राष्ट्रिय वाणिज्य बैंक लिमिटेड
तह ८, प्रबन्धक (इञ्जिनियर) (प्रशासन सेवा, इञ्जिनियरिङ्ग समूह)
खुला प्रतियोगितात्मक लिखित परिक्षाको पाठ्यक्रम

सेवा :- प्रशासन | समुह :- इञ्जिनियरिङ्ग | उपसमुह :-
तह :- ८ | पद :- प्रवन्धक (इञ्जिनियर) | किसिम :- खुला

पाठ्यक्रम योजनालाई निम्नानुसारका दुई चरणमा विभाजन गरिएको छ ।

प्रथम चरण :- लिखित परीक्षा — पूर्णाङ्क :- २००
द्वितीय चरण :- अन्तर्वार्ता — पूर्णाङ्क :- ३०

परीक्षा योजना (Examination Scheme)

१. प्रथम चरण : लिखित परीक्षा (Written Examination)

पत्र	विषय	पूर्णाङ्क	उत्तीर्णाङ्क	परीक्षा प्रणाली		प्रश्नसंख्या x अङ्क	समय
प्रथम	Banking and Organizational Management	१००	४०	विषयगत	लामो उत्तर आउने प्रश्न	१० प्रश्न x १० अङ्क	३ घण्टा
द्वितीय	Engineering: Technology, Materials and Environment	१००	४०	विषयगत	तर्कयुक्त विश्लेषणात्मक प्रश्न	६ प्रश्न x १० अङ्क	३ घण्टा
					समस्या समाधानमुलक प्रश्न	२ प्रश्न x २० अङ्क	

२. द्वितीय चरण : अन्तर्वार्ता (Interview)

विषय	पूर्णाङ्क	परीक्षा प्रणाली
अन्तर्वार्ता	३०	मौखिक

द्रष्टव्य :

१. लिखित परीक्षाको माध्यम भाषा नेपाली वा अंग्रेजी अथवा नेपाली र अंग्रेजी दुवै हुन सक्नेछ ।
२. प्रथम र द्वितीय पत्रको लिखित परीक्षा छुट्टाछुट्टै हुनेछ ।
३. लिखित परीक्षामा सोधिने प्रश्न संख्या र अंकभार यथासम्भव सम्बन्धित पत्र/विषयमा तोकिए अनुसार हुनेछ ।
४. विषयगत प्रश्नहरूको हकमा एउटा लामो प्रश्न वा 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 ।
५. विषयगत प्रश्न हुने पत्र/विषयका प्रत्येक खण्डका लागि छुट्टाछुट्टै उत्तरपुस्तिकाहरू हुनेछन् । परिक्षार्थीले प्रत्येक खण्डका प्रश्नको उत्तर सोही खण्डको उत्तरपुस्तिकामा लेख्नुपर्नेछ ।
६. यस पाठ्यक्रम योजना अन्तर्गतका पत्र/विषयका विषयवस्तुमा जुन सुकै कुरा लेखिएको भए तापनि 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 पाठ्क्रममा परेको सम्झनु पर्दछ ।
७. प्रथम चरणको परीक्षाबाट छनौट भएका उम्मेदवारहरूलाई मात्र द्वितीय चरणको परीक्षामा सम्मिलित गराइनेछ । साथै द्वितीय चरणको परीक्षामा सहभागी भएका उम्मेदवारलाई मात्र तृतीय चरणको परीक्षामा सम्मिलित गराइनेछ ।
८. **पाठ्यक्रम स्वीकृत मितिः २०८२/०९/१७**

राष्ट्रिय वाणिज्य बैंक लिमिटेड
तह ८, प्रबन्धक (इञ्जिनियर) (प्रशासन सेवा, इञ्जिनियरिङ्ग समूह)
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प्रथम पत्र (Paper – I)

Banking and Organizational Management

Section – A (50 Marks)

1 Banking and Related Institutions

1.1 The Central Bank: Nepal Rastra Bank
1.2 Commercial Banking in Nepal: Evolution and Status
1.3 Rastriya Banijya Bank: Role, Contribution, Challenges and Prospects
1.4 Banks and Financial Institutions in Nepal: Role, Financial Indicators
1.5 Non-Banking Financial Institutions in Nepal: Role, Performance
1.6 Credit Information Center Ltd (CICL)
1.7 Nepal Clearing House Ltd (NCHL)
1.8 Credit Rating Agencies

2 Banking Related Laws and Directives

2.1 Nepal Rastra Bank Act, 2058
2.2 Bank and Financial Institution Act, 2073
2.3 Payment and Settlement Act, 2075
2.4 Money Laundering Prevention Act, 2064
2.5 Banking Offence and Punishment Act, 2064
2.6 Foreign Exchange (Regulation) Act, 2019
2.7 Electronic Transaction Act, 2063
2.8 Negotiable Instruments Act, 2034
2.9 The Act on Recovery of Debts of Banks and Financial Institutions, 2058
2.10 Unified Directives and Circulars issued by Nepal Rastra Bank for Banks and Financial Institutions in Nepal

3 Other Related Laws and Bylaws

3.1 Company Act, 2063
3.2 Income Tax Act, 2058
3.3 Labor Act, 2074
3.4 Public Procurement Act, 2063
3.5 Bonus Act, 2030
3.6 National Information and Communication Technology Policy, 2015 (2072 BS)
3.7 National Cyber Security Policy, 2023 (2080 BS)
3.8 Right to Information Act, 2064
3.9 राष्ट्रिय वाणिज्य बैंक, कर्मचारी सेवा विनियमावली, २०७०

Section – B (50 Marks)

4 Financial Markets and Banking Operation

- 4.1 Basic Understanding of Financial Markets
- 4.2 Interest Rates Determination
- 4.3 Interest Rates Structures, Yield Curves
- 4.4 Commercial Banking Operations
  - 4.4.1 Sources and Uses of Funds by Banks
  - 4.4.2 Off-Balance Sheet Activities
  - 4.4.3 Payment, Settlement and Clearing
  - 4.4.4 International Banking

5 Organizational Management and Planning

- 5.1 Human Resource Management, Succession Planning, Knowledge Management
- 5.2 Stress Management, Conflict Management, Time Management
- 5.3 Strategic Management
- 5.4 Risk Management
- 5.5 Business Intelligence
- 5.6 Business Continuity Plan (BCP)
- 5.7 Project Appraisal, Financial Statement Analysis and Break-even Analysis
- 5.8 Sources and Uses of Funds
- 5.9 Principles and Utility of Budget

6 Organizational Behavior and Development

- 6.1 Employee Motivation
- 6.2 Performance Monitoring and Evaluation
- 6.3 Management Information System
- 6.4 Communication: Skill, Approach, Issues and Challenges
- 6.5 Decision Making: Process, Effectiveness and Efficiency
- 6.6 Managing Organizational Changes and Innovations
- 6.7 Leadership Development
- 6.8 Entrepreneurship Skills and Development
- 6.9 Emotional Intelligence, Empathy
- 6.10 Grievance Handling

Syllabus Division

Subject	Section	Marks	Unit	Question Model
Banking and Organizational Management	A	50	1	5 Questions × 10 Marks
			2	
			3	
	B	50	4	5 Questions × 10 Marks
			5	
			6	

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द्वितीय पत्र (Paper – II):
Engineering: Technology, Materials and Environment
Section – A (50 Marks)

1. Construction Materials

1.1 Stone
- 1.1.1 Characteristics
- 1.1.2 Stone formation and availability in Nepal
- 1.1.3 Stone as a building material (laying methods and construction suitability)

1.2 Cement
- 1.2.1 Cement types: ingredients, properties and manufacturing process
- 1.2.2 Storage and transport
- 1.2.3 Cement tests
- 1.2.4 Admixtures: types, advantages and disadvantages

1.3 Bricks
- 1.3.1 Brick types
- 1.3.2 Manufacturing process
- 1.3.3 Laying and bonds

1.4 Paints and Varnishes
- 1.4.1 Type and selection
- 1.4.2 Preparation techniques and uses

1.5 Aggregate: types and strength

1.6 Water quality of construction purposes

1.7 Advanced and modern construction materials
- 1.7.1 Fibre reinforced polymer: properties, types, advantages, and applications
- 1.7.2 High performance concrete: properties and applications
- 1.7.3 Geopolymer concrete: composition and eco-friendly benefits
- 1.7.4 Nanotechnology in construction materials: role, advantages, and future applications
- 1.7.5 3-D printed construction materials: emerging technologies and applications
- 1.7.6 Sustainable and eco-friendly materials: green building technologies

2. Surveying

2.1 General
- 2.1.1 Classifications
- 2.1.2 Principle of surveying
- 2.1.3 Selection of suitable method
- 2.1.4 Scales, plans and maps

2.2 Levelling
- 2.2.1 Levelling instruments
- 2.2.2 Principle of levelling
- 2.2.3 Methods of levelling

2.3 Plane Table Surveying
- 2.3.1 Instruments and accessories
- 2.3.2 Principle of levelling
- 2.3.3 Plane tabling methods and problem types (two-point and three-point problem)

2.4 Theodolite Traversing
- 2.4.1 Temporary adjustments of theodolites
- 2.4.2 Traverse and its significance
- 2.4.3 Tachometry: stadia method
- 2.4.4 Trigonometrical levelling
- 2.4.5 Computation of coordinates
- 2.4.6 Checks in closed traverse

2.5 Contouring
- 2.5.1 Features of contour lines
- 2.5.2 Contour locating methods
- 2.5.3 Plotting of contour lines

2.6 Total Stations
- 2.6.1 Principle of total station
- 2.6.2 Computation process

2.7 Setting Out
- 2.7.1 Small buildings
- 2.7.2 Simple curves and transition curves

3. Soil Mechanics

3.1 General
- 3.1.1 Soil types and classification
- 3.1.2 Three phase system of soil
- 3.1.3 Unit weight of soil mass: bulky density, saturated density, submerged density and dry density
- 3.1.4 Interrelationship between specific gravity, void ratio, porosity, degree of saturation, percentage of air voids, air content and density index

3.2 Soil Compaction and Consolidation
- 3.2.1 Factors affecting soil compaction
- 3.2.2 Optimum moisture content
- 3.2.3 Relation between dry density and moisture content
- 3.2.4 Consolidation methods

3.3 Shear Strength of Soils
- 3.3.1 Mohr-Coulomb failure theory
- 3.3.2 Cohesion and angle of internal friction

3.4 Earth Pressures
- 3.4.1 Active and passive earth pressure
- 3.4.2 Lateral earth pressure theory
- 3.4.3 Rankine's earth pressure theory

3.5 Terzaghi's general bearing capacity formulas and their application

4. Structural Analysis, Design and Drafting

4.1 Loads and supports: idealization, types and features

4.2 Types: external loads and internal loads

4.3 Internal stresses and its types

4.4 Working stress and ultimate strength of materials

4.5 Relation between the external load, shear force and bending moment

4.6 Determinate and indeterminate structures

4.7 Internal force diagram and its property: thrust, shear force and bending moment (statically determinate beams under point load/UDL/UVL)

4.8 Simple strut theory: effective slenderness and Euler's buckling

4.9 RC Section in Bending
- 4.9.1 Under reinforced, over reinforced and balanced sections
- 4.9.2 Analysis of single and double reinforced rectangular section
- 4.9.3 Analysis of one-way and two-way slab
- 4.9.4 Critical section, development length, end anchorage and rebar splicing

4.10 Shear and Bond for RC Sections
- 4.10.1 Shear resistance of RC section
- 4.10.2 Types of shear reinforcement and their design
- 4.10.3 Anchorage for shear reinforcement

4.11 Axially Loaded RC Columns
- 4.11.1 Pedestal, short and long columns
- 4.11.2 Design of RC column sections: rectangular and circular

4.12 RC Foundation
- 4.12.1 Types and their suitability
- 4.12.2 Design principles: strip, isolated, strap, combined and mat foundation

4.13 Steel Structures
- 4.13.1 Connection and its types
- 4.13.2 Standard and built-up sections
- 4.13.3 Design of rivet, bolt and welded joints
- 4.13.4 Design of steel beam and column

Section – B (50 Marks)

5. Hydropower

5.1 Hydropower in Nepal: development, policy, acts and regulations
5.2 Types of hydropower projects (Peaking Run-Off the River-Storage and Pump Storage)
5.3 Major components of hydropower project
5.4 Flow duration curve, reservoir capacity, reservoir sedimentation, useful life of reservoir
5.5 Power demand analysis and forecast
5.6 Potential and firm power, maximum power output, firm energy, surplus energy, seasonal energy, and average annual energy
5.7 Concept of load, load curve, capacity factor, load factor, and utilization factor

6. Building Construction Technology

6.1 Walls
- 6.1.1 Types of wall and their functions
- 6.1.2 Choosing wall thickness, height to length relation
- 6.1.3 Use of scaffolding
- 6.1.4 Safety measures

6.2 Concrete Technology
- 6.2.1 Constituents and properties of concrete
- 6.2.2 Water cement ratio
- 6.2.3 Grade and strength of concrete, concrete mix design, testing of concrete
- 6.2.4 Mixing, transportation, pouring and curing of concrete
- 6.2.5 Concrete admixtures
- 6.2.6 Curing

6.3 Wood Work
- 6.3.1 Frame and shutters of door and window
- 6.3.2 Timber construction of upper floors
- 6.3.3 Design and construction of stairs

6.4 Flooring and Finishing
- 6.4.1 Floor finishes: brick, concrete, flagstone
- 6.4.2 Plastering and punning

6.5 Construction and Expansion Joints: Types and Characteristics

6.6 Damp Proofing
- 6.6.1 Source of dampness
- 6.6.2 Remedial measures to pre-wet dampness

7. Estimating and Costing, Valuation and Specifications

7.1 General
- 7.1.1 Main items of work
- 7.1.2 Units of measurement and payment of various items of work and material
- 7.1.3 Standard estimate formats of government offices

7.2 Rate analysis: basic knowledge on the use of rate analysis norms approved by governments

7.3 Specifications: purpose, types and importance of specification

7.4 Valuation
- 7.4.1 Purpose, principles and methods of valuation
- 7.4.2 Expert knowledge about standard formats used by commercial banks for valuation

8. Construction Management and Professional Practices

8.1 Construction Scheduling and Planning
- 8.1.1 Network techniques (CPM, PERT)
- 8.1.2 Bar Chart

8.2 Contractual Procedure and Management
- 8.2.1 Types of contracts
- 8.2.2 Tender and tendering process
- 8.2.3 Bid security
- 8.2.4 Tender evaluation and contractor selection
- 8.2.5 Preparation of bidding document and agreement
- 8.2.6 Contract process: prequalification and post qualification
- 8.2.7 Conditions of contract
- 8.2.8 Construction supervision

8.3 Ethics and Professionalism
- 8.3.1 Code of conduct and guidelines of professional engineering practices
- 8.3.2 Relation with clients, contractor and fellow professionals

8.4 Public procurement practices of works, goods and services and its importance

8.5 Norms and code of conduct of metropolitan office

8.6 Conflict resolution and its importance in construction projects

9. Technology and Environment

9.1 Technological development in Nepal

9.2 Promotion of local technology and its adaptation

9.3 Environmental impact assessment, initial environment examination,

9.4 Government rules and regulations and procedures for IEE/EIA

9.5 Global warming phenomena

9.6 Sources of pollution: point/non-point (for air and water)

9.7 Social mobilization in local infrastructure development and utilization in nepal

9.8 Participatory approach in planning, implementation, maintenance and operation of local infrastructure

Syllabus Division

Subject	Section	Marks	Unit	Question Model
Engineering: Technology, Materials and Environment	A	50	1 to 4	3 Question ×10 Marks 1 Question ×20 Marks
	B	50	5 to 9	3 Question × 10 Marks 1 Question × 20 Marks