

Nepal Telecom

Nepal Doorsanchar Company Ltd.

Syllabus

Architecture Engineer , Level 7, Technical , Open Competition

Paper I: General Module

Time: 2 hours

Full Marks: 100

Pass Marks: 40

All the Questions are Compulsory

Types of question	Section A	Section B	Number of questions	Marks	Total Marks	Remarks
Objective Questions	20	10	30	1	30	1/4 marks will be deducted for each incorrect answer
Short Questions	6	4	10	4	40	
Long Questions	2	1	3	10	30	
Total					100	

Use of non-programmable calculator is permitted in the examination hall.

Section "A" (Technical)

1 Mathematics and Statistics: (Weightage 5% -15%)

Function and Limit, Maxima and Minima, Differentiation and Integration and their interpretation, Equations of straight lines, circle, parabola, hyperbola, spheres, cylinders and cones, Linear differential equations (up to second order), Fourier series, Fourier Transforms, Fourier integral, inverse Fourier integral formula, odd and even function, Laplace transforms, Line, surface and volume integral, Tayler series, Zeros and Poles, Z-transforms

Introduction of statistics and descriptive statistics, Mean, Mode, Variance, Dispersion, Probability, Discrete random variables and probability distribution, continuous random variables and probability distributions, Samples, Sampling theorems, Linear regression, Population mean & sample mean and accuracy, pi & bar diagrams, error functions.

2 Applied Mechanics and Thermodynamics (Weightage 20%-30%)

Concept of equilibrium of particles, Force and position vectors, Conditions for equilibrium of a particles and a rigid body, Free body diagram, Moment of force and couple, Laws of friction, Simple trusses, Center of Gravity and Centroid, Moments of Inertia, Newton's laws and equation of motion, Translation, pure rotation and general plane motion of rigid body.

Boyles and Charles law of gases, First and second law of thermodynamics, Introduction to Entropy and enthalpy, Viscosity, specific gravity, specific volume, bulk modulus, Refrigeration Systems, Heat transfer, Types of heat transfer.

3 Basic Electricity and Electronics (Weightage 15%-25%)

Circuit elements, series & parallel circuits, resistance, resistivity, Ohm's laws, Kirchoff's laws, Single phase & three phase circuit analysis, Measurement of current, voltage, power, energy, insulation resistance, Primary & Secondary cells, Cells in series & parallel, star & delta connections, Fundamentals of transformers, Generators and Induction motors, Electrical shock hazards, Earthing and shielding techniques for telecom equipments, Lightning protections.

4 Information Technology Basics(Weightage 5%-15%)

Computer architecture, Microprocessor fundamentals, Microcomputer systems: Concept of ROM, RAM., MS-DOS, windows, MS-office packages, basic concept on internet and e-mail.

(End of Section "A")

Section "B" (Management, Finance & Rules Regulation)

1 Project Management (Weightage 5%-15%)

Definitions, the project life cycle, Setting project objectives & goals, Network model: CPM & PERT, Gant chart, Project scheduling, Resource leveling, Systems of Project control, Cost control, Preparation of operational budget, Introduction to budgetary control, Planning the quality, time & cost dimensions, Negotiating for Materials, Supplies & Services, Bringing the project to a Successful conclusion.

2 Economics and General Accounting Principles (Weightage 5%-15%)

Essential business & accounting terminology, Cost classification & analysis, Interest & time value of money, Basic methodology of engineering economic studies, cost and benefit analysis, risk analysis, investment decisions, demand analysis and sales forecasting, Basic knowledge of trial balance & Balance sheet, income statements, revenue and capital expenditure, budgeting and capitalization, depreciation and subsidy, Procurement procedures (FOB, CIF, Liquidated Damage, Letter of Credit, Insurance, Invoice, Bid security, performance bond), Competitive bidding.

3 Management Concepts (Weightage 3%-7%)

Vision, Mission, Goal, Objectives, Targets, Strategies, Organization structure, Authority and Power delegation, Leadership, Motivation, Group dynamics, Time management, Conflict Management, MIS, Customer care, Decision support system, Out sourcing, Inventory control, Job description, training, service portfolio and tariff structure of Nepal Telecom.

4 ऐन, विनियमावली, नीति नियम (Weightage 5% - 15%)

- नेपाल दूरसंचार कम्पनी लिमिटेडको कर्मचारी विनियमावली, २०६१ को परिच्छेद ६ बिदा, परिच्छेद ८ आचरण तथा अनुशासन, परिच्छेद १० सजाय र पूनरावेदन ।

- नेपाल दूरसंचार कम्पनी लिमिटेडको आर्थिक विनियमावली, २०७१ को भाग २ को खरिद सम्बन्धी कार्यविधि, भाग ३ को परिच्छेद १ को योजना तर्जुमा, वार्षिक कार्यक्रम र बजेट, परिच्छेद ३ कम्पनीको सम्पत्तिको जिम्मा, त्यसको लगत, संरक्षण र बरबुझारथ ।
- कम्पनी ऐन, २०६३ को परिच्छेद २ कम्पनीको स्थापना, परिच्छेद ६ संचालक समिति ।
- दूरसंचार नीति ।
- दूरसंचार ऐन, २०५३ को परिच्छेद-७ दूरसंचार लाइनको जडान र रेखदेख, परिच्छेद - ८ सेवा शुल्क निर्धारण तथा असूली, परिच्छेद -११ विविध, दफा ४९ रेडियो फ्रिक्वेन्सी नीति सम्बन्धित व्यवस्था ।
- सूचना प्रविधि नीति

(End of Section "B")

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Nepal Doorsanchar Company Limited
Syllabus
Architecture Engineer , Level 7, Technical , Open Competition
Paper II: Specialized Module

(Specialized subject for Architecture Engineer)

Time : 2 hours

Full Marks : 100

Pass Marks : 40

All the questions are compulsory.

Types of questions	Number of questions	Marks	Total Marks	Remarks
Objective questions	30	1	30	¼ Marks will be deducted for each incorrect answer
Short questions	10	4	40	
Long questions	3	10	30	
Total			100	

Use of non programmable calculator and relevant codes of practice are permitted in the examination hall.

1. Building Materials and Construction (Weightage 20% - 40%)

Stone Masonry, Brick masonry, Hollow Concrete Blocks, Sand, Lime, Mortar, Paintings, Water Proofing, Roofing Systems, Doors and windows, Walls, Pre-fabrication, Flooring, Plastering, Temporary Construction, Building elements, Building services, National Building code, Development control System in municipalities in Nepal, Maintenance and repair of Buildings, Principles of low cost construction techniques, Current Building norms for estimating and costing.

2. Structural Design and Analysis (Weightage 15%- 25%)

Design of RCC footings, columns, slabs, beams, Analysis of structural system in a Building, Design of steel structure, Design of timber structure, Design of masonry structure, Common structural problems in RCC buildings in Nepal, Requirements of earthquake resistant building construction, Computer Aided Design(CAD) of building structure, Mandatory Rule of Thumb in building design, Non- engineered earthquake resistant building design.

3. Urban Planning and Housing (Weightage 20%- 40%)

Hierarchy of urban settlements, Types of urban settlements in Nepal, Base Maps, Hierarchy of plans, Principles of land use planning, Building byelaws, Periodic plans for local authorities, Planning legislation of Nepal, Environmental issues in

urban development, Institutions involved in urban planning and development in Nepal, Types of urban development plans and programs in Nepal, Conservation of heritage sites, Settlement planning for disaster mitigation, Municipalities of Nepal and their role in urban development, Town Development Committees and their role in urban development, Different types of housing, Principles of housing design, Different models of land development, Squatter and slums, Private housing development, Rural housing, housing development programs in Nepal, Prospects of apartments and group housing in Nepal.

4. Architecture (Weightage 15%- 25%)

History of architecture, Contemporary world architecture, contemporary Nepalese architects and their works, Traditional architecture of Nepal, Architecture of Kathmandu Valley, Principles of architectural design, Factors to be considered while designing buildings, Standards to be followed while designing buildings in Nepal, Contemporary world architects and their works, Architectural landmarks in Nepal, Conservation of historic buildings, Ethics of architects in professional practice, Master architects and their architectural theories.

द्रष्टव्य :

१. प्रश्नहरू अंग्रेजी तथा नेपाली दुवै वा कुनै एक भाषामा मात्र पनि सोध्न सकिनेछ ।
२. प्रश्नहरू सैद्धान्तिक, व्यवहारिक र विश्लेषणात्मक किसिमबाट सोधिनेछन् ।
३. परीक्षार्थीहरूले अंग्रेजी वा नेपाली मध्ये कुनै एक वा दुवै भाषामा उत्तर दिन सक्नेछन् ।
४. प्रश्नहरूसँग सम्बन्धित ऐन, नीति, नियम तथा प्रचलित नेपाल कानूनहरू (नेपाल दूरसञ्चार कम्पनी लिमिटेडसँग सम्बन्धित समेत) मा परीक्षा मिति भन्दा तीन महिना अघिसम्ममा संशोधन भई कायम रहेका व्यवस्था लागु हुनेछ ।
५. यथासम्भव सबै शिर्षकहरूलाई समेट्ने गरी प्रश्नहरू सोधिनेछन् ।