नेपाल सरकार
शिक्षक सेवा आयोग
माध्यमिक शिक्षकको खुला प्रतियोगितात्मक परीक्षाको पाठ्यक्रम, २०७५

खण्ड (ख) : विषय : कम्प्युटर विज्ञान **अङ्क - ६०**

1 Fundamentals of Computer

1.1 *Introduction, characteristics, types and application of computer*
1.2 *Components and architecture of computers : I/O devices, CPU, storage devices*
1.3 *Disk operating system (DOS) : Basic internal and external commands*
1.4 *MS windows operating system : Desktop, file and folder management, control panel, device drivers and utilities, task manager*
1.5 *Computer security : Computer virus, worm, trojan horse, malware, antivirus and its use*

2 Operating system

2.1 *Definition, types and functions of operating system*
2.2 *Basic components of operating system*
2.3 *Allocation of resources*
2.4 *CPU scheduling concept*
2.5 *Disk allocation and scheduling methods*
2.6 *Memory management*
2.7 *Process management system*

3 Internet and World Wide Web

3.1 *Introduction of WWW, Internet Protocols, URL and internet addressing*
3.2 *WWW, Websites and webpage, web browsers, web searching*
3.3 *Introduction to Email*
3.4 *Introduction to HTML*
  3.4.1 HTML document
  3.4.2 HTML tags
  3.4.3 Working with text, hyperlinks, Images, lists, forms, tables, frames
  3.4.4 Familiarity with cascading style sheet and script

4 Number System and Digital Logic

4.1 *Decimal, binary, octal, hexadecimal number system and conversion*
4.2 *Logic functions and Boolean Algebra*
4.3 *Digital logic*
4.4 *Simple features using Boolean Algebra*

4.5 *Introductions of truth tables, operators & operands*

4.6 *Logic gates : AND, OR, NOT, NAND, NOR, XOR and XNOR - its definition, use, truth table logic symbols*

5 Database management

5.1 *Introduction*

5.2 *Types of DBMS, hierarchal model, network model, relational database model, object oriented model*

5.3 *Relational languages : SQL, DDL, DML and QBE*

5.4 *Basic SQL operations*

- 5.4.1 Common data types
- 5.4.2 Writing basic SQL SELECT statements
- 5.4.3 Restricting and sorting data
- 5.4.4 Single row function
- 5.4.5 Displaying data from multiple table
- 5.4.6 Aggregating data using group functions
- 5.4.7 Sub-queries, manipulating data, creating and managing tables
- 5.4.8 Creating views and controlling user access.

6 Programming Language

6.1 *Overview of programming language : History, programming paradigms, virtual machines, complier, interpreters, algorithm development, flowchart and pseudocodes*

6.2 *Concept of procedural programming, structural programming, object-oriented programming*

6.3 *C-programming language*

- 6.3.1 Data types in C
- 6.3.2 Variables and constants
- 6.3.3 Simple statement and compound statements
- 6.3.4 Logical and conditional expressions
- 6.3.5 Arrays types and definitions
- 6.3.6 Functions
- 6.3.7 Structures and unions
- 6.3.8 Pointers
- 6.3.9 Error and debugging.

7 Networking

7.1 *Basics of computer networking : Definition and network models*

7.2 *Network architecture and topologies*

- 7.2.1 Definition and use

7.2.2 Types of architecture : LAN, MAN and WAN

7.2.3 Types of topologies : Star, ring, tree, mesh and hybrid

7.3 *Network media types and devices : Twisted-pair cable, coaxial cable, optical fibre, wireless communication, bridge, switches and router*

7.4 *Network servers and protocols : HTTP, DHCP, SMTP, DNS, FTP, POP and IMAP*

7.5 *Network security : Introduction, virus protection, local security, network access, internet security*

7.6 *Disaster recovery : The need for disaster recovery, disaster recovery plan, data backup and fault tolerance*

विषयगत परीक्षाको प्रश्न योजना (Specification Grid)

Unit	Scope of Curriculum	Contentwise question weight	Full Marks
1.	Fundamentals of Computer	10 *1	10
2.	Operating system	10 *1	10
3.	Internet and World Wide Web	10 *1	10
4.	Number System and Digital Logic		
5.	Database management	10 *1	10
6.	Programming Language	10 *1	10
7.	Networking	10 *1	10
	Total	**10*6**	**60**