प्रदेश लोक सेवा आयोग, कर्णाली प्रदेश

प्रदेश निजामती सेवा अन्तर्गत विविध सेवा, अधिकृतस्तर सातौं तह, कम्प्युटर अधिकृत पदको खुला प्रतियोगितात्मक परीक्षाको पाठ्यक्रम र परीक्षा योजना

पाठ्यक्रमको रूपरेखाः- यस पाठ्यक्रम योजनालाई दुई चरणमा विभाजन गरिएको छ।

प्रथम चरणः-	**लिखित परीक्षा** (Written Examination)	**पूर्णाङ्कः- २००**
अन्तिम चरणः-	**(क) प्रयोगात्मक परीक्षा** (Practical Test)	**पूर्णाङ्कः- ५०**
	(ख) सामूहिक परीक्षण (Group Test)	**पूर्णाङ्कः- १०**
	(ग) अन्तर्वार्ता (Interview)	**पूर्णाङ्कः- ३०**

परीक्षा योजना (Examination Schedule)

१. प्रथम चरणः लिखित परीक्षा (Written Examination) पूर्णाङ्कः २००

पत्र	विषय	खण्ड	पूर्णाङ्क	उत्तीर्णाङ्क	परीक्षा प्रणाली	प्रश्नसंख्या X अङ्क	समय
प्रथम	General Subject	Part I: General Knowledge and General Ability Test	१००	४०	वस्तुगत (Objective): बहुबैकल्पिक प्रश्न (Multiple Choice Questions)	५०X१=५०	१ घण्टा ३०मिनेट
		Part II: General Technical Subject				५०X१=५०	
द्वितीय	Technical Subject		१००	४०	विषयगत (Subjective): छोटो उत्तर लामो उत्तर	८X५=४० ६X१०=६०	३ घण्टा

२. अन्तिम चरणः प्रयोगात्मक परीक्षा (Practical Test), सामूहिक परीक्षण (Group Test) र अन्तर्वार्ता (Interview) पूर्णाङ्कः ९०

पत्र/विषय	पूर्णाङ्क	उत्तीर्णाङ्क	परीक्षा प्रणाली	समय
प्रयोगात्मक परीक्षा (Practical Test)	५०	२५	प्रयोगात्मक (Practical) (५ प्रश्न ×१० अंक)	१ घन्टा ३० मिनेट
सामूहिक परीक्षण (Group Test)	१०		सामूहिक छलफल (Group Discussion)	३० मिनेट
अन्तर्वार्ता (Interview)	३०		बोर्ड अन्तर्वार्ता (Board Interview)	

द्रष्टव्यः

१. यस पाठ्यक्रमलाई प्रथम चरण र अन्तिम चरण (प्रयोगात्मक परीक्षा, सामूहिक परीक्षण र अन्तर्वार्ता) मा विभाजन गरिएको छ ।

२. खुला र समावेशी समूहको एउटै प्रश्नपत्रको माध्यमबाट परीक्षा सञ्चालन हुनेछ ।

३. लिखित परीक्षाको माध्यम भाषा नेपाली वा अंग्रेजी वा नेपाली र अंग्रेजी दुवै हुनेछ ।

४. वस्तुगत बहुवैकल्पिक (Multiple Choice) प्रश्नहरुको 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 ।

५. बहुवैकल्पिक प्रश्नहरु हुने परीक्षामा क्यालकुलेटर प्रयोग गर्न पाइने छैन ।

६. विषयगत प्रश्नहरुको हकमा तोकिएको अङ्कमा 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 टिप्पणीहरु (Short notes) सोध्न सकिनेछ ।

७. परीक्षामा सोधिने प्रश्नसंख्या, अङ्क र अङ्कभार यथासम्भव सम्बन्धित पत्र/विषयमा दिईए अनुसार हुनेछ ।

८. विषयगत प्रश्न हुने पत्र/विषयका प्रत्येक खण्डका लागि छुट्टाछुट्टै उत्तर पुस्तिकाहरु हुनेछन् । परीक्षार्थीले प्रत्येक खण्डका प्रश्नहरुको उत्तर सोही खण्डको उत्तर पुस्तिकामा लेख्नुपर्नेछ ।

९. यस पाठ्यक्रम अनुसारका पत्र/विषयका विषयवस्तुमा जुनसुकै कुरा लेखिएको भए तापनि पाठ्यक्रममा परेका कानून, ऐन, नियम तथा नीतिहरु परीक्षाको मिति भन्दा ३ महिना अगावै संशोधन भई कायम रहेका विषयवस्तुलाई यस पाठ्यक्रममा परेको सम्झनु पर्दछ ।

१०. प्रयोगात्मक परीक्षामा प्रश्नहरु निम्नानुसार हुनेछन ।

प्रयोगात्मक परीक्षाको एकाई	प्रश्नसंख्या
Operating Systems	1
Database Management System and Design	2
Programming Language	1
Networking	1

११. लिखित परीक्षाबाट छनौट भएका उम्मेदवारहरुलाई मात्र अन्तिम चरणको प्रयोगात्मक परीक्षा, सामूहिक परीक्षण र अन्तर्वार्तामा सम्मिलित गराइनेछ ।

१२. लिखित परीक्षा, प्रयोगात्मक परीक्षा, सामूहिक परीक्षण र अन्तर्वार्ताको कुल प्राप्ताङ्कको आधारमा अन्तिम परीक्षाफल प्रकाशित गरिनेछ ।

१३. पाठ्यक्रम लागू हुने मितिः २०७९।०६।२५

प्रथम पत्र (Paper I): General Subject

Part (I): - General Knowledge & General Ability Test (50 Marks)

1. General Knowledge and Contemporary Issues (25 ×1 Mark = 25 Marks)

1.1 Physical, socio-cultural and economic geography and demography of Nepal with special focus on Karnali Province

1.2 Major natural resources of Nepal

1.3 Geographical diversity, climatic conditions, and livelihood & lifestyle of people

1.4 Notable events and personalities, social, cultural and economic conditions in modern history of Nepal

1.5 Current periodic plan of Karnali Province and Nepal

1.6 Information on sustainable development, environment, pollution, climate change, biodiversity, science and technology

1.7 Nepal's international affairs and general information on the UNO, SAARC & BIMSTEC

1.8 The Constitution of Nepal

1.9 Governance system and Government (Federal, Provincial and Local)

1.10 Provisions of civil service act and regulation relating to organizational structure, posts of service, fulfillment of vacancy and code of conduct

1.11 Functional scope of public services

1.12 Public Service Charter

1.13 Concept, objective and importance of public policy

1.14 Fundamentals of management: planning, organizing, staffing, directing, controlling, coordinating, decision making, motivation and leadership

1.15 Government planning, budgeting and accounting system

1.16 Major events and current affairs of national and international importance

2. General Ability Test (25×1 Mark = 25 Marks)

2.1 Verbal Ability Test (8×1 Mark = 8 Marks)

Jumble words, Series, Analogy, Classification, Coding-Decoding, Matrix, Ranking Order Test, Direction and Distance Sense Test, Common Sense Test, Logical Reasoning, Assertion and Reason, Statement and Conclusions

2.2 Numerical Ability Test (9×1 Mark = 9 Marks)

Series, Analogy, Classification, Coding, Arithmetical reasoning/operation, Percentage, Ratio, Average, Loss& Profit, Time & Work, Data interpretation & Data verification

2.3 Non-verbal/Abstract Ability Test (8×1 Mark = 8 Marks)

Figure Series, Figure Analogy, Figure Classification, Figure Matrix, Pattern Completion/Finding, Analytical Reasoning Test, Figure Formation and Analysis, Rule Detection, Water images, Mirror images, Cubes and Dice &Venn-diagram

Part (II):- General Technical Subject (50 Marks)

1. Computer Fundamentals (5 marks)

1.1 Computers, Kinds of Computers in respect of size and function

1.2 Generation of Computers

1.3 Components and Architecture of Computers, Connecting the Components,

1.4 Getting started: Orientation to personal computers, system unit, starting the computers

1.5 I/O and Storage Devices

1.6 Processing

1.7 DOS/Windows survival guide

1.8 Type of software

1.9 Windows Explorer, E-mails, Internet, Intranet, Extranets, Ethernet, HTTP

1.10 Computer Viruses, Antivirus, Windows Defender, Worms, Malwares

2. Data Structure and Algorithms (4 Marks)

2.1 Fundamental of Data Structures, Abstract Data types

2.2 Lists, Linked Lists, Stacks

2.3 Queues, Priority Queue

2.4 Trees: Traversal, Implementations, Binary Trees, Binary Search Trees, Balanced Search Trees, AVL Trees

2.5 Indexing Methods. Hashing Trees, Suffix Trees

2.6 Worst-Case and Expected time and space Complexity

2.7 Analysis of Simple Recursive and Non-recursive Algorithms

2.8 Searching, Merging and Sorting

2.9 Introductory Notions of algorithm design: Divide-and-Conquer, Dynamic Programming, Greedy Methods, Backtracking

2.10 Graph algorithms: Depth-first Search and Breadth-first Search, Shortest Path Problems, Minimum Spanning Trees, Directed Acyclic Graphs

3. System Analysis and Design (5 Marks)

3.1 Definition of the System, System Owner, System User, System Designers and system Builders, System Analysts, Variations on the System Analyst title, System life Cycle

3.2 Joint Application Development (JAD): JAD definition, JAD purpose, JAD Philosophy, JAD Scope

3.3 Involved in a JAD: Sponsor, Business Users, System Analyst

3.4 Roles of JAD Group Member: Project Leader, Record Keeper, Time Keeper.

3.5 The System Design Environment: Development Process, Management Process, System Structure, Basic Component of Computer based Information System, Personal/Centralized/Distribution System

3.6 Concept formations: Introduction, Finding the Problem, Evaluating the Proposal, Technical Feasibility, Operational Feasibility, Economic Feasibility.

3.7 Requirements analysis: Representing System Analysis Model, Requirement Model, Design Model

3.8 Development Process: Design Method

3.9 Entity Relationship Diagram (E-R Diagram): Notations, Entities: Strong Entities, Weak Entities, Attributes: Simple and Composite, Single Valued and Multiple Valued, Null and Derived Attribute

3.10 Relationship Sets: Degree of Relationship and Cardinality Relationship, Specialization, Generalization, Aggregation

3.11 Data Flow Diagrams (DFDs): Introductions, Data flow Diagram, Symbol, Files or data store, External entities, Data flows,

3.12 Describing System by Data Flow Diagram: Context diagram, Top level DFD, Expansion Level DFD, Conversions of Data.

3.13 Object Modeling: Object-Oriented Concept, Object Structure, Object Feature, Class and Object

3.14 Representation: Association, Composition, Inheritance, Multiple Inheritances

3.15 Modeling: Use Case Diagram, State Diagram and Event Flow Diagram.

3.16 Documentation: Automatic and Manual System

4. Operating Systems **(5 Marks)**

4.1 Definition, Development and Functions of Operating Systems

4.2 Basic components of the Operating Systems, Information Storage and Management Systems

4.3 Disk Allocation and Scheduling Methods, Basic Memory Management strategies, Virtual Memory Management Techniques, Define Process and features of the Process Management System

4.4 Features of Process Scheduling; List the features of Inter-Process Communication and Deadlocks

4.5 Concepts of Parallel and Distributed Processing, Identify Security Threats to Operating Systems

4.6 Overview of the MS-DOS Operating System

4.7 Introduction to the Windows Family of Products, Unix Family of Products, Linux Family of Products

4.8 Introduction to Windows Networking

4.9 Windows Architecture, Linux Architecture

4.10 Troubleshooting Windows & Linux

4.11 Managing Network Printing

4.12 Managing Hard Disks and Partitions

4.13 Monitoring and Troubleshooting Windows

4.14 Users, Groups and Permission Linux and Windows

4.15 Memory Management in Operating System

5. Database Management System and Design (7 Marks)

5.1 Introduction to Database Model, Relational Database Model, Integrity, RDBMS

5.2 SQL and Embedded SQL

5.3 Writing Basic SQL SELECT Statements

5.4 Restricting and sorting data

5.5 Single Row Functions

5.6 Displaying Data from Multiple Tables

5.7 Aggregation Data Using Group Functions

5.8 Sub Queries, Manipulating Data and Creating & Managing Tables

5.9 Creating Views and Controlling User Access

5.10 Using Set Operators, Date time Function

5.11 Database Design: Logical Design, Conceptual Design, Mapping Conceptual to Logical, Pragmatic issues, Physical Design, Integrity and Correctness, Relational Algebra, Relational Calculus

5.12 Normalization: 1NF, 2NF, 3NF, BCNF, 4NF,5NF, DKNF

5.13 Architecture of DBMS: Client-server, Open Architectures, Transaction Processing, Multi-User & Concurrency, and Backup & Recovery Database

5.14 Basic Concept of major RDBMS products: Oracle, Sybase, DB2, SQL Server and other Databases

5.15 Roles of Database Administrator (DBA)

6. Programming Language (4 Marks)

6.1 Overview of Programming Language: History, Programming Paradigms, The role of Language translates in the Programming Process.

6.2 Fundamental Issues in Language Design.

6.3 Virtual Machines, Code Generation, Loop Optimization.

6.4 Concept of Procedural Programming, Structural Programming, Object-Oriented Programming.

6.5 Concept of C programming, C++ Programming,

6.6 Java Programming for Declaration, Modularity and Storage Management Software Development

7. Networking (5 Marks)

7.1 Basic Network Theory: Network Definition, Network Models, Connectivity, Network Addressing.

7.2 Network Connectivity: Data Package, Establishing Connection, Reliable Delivery, Network Connectivity, Noise Control, Building Codes, Connection Devices

7.3 Advanced Network Theory: OSI model, Ethernet, Network Resources, Token ring, FDDI, Wireless Networking

7.4 Common Network Protocols: Families of Protocols, NetBEUI, Bridge and Switches, TCP/IP Protocol, Building TCP/IP Network, TCP/IP Suite

7.5 TCP/IP Services: Dynamic Host Configuration Protocol, DNS Name Resolution, NetBIOS support, SNMP, TCP/IP Utilities, FTP

7.6 Network LAN Infrastructure: LAN Protocols on a Network, IP Routing, IP Routing Tables, Router Discovery Protocols, Data Movement in a Routed Network, Virtual LANs (VLANS)

7.7 Network WAN Infrastructure: WAN Environment, WAN Transmission Technologies, WAN Connectivity Devices, Voice Over Data Services

7.8 Remote Networking: Remote Networking, Remote Access protocols, VPN Technologies

7.9 Computer Security: Computer Virus, Worm, Trojan Horse

7.10 Network Security: Introduction, Virus Protection, Local Security, Network Access, Internet Security

7.11 Disaster Recovery: Need for Disaster Recovery, Disaster Recovery plan, Data backup, Fault Tolerance

7.12 Advanced Data Storage Techniques: Enterprise Data Storage, Clustering, Network Attached Storage, Storage Area Networks

7.13 Network Troubleshooting: Using Systematic Approach to Troubleshooting.

7.14 Network Support Tools: Utilities, Network Baseline

7.15 Network Access Points, Common Network Component, Common Peripheral Ports

8. Computer Architecture & Organization (2 Marks)

8.1 Evaluation of Computers, Design Methodology, Set Architecture, MIPS ISA, ALU Design

8.2 Data path Design: Single and Multiple Cycle Implementations, Pipelining, Memory Hierarchy, Input /Output System: Bus & Role of Operating System

9. Complier Design (1 Mark)

9.1 Introduction to Compiling

9.2 Logical Analysis, Syntax Analysis, Semantic Analysis

9.3 Run Time environment

9.4 Intermediate Code Generation, Code Optimization

9.5 Compiler Generation Tools

10. E-Commerce Technology (2 Marks)

10.1 Introduction to E-Commerce

10.2 Electronic Commerce Strategies

10.3 Electronic Commerce Security Issues

10.4 Success Models of E-Governance

10.5 E-Business: b2b, b2c, b2e, c2c, g2g, g2c

10.6 Principles of Electronic Payment, Strategies & Systems

10.7 E-marketing, reverse Engineering

10.8 E-Banking, EDI Methods, SWIFT

10.9 Encryption and Decryption Methods, XML, Layout Managers, Event Model

11. MIS and Web Engineering (5 Marks)

11.1 Information Systems, Client-Server Computing

11.2 Information Systems and Decision Making.

11.3 Database Design issues, Data Mining, Data Warehousing

11.4 Knowledge Management, The strategic use of Information Technology.

11.5 Work Process Redesign (Reengineering) with Information Technology, Enterprise Resources Planning Systems, Information Systems Security, Information Privacy, and Global Information Technology issues

11.6 Software Supported Demonstrations including advanced Spreadsheet topics Software Component Based Systems (CBSE)

11.7 Multimedia

11.8 Object-Oriented Programming with COMS & DECOMS

11.9 Group Decision Support Systems

11.10 Basics of Website Design

12. IT in Nepal (5 Marks)

12.1 History of IT in Nepal

12.2 IT Policy of Nepal

12.3 Electronic Transaction Act 2063

12.4 Copyright Act

12.5 Uses of Computers and Software Development

12.6 Nepali Unicode, Nepali Fonts

12.3 Licensing Issues

12.4 Concept of Copyleft

द्वितीय पत्र (Paper II): Technical Subject

Section A– 30 Marks

1. Computer Fundamentals

1.1 Computers, Kinds of Computers in respect of size and function

1.2 Generation of Computers

1.3 Components and Architecture of Computers, Connecting the Components,

1.4 Getting started: Orientation to personal computers, system unit, starting the computers

1.5 Input/Output and Storage Devices

1.6 Processing

1.7 Dos/windows survival guide

1.8 Types of software

1.9 Windows Explorer, E-mails, Internet, Intranet, Extranets, Ethernet, HTTP

1.10 Computer Viruses, Antivirus, Windows Defender

2. Data Structure and Algorithms

2.1 Fundamental of Data Structures, Abstract Data types

2.2 Lists, Linked Lists, Stacks

2.3 Queues, Priority Queue

2.4 Trees: Traversal, Implementations, Binary Trees, Binary Search Trees, Balanced Search Trees, AVL Trees

2.5 Indexing Methods, Hashing Trees, Suffix Trees

2.6 Worst-Case and Expected time and space Complexity

2.7 Analysis of Simple Recursive and Non-recursive Algorithms

2.8 Searching, Merging and Sorting

2.9 Introductory Notions of algorithm design: Divide-and-Conquer, Dynamic Programming, Greedy Methods, Backtracking

2.10 Graph algorithms: Depth-first Search and Breadth-first Search, Shortest Path Problems, Minimum Spanning Trees, Directed Acyclic Graphs

3. Programming Language

3.1 Overview of Programming Language: History, Programming Paradigms, The role of Language translates in the Programming Process.

3.2 Fundamental Issues in Language Design.

3.3 Virtual Machines, Code Generation, Loop Optimization.

3.4 Concept of Procedural Programming, Structural Programming, Object-Oriented Programming.

3.5 Concept of C programming, C++ Programming,

3.6 Java Programming for Declaration, Modularity and Storage Management Software Development

Section B– 20 Marks

4. System Analysis and Design

4.1 Definition of the System, System Owner, System User, System Designers and system Builders, System Analysts, Variations on the System Analyst title, System life Cycle

4.2 Joint Application Development (JAD): JAD definition, JAD purpose, JAD Philosophy, JAD Scope

4.3 Involved in a JAD: Sponsor, Business Users, System Analyst

4.4 Roles of JAD Group Member: Project Leader, Record Keeper, Time Keeper.

4.5 System Design Environment: Development Process, Management Process, System Structure, Basic Component of Computer based Information System, Personal/ Centralized/Distribution System

4.6 Concept formations: Introduction, Finding the Problem, Evaluating the Proposal, Technical Feasibility, Operational Feasibility, Economic Feasibility.

4.7 Requirements analysis: Representing System Analysis Model, Requirement Model, Design Model

4.8 Development Process: Design Method

4.9 Entity Relationship Diagram (E-R Diagram): Notations, Entities: Strong Entities, Weak Entities, Attributes: Simple and Composite, Single Valued and Multiple Valued, Null and Derived Attribute

4.10 Relationship Sets: Degree of Relationship and Cardinality Relationship, Specialization, Generalization, Aggregation

4.11 Data Flow Diagrams (DFDs): Introductions, Data flow Diagram, Symbol, Files or data store, External entities, Data flows

4.12 Describing System by Data Flow Diagram: Context diagram, Top level DFD, Expansion Level DFD, Conversions of Data

4.13 Object Modeling: Object-Oriented Concept, Object Structure, Object Feature, Class and Object

4.14 Representation: Association, Composition, Inheritance, Multiple Inheritances

4.15 Modeling: Use Case Diagram, State Diagram, Event Flow Diagram.

4.16 Documentation: Automatic and Manual System

Section C– 20 Marks

5. Operating Systems

5.1 Definition, Development and Functions of Operating Systems

5.2 Basic components of the Operating Systems, Information Storage and Management Systems

5.3 Disk Allocation and Scheduling Methods, Basic Memory Management strategies, Virtual Memory Management Techniques, Define Process and features of the Process Management System

5.4 Features of Process Scheduling; List the features of Inter-Process Communication and Deadlocks

5.5 Concepts of Parallel and Distributed Processing, Identify Security Threats to Operating Systems

5.6 Overview of the MS-DOS Operating System

5.7 Introduction to the Windows Family of Products, Unix Family of Products, Linux Family of Products

5.8 Introduction to Windows Networking

5.9 Windows Architecture, Linux Architecture

5.10 Troubleshooting Windows & Linux

5.11 Managing Network Printing

5.12 Managing Hard Disks and Partitions

5.13 Monitoring and Troubleshooting Windows

5.14 Users, Groups and Permission Linux and Windows

5.15 Memory management in Operating System

6. Database Management System and Design

6.1 Introduction to Database Model, Relational Database Model, Integrity, RDBMS

6.2 SQL and Embedded SQL

6.3 Writing Basic SQL SELECT Statements

6.4 Restricting and sorting data

6.5 Single Row Functions

6.6 Displaying Data from Multiple Tables

6.7 Aggregation Data Using Group Functions

6.8 Sub Queries, Manipulating Data and Creating & Managing Tables

6.9 Creating Views and Controlling User Access

6.10 Using Set Operators, Date time Function

6.11 Database Design: Logical Design, Conceptual Design, Mapping Conceptual to Logical, Pragmatic issues, Physical Design, Integrity and Correctness, Relational Algebra, Relational Calculus

6.12 Normalization: 1NF, 2NF, 3NF, BCNF, 4NF, 5NF, DKNF

6.13 Architecture of DBMS: Client-server, Open Architectures, Transaction Processing, Multi-User & Concurrency, and Backup & Recovery Database

6.14 Basic Concept of major RDBMS products: Oracle, Sybase, DB2, SQL Server and other Databases

6.15 Database Administrator

Section D– 30 Marks

7. Networking

7.1 Basic Network Theory: Network Definition, Network Models, Connectivity, Network Addressing.

7.2 Network Connectivity: Data Package, Establishing Connection, Reliable Delivery, Network Connectivity, Noise Control, Building Codes, Connection Devices

7.3 Advanced Network Theory: OSI model, Ethernet, Network Resources, Token ring, FDDI, Wireless Networking

7.4 Common Network Protocols: Families of Protocols, NetBEUI, Bridge and Switches, TCP/IP Protocol, Building TCP/IP Network, TCP/IP Suite

7.5 TCP/IP Services: Dynamic Host Configuration Protocol, DNS Name Resolution, NetBIOS support, SNMP, TCP/IP Utilities, FTP

7.6 Network LAN Infrastructure: LAN Protocols on a Network, IP Routing, IP Routing Tables, Router Discovery Protocols, Data Movement in a Routed Network, Virtual LANs (VLANS)

7.7 Network WAN Infrastructure: WAN Environment, WAN Transmission Technologies, WAN Connectivity Devices, Voice Over Data Services

7.8 Remote Networking: Remote Networking, Remote Access protocols, VPN Technologies

7.9 Computer Security: Computer Virus, Worm, Trojan Horse

7.10 Network Security: Introduction, Virus Protection, Local Security, Network Access, Internet Security

7.11 Disaster Recovery: Need for Disaster Recovery, Disaster Recovery plan, Data backup, Fault Tolerance

7.12 Advanced Data Storage Techniques: Enterprise Data Storage, Clustering, Network Attached Storage, Storage Area Networks

7.13 Network Troubleshooting: Using Systematic Approach to Troubleshooting.

7.14 Network Support Tools: Utilities, Network Baseline

7.15 Network Access Points, Common Network Component, Common Peripheral Ports

8. Computer Architecture & Organization

8.1 Evaluation of Computers, Design Methodology, Set Architecture, MIPS ISA, ALU Design

8.2 Data path Design: Single and Multiple Cycle Implementations, Pipelining, Memory Hierarchy, Input /Output System: Bus & Role of Operating System

9. Complier Design

9.1 Introduction to Compiling

9.2 Logical Analysis, Syntax Analysis, Semantic Analysis

9.3 Run Time environment

9.4 Intermediate Code Generation, Code Optimization

9.5 Compiler Generation Tools

9.6 Context Free Grammar

10. E-Commerce Technology

10.1 Introduction to E-Commerce

10.2 Electronic Commerce Strategies

10.3 Electronic Commerce Security Issues

10.4 Success Models of E-Governance

10.5 E-Business: b2b, b2c, b2e, c2c, g2g, g2c

10.6 Principles of Electronic Payment, Strategies & Systems

10.7 E-marketing, Reverse Engineering

10.8 E-Banking, EDI Methods, SWIFT

10.9 Encryption and Decryption Methods, XML, Layout Managers, Event Model

11. MIS and Web Engineering

11.1 Information Systems, Client-Server Computing

11.2 Information Systems and Decision Making.

11.3 Database Design issues, Data Mining, Data Warehousing

11.4 Knowledge Management, The strategic use of Information Technology.

11.5 Work Process Redesign (Reengineering) with Information Technology, Enterprise Resources Planning Systems, Information Systems Security, Information Privacy and Global Information Technology issues

11.6 Software Supported Demonstrations including advanced Spreadsheet topics Software Component Based Systems (CBSE)

11.7 Multimedia

11.8 Object-Oriented Programming with COMS & DECOMS

11.9 Group Decision Support Systems

11.10 Basics of Website Design

12. IT in Nepal

12.1 History of IT in Nepal

12.2 IT Policy of Nepal

12.3 Electronic Transaction Act

12.4 Copyright Act

12.5 Uses of Computers and Software Development

12.6 Nepali Unicode, Nepali Fonts

12.3 Licensing Issues

12.4 Concept of Copyleft

सामूहिक परीक्षण

सामुहिक परीक्षण व्यक्तित्व परीक्षणको एक अंश हो । प्रदेश निजामती सेवाको क्षेत्र विस्तार तथा कार्य पद्धति परिवर्तन समेत भैरहेको सन्दर्भमा नेपाल सरकारका नीति, योजना, कार्यक्रम लगायत शासन व्यवस्था सम्वन्धी समसामयिक विषय माथि विचार– विमर्श, छलफल गरी तिनको अझै बढी प्रभावकारी तथा कार्यान्वयन योग्य समाधान पहिल्याउने सम्बन्धमा उम्मेदवारहरुको क्षमता पहिचान गर्नु यस परीक्षणको मूलमर्म हो । यसको लागि छलफल, विचार– विमर्श गरी परिस्थिति बुझ्न सक्ने, निर्णय दिने, जनतालाई क्रियाशील बनाउने, चित्त बुझाउने, निर्धारित लक्ष्य अनुसार काम गर्ने/गराउने, जस्ता कामका लागि लेखन क्षमताका साथसाथै समस्यालाई यथार्थपरक ढंगले पहिचान गर्नसक्ने, वाकपटुता, शिष्टता, तर्कशक्तिको पनि आवश्यकता पर्दछ ।

त्यसैले यस परीक्षणमा उम्मेदवारहरुको वौद्धिक क्षमता, संचार सीप, समूह गतिशिलता, व्यवहार, व्यक्तित्व, मनोवृति, क्रियाशीलता, निर्णयशक्ति, समस्या समाधान क्षमता, नेतृत्व क्षमता, समय व्यवस्थापन तथा व्यक्तित्वमा भएका अन्य गुणहरुको आँकलन अर्थात परीक्षण र मूल्याङ्कन गर्नको लागि उम्मेदवारहरुलाई कुनै समसामयिक विषय/सवाल/समस्यामा सामूहिक छलफल गरी समस्या समाधान केन्द्रीत प्रभावकारी र कार्यान्वयन योग्य समाधान निकाल्न दिइन्छ ।

सामूहिक छलफल

यस प्रयोजनको लागि गरिने परीक्षण १० पूर्णाङ्क र ३० मिनेट अवधिको हुनेछ जुन नेताविहिन सामूहिक छलफलको रुपमा अवलम्वन गरिनेछ । दिइएको प्रश्न वा Topic का विषयमा पालैपालोसँग निर्दिष्ट समयभित्र समूहवीच छलफल गर्दै प्रत्येक उम्मेदवारले व्यक्तिगत प्रस्तुति गर्नुपर्नेछ । यस परीक्षणमा मूल्याङ्कनको लागि देहाय अनुसारको ३ जना भन्दा बढीको समिति रहनेछ ।

आयोगका अध्यक्ष वा अध्यक्षले तोकेको सदस्य	– अध्यक्ष
आयोगका सदस्य	– सदस्य
मनोविज्ञानवेत्ता	– सदस्य
दक्ष/विज्ञ (१ जना)	– सदस्य