

नेपाल आयल निगम लिमिटेड

खुला तथा आन्तरिक प्रतियोगितात्मक परीक्षाको लागि पाठ्यक्रम एवं परीक्षा योजना

स्तर : सहायक, सेवा : प्राविधिक, समूह : इन्जिनियरिङ्ग, तह : ५, पद : वरिष्ठ सहायक (सिभिल)

यस पाठ्यक्रम योजनालाई दुई चरणमा विभाजन गरिएको छ :

प्रथम चरण :- लिखित परीक्षा, पूर्णाङ्क : २००

द्वितीय चरण :- अन्तर्वार्ता, पूर्णाङ्क : ३०

प्रथम चरण :- लिखित परीक्षा योजना							
पत्र	विषय	परीक्षा प्रणाली	प्रश्न संख्या	अंक भार	पूर्णाङ्क	उत्तीर्णाङ्क	समय
प्रथम	सामान्य ज्ञान तथा विषयगत ज्ञान	बस्तुगत बहुउत्तर	२५	२	१००	४०	२ घण्टा
		छोटो उत्तर	८	५			
		लामो उत्तर	१	१०			
द्वितीय	सेवा सम्बन्धी	छोटो उत्तर	१४	५	१००	४०	३ घण्टा
		लामो उत्तर	३	१०			
द्वितीय चरण :- अन्तर्वार्ता							
अन्तर्वार्ता						३०	

द्रष्टव्य :

- लिखित परीक्षाको माध्यम भाषा नेपाली वा अंग्रेजी अथवा नेपाली र अंग्रेजी दुवै हुनेछ ।
- प्रथम पत्र र द्वितीय पत्रको लिखित परीक्षा छुट्टाछुट्टै हुनेछ ।
- परिक्षार्थीले प्रथम पत्रको प्रत्येक खण्डको उत्तर छुट्टाछुट्टै उत्तरपुस्तिकामा र दोस्रो पत्रको लागि सबै प्रश्नको उत्तर एउटै उत्तरपुस्तिकामा लेख्नुपर्नेछ ।
- 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 सम्झनु पर्दछ ।
- प्रथम चरणको परीक्षाबाट छनौट भएका उम्मेदवारहरूलाई मात्र द्वितीय चरणको अन्तर्वार्तामा सम्मिलित गराइनेछ ।
- वस्तुगत बहुवैकल्पिक प्रश्नको गलत उत्तर दिएमा प्रत्येक गलत उत्तरवापत २०% अंक कट्टा गरिनेछ । तर उत्तर नदिएमा त्यसवापत अंक कट्टा गरिनेछैन ।
- पाठ्यक्रम लागू मिति : २०७४ असोज २२ गते देखि

प्रथम पत्र - सामान्य ज्ञान तथा विषयगत ज्ञान

खण्ड क - सामान्य ज्ञान (२५।२)

१. नेपालको ऐतिहासिक, राजनैतिक, आर्थिक, सामाजिक, साहित्यिक, सांस्कृतिक विषय ।
२. विज्ञानका महत्वपूर्ण उपलब्धिहरू सम्बन्धी सामान्य जानकारी ।
३. नेपालका भौगोलिक स्थिति, धरातलीय स्वरूप, जलवायु, हावापानी र यसले जनजीवनमा पार्ने प्रभाव सम्बन्धी विषय ।
४. नेपालका राजनैतिक विभाजन सामान्य जानकारी ।
५. नेपालका विकासका पूर्वाधारहरू शिक्षा, स्वास्थ्य, यातायात, सञ्चार, खानेपानी, विद्युत तथा अन्य ऊर्जाका श्रोतहरूको विकासको अवस्था
६. नेपाली समाजका परम्परा, सामाजिक मूल्य र मान्यता, धर्म, जातजाति, भाषा सम्बन्धी विषय ।
७. नेपालको जनसङ्ख्या र जनसङ्ख्या व्यवस्थापन
८. राष्ट्रिय र अन्तराष्ट्रिय महत्वका समसामयिक घटना तथा नवीनतम गतिविधिहरू ।

खण्ड ख - विषयगत ज्ञान (८।५ + १।१०)

१. नेपालको वर्तमान संविधान र नेपालको संवैधानिक विकासक्रम ।
२. नेपाल आयल निगम लिमिटेडको उद्देश्य, काम, कर्तव्य र अधिकार ।
३. नेपालमा पेट्रोलियम पदार्थको आपूर्ति व्यवस्थापन, भण्डारण, ढुवानी र गुणस्तर ।
४. नेपालमा पेट्रोलियम पदार्थको बिक्री वितरणको अद्यावधिक स्थिति ।
५. नेपाल आयल निगम लिमिटेडको कर्मचारी प्रशासनका विविध पक्ष ।
६. नेपाल आयल निगम लिमिटेड प्रबन्धपत्र तथा नियमावलीको जानकारी ।
७. आचरण, अनुशासन र नैतिकता ।
८. संगठित संस्थाको जवाफदेहिता ।
९. आर्थिक अनुशासन र आर्थिक नियन्त्रण ।
१०. समावेशीकरण, समानुपातिक समावेशीकरण र सकारात्मक विभेद ।
११. सार्वजनिक सेवा प्रवाह सम्बन्धी सामान्य जानकारी ।
१२. कार्यालय र कार्यालय व्यवस्थापनको अवधारणा र महत्व ।
१३. कार्यालय व्यवस्थापनमा कम्प्यूटर प्रणालीका आवश्यकता र महत्व ।
१४. पत्रहरूको वर्गीकरण, जनसम्पर्क एवं कार्यालयमा संचार व्यवस्था ।
१५. तथ्याक तथा सूचनाको प्रकृति र महत्व ।

द्वितीय पत्र - सेवा सम्बन्धी

1. Surveying

- 1.1 General: Classifications, Principle of surveying, Selection of suitable method, Scales, plans and maps, Entry into survey field books and level books
- 1.2 Leveling: Methods of leveling, Leveling instruments and accessories, Principles of leveling,
- 1.3 Plane Tabling: Equipments required, Methods of plane tabling, Two and three point problems
- 1.4 Theodolite and Traverse surveying: Basic difference between different theodolites, Temporary adjustments of theodolites, Fundamental lines and desired relations, Tacheometry: stadia method, Trigonometrical leveling, Checks in closed traverse
- 1.5 Contouring: Characteristics of contour lines, Method of locating contours, Contour plotting
- 1.6 Setting Out: Small buildings, Simple curves

2. Construction Materials

- 2.1 Stone: Formation and availability of stones in Nepal, Methods of laying and construction with various stones
- 2.2 Cement: Different cements: Ingredients, properties and manufacture, Storage and transport, Admixtures
- 2.3 Clay and Clay Products: Brick: type, manufacture, laying, bonds
- 2.4 Paints and Varnishes: Type and selection, Preparation techniques, Use
- 2.5 Bitumen: Type, Selection, Use

3. Hydraulics

- 3.1 General: Properties of fluid: mass, weight, specific weight, density, specific volume, specific gravity, viscosity, Pressure and Pascal's law
- 3.2 Hydro-Kinematics and Hydro-Dynamics: Energy of flowing liquid: elevation energy, Kinetic energy, potential energy, internal energy
- 3.3 Measurement of Discharge: Weirs and notches, Discharge formulas
- 3.4 Flows: Characteristics of pipe flow and open channel flow

4. Soil Mechanics

- 4.1 General: Soil types and classification, Three phase system of soil, Unit Weight of soil mass: bulk density, saturated density, submerged density and dry density, Interrelationship between specific gravity, void ratio, porosity, degree of saturation, percentage of air voids air content and density index,
- 4.2 Soil Water Relation: Terzaghi's principle of effective stress, Darcy's law, Factors affecting permeability
- 4.3 Compaction of soil: Factors affecting soil compaction, Optimum moisture content, Relation between dry density and moisture content
- 4.4 Shear Strength of Soils: Mohr-Coulomb failure theory, Cohesion and angle of internal friction,
- 4.5 Earth Pressures: Active and passive earth pressures, Lateral earth pressure theory, Rankine's earth pressure theory
- 4.6 Foundation Engineering: Terzaghi's general bearing capacity formulas and their application

5. Structural Design

- 5.1 R. C. Sections in Bending: Under reinforced, over reinforced and balanced sections, Analysis of single and double reinforced rectangular sections
- 5.2 Shear and Bond for R. C. Sections: Shear resistance of a R.C. section, Types of Shear reinforcement and their design, Determination of anchorage length
- 5.3 Axially Loaded R. C. Columns: Short and long columns, Design of a rectangular column section
- 5.4 Design and Drafting of R. C. Structures: Singly and doubly reinforced rectangular beams, Simple one-way and two-way slabs, Axially loaded short and long columns
- 5.5 Mechanics of Beams: Relation between shear force and bending moment, Thrust, shear and bending moment diagrams for statically determinate beams under various types of loading

6. Building Construction Technology

- 6.1 Foundations: Subsoil exploration, Type and suitability of different foundations: Shallow, deep, Shoring and dewatering, Design of simple brick or stone masonry foundations
- 6.2 Walls: Type of walls and their functions, choosing wall thickness, Height to length relation, Use of scaffolding
- 6.3 Damp Proofing: Source of Dampness, Remedial measures to prevent dampness
- 6.4 Concrete Technology: Constituents of cement concrete, Grading of aggregates, Concrete mixes, Water cement ratio, Factors affecting strength of concrete, Form work, Curing
- 6.5 Wood work: Frame and shutters of door and window, Timber construction of upper floors, Design and construction of stairs
- 6.6 Flooring and Finishing: Floor finishes: brick, concrete, flagstone, Plastering

7. Water Supply and Sanitation Engineering

- 7.1 General: Objectives of water supply system, Source of water and its selection: gravity and artisan springs, shallow and deep wells: infiltration galleries.
- 7.2 Gravity Water Supply System: Design period, Determination of daily water demand, Determination of storage tank capacity, Selection of pipe, Pipe line design and hydraulic grade line
- 7.3 Design of Sewer: Quantity of sanitary sewage, Maximum, Minimum and self cleaning velocity
- 7.4 Excreta Disposal and Unsewered Area: Pit latrine, Design of septic tank

8. Highway Engineering

- 8.1 Drainage System: Importance of drainage system and requirements of a good drainage system
- 8.2 Road Pavement: Pavement structure and its components: sub-grade, sub-base, base and surface courses
- 8.3 Road Machineries: Earth moving and compacting machines
- 8.4 Road Construction Technology
- 8.5 Road Maintenance and Repair: Type of maintenance Works

9. Estimating and Costing

- 9.1 General: Main items of work, Units of measurement and payment of various items of work and material, Standard estimate formats of government offices
- 9.2 Rate Analysis: Basic general knowledge on the use of rate analysis norms prepared by Ministry of Works and Transport and the district rates prescribed by district development committee
- 9.3 Specifications: Interpretation of specifications
- 9.4 Valuation: Methods of valuation, Basic general knowledge of standard formats used by commercial banks and NIDC for valuation

10. Construction Management

- 10.1 Responsibilities of a civil overseer, Relation between Owner, Contractor and Engineer
- 10.2 Site Management: Preparation of site plan, Organizing labor, Measures to improve labor efficiency, Accident prevention
- 10.3 Contract Procedure: Contracts, Departmental works and day-work, Types of contracts, Tender and tender notice, Earnest money and security deposit, Preparation before inviting tender, Agreement, Conditions of contract, Construction supervision
- 10.4 Accounts: Administrative approval and technical sanction, Familiarity with standard account keeping formats used in governmental organizations, Muster roll, Completion report
- 10.5 Planning and Control: Construction schedule, Equipment and materials schedule, Construction stages and operations, Bar chart
- 10.6 Basic knowledge of computer application
