properties of building materials: physical, chemical, constituents, thermal etc.
- 2.2 Stones-characteristics and requirements of stones as a building materials
- 2.3 Ceramic materials: ceramic tiles, Mosaic Tile, brick types and testing etc.
- 2.4 Cementing materials: types and properties of lime and cement; cement mortar tests
- 2.5 Metals: Steel; types and properties; Aluminium
- 2.6 Timber and wood: timber trees in Nepal, types and properties of wood
- 2.7 Miscellaneous materials: Asphaltic materials (Asphalt, Bitumen and Tar); paints and varnishes; polymers
- 2.8 Soil properties and its parameters
- 2.9 Alternative materials / technology

**3. Concrete Technology**

- 3.1 Constituents and properties of concrete (physical and chemical)
- 3.2 Water cement ratio
- 3.3 Grade and strength of concrete, concrete mix design, testing of concrete
- 3.4 Mixing, transportation pouring and curing of concrete
- 3.5 Admixtures

**4. Construction Management**

प्रदेश लोक सेवा आयोग, बागमती प्रदेश  
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- 4.1 Construction scheduling and planning: network techniques, bar charts and computer aided construction management
- 4.2 Contractual procedure and management: types of contract, tender and tender notice, preparation of bidding (tender) document, contractors pre-qualification, evaluation of tenders and selection of contractor, contract negotiation, contract acceptance, condition of contract; quotation and direct order, classifications of contractors; dispute resolution
- 4.3 Material management: procurement procedures and materials handling
- 4.4 Cost control, quality control and time control
- 4.5 Utility maintenance
- 4.6 Health, safety and insurance
- 4.7 Project monitoring and evaluation
- 4.8 Quality assurance plan
- 4.9 Variation and changes
- 4.10 Use of construction equipments

**5. Estimating and Costing, Valuation and Specification**

- 5.1 Types of estimates and their specific uses
- 5.2 Methods of calculating quantities
- 5.3 Key components of estimating norms and rate analysis
- 5.4 Preparation of bill of quantities
- 5.5 Purpose and importance of specification
- 5.6 Purpose, principles and methods of valuation

**6. Drawing Techniques**

- 6.1 Drawing sheet composition and its essential components
- 6.2 Suitable scales, site plans and location plans, preliminary drawings, conceptual and working drawings
- 6.3 Theory of projection drawing: perspective, orthographic and axonometric projection; first and third angle projection
- 6.4 Drafting tools and equipments; conventions and symbols
- 6.5 Topographic, electrical, plumbing and structural drawings
- 6.6 Techniques of free sketches drawing

**7. Engineering Survey**

- 7.1 Introduction and basic principles

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- 7.2 Linear measurements: techniques; chain, tape, ranging rods and arrows; representation of measurement and common scales; sources of errors; effect of slope and slope correction; correction for chain and tape measurements; Abney level and clinometers
- 7.3 Compass and plane table surveying: bearings; types of compass; problems and sources of errors of compass survey; principles and methods of plane tabling
- 7.4 Leveling and contouring: Principle of leveling; temporary and permanent adjustment of level; bench marks; booking methods and their reductions; longitudinal and cross sectioning; reciprocal leveling; trigonometric leveling; contour interval and characteristics of contours; methods of contouring
- 7.5 Theodolite traversing: need of traverse and its significance; computation of coordinates; adjustment of closed traverse; closing errors
- 7.6 Uses of Total Station, Electronic Distance Measuring Instruments & GPS

**8. Engineering Economics**

- 8.1 Benefit cost analysis, cost classification, sensitivity analysis, internal rate of return, time value of money
- 8.2 Economic equilibrium, demand, supply and production, net present value, financial and economic evaluation

**9. Professional Practices and Legislations**

- 9.1 Ethics and professionalism: code of conduct and guidelines for professional engineering practices
- 9.2 Nepal Engineering Council Act, 2055; and regulations, 2056
- 9.3 Relation with clients, contractor and professionals
- 9.4 Public procurement concept and practices for works, goods and services and its importance
- 9.5 The Constitution of Nepal (From Part 1 to 5, 13, 14, 15, 16, 17, 18, 19 & 20; and Schedules)
- 9.6 Local Government Operation Act, 2074

**10. भाषा - नेपाली र अङ्ग्रेजी**

**10.1 नेपाली शुद्धाशुद्धि सम्बन्धी ज्ञान**

सरकारी कामकाजको नेपाली भाषाको लेखाइ विशेष गरी टिप्पणी र आदेश, पत्राचार, परिपत्र, निर्देशन, आदेश, विज्ञप्ति, सूचना, विज्ञापन, राजपत्र, प्रतिवेदन, वार्षिक प्रतिवेदन, ऐन-नियमावली तथा कार्यविधि, बैठकको माइन्युट तथा निर्णय, प्रशंसा पत्र, निमन्त्रणा पत्र, करारनामा, सम्झौता, कबुलियतनामा, बयान, वेबसाइट लेख लगायत सबै प्रकारका मस्यौदा वा अन्तिम लिखत तयारी गर्दा शुद्धाशुद्धि लेखाइको परीक्षण (विशेष गरी वर्णविन्यास, पदसङ्गति, नाम, सर्वनाम, विशेषण, क्रिया, अव्यय [नामयोगी, क्रियायोगी (क्रियाविशेषण), संयोजक, विस्मयादिबोधक, निपात], काल, वाच्य, पदवर्ग, अनुकरणात्मक शब्द, कारक