दक्षीणकाली नगरपालिका

सूचना प्रविधि अधिकृत पदको प्रयोगात्मक परीक्षाको लागि पाठ्यक्रम

सूचना प्रविधि अधिकृत पद प्रयोगात्मक परीक्षाको पाठ्यक्रम

विषय	पूर्णाङ्क	उतीर्णाङ्क	परीक्षा प्रणाली	समय
प्रयोगात्मक परीक्षा	५०	२५	प्रयोगात्मक (Practical) (५ प्रश्न * १० अंक)	१ घण्टा ३० मिनेट

प्रयोगात्मक परीक्षाको प्रश्न संख्या निम्नानुसार हुनेछन्।

एकाई (chapter)	1	2	3	4
प्रश्न संख्या	1	1	1	2

1. Operating Systems

1.1. Basic components of the Operating Systems, Understand Information Storage and Management Systems,

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

1.3. Features of Process Scheduling; Features of Inter-Process Communication and Deadlocks,

1.4. Concepts of Parallel and Distributed Processing, Security Threats to Operating Systems,

1.5. Overview of the MS-DOS Operating System,

1.6. Introduction to the Windows Family of Products, Unix Family of Products, Linux Family of Products,

1.7. Introduction to Windows Networking,

1.8. Windows Architecture, Linux Architecture,

1.9. Troubleshooting Windows, & Linux,

1.10. Managing Network Printing,

1.11. Managing Hard Disks and Partitions,

1.12. Monitoring and Troubleshooting Windows,

1.13. Users, Groups, and Permission Linux and Windows.

2. Database Management System and Design

2.1. Database Model, Relational Database Model, Integrity, RDBMS,

2.2. SQL and Embedded SQL ,

2.3. Writing Basic SQL SELECT Statements,

2.4. Restricting and Sorting data,

2.5. Single Row Functions,

2.6. Displaying Data from Multiple Tables,

2.7. Aggregation Data Using Group Functions,

2.8. Sub Queries, Manipulating Data and Creating & Managing Tables,

2.9. Creating Views and Controlling User Access,

2.10. Using Set Operators, Date-time Function,

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

2.12. Normalization: 1NF, 2NF, 3NF, BCNF, 4NF,5NF, DKNF,

2.13. Architecture of DBMS: Client-server, Open Architectures, Transaction Processing, Multi-User and concurrency, and Backup & Recovery Database,

2.14. Basic Concept of major RDMS products: Oracle, Sybase, DB2, SQL Server and other Databases.

3. Programming Language

3.1. Overview of Programming Language,

3.2. Fundamental Issues in Language Design,

3.3. Virtual Machines, Code Generation, Loop Optimization,

3.4. Concepts 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,

3.7. Basic Concept of Webpage Designing and Server side scripting.

4. Networking

4.1. Basic Network Theory: Network Models, Connectivity, Network Addressing,

4.2. Network Connectivity: The Data Package, Establishing a Connection, Reliable Delivery, Network Connectivity, Noise Control, Building Codes, Connection Devices,

4.3. Advanced Network Theory: The OSI model, Ethernet, Network Resources, Token ring, FDDI, Wireless Networking,

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

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

4.6. 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),

4.7. Network WAN Infrastructure: WAN Environment, Wan Transmission Technologies, Wan Connectivity Devices, Voice Over Data Services,

4.8. Remote Networking: Remote Networking, Remote Access protocols, VPN Technologies,

4.9. Computer Security: Computer Virus, Worm, Trojan Horse,

4.10. Network Security: Introduction, Virus Protection, Local Security, Network Access, Internet Security,

4.11. Disaster Recovery: Need for Disaster Recovery, Disaster Recovery plan, Data backup, Fault Tolerance,

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

4.13. Network Troubleshooting: Using a Systematic Approach to Troubleshooting,

4.14. Network Access Points (NAP), Common Network Component, Common Peripheral Ports.