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| **kq** | **ljifo** | **k"0ff{Í** | **pQL0ffÍ** | **k/LIff k|0ffnL** | **k|Zg ;+Vof x c+sef/** | **;do** |
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| **ljifo** | **k"0ff{Í** | **pQL0ffÍ** | **k/LIff k|0ffnL** | **;do** |
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| **Course Unit** | **Topics** | **No. of Objective Questions** | **No of Subjective Question** |
| 1 | Computer Fundamental | 10 | 1 |
| 2 | Operating System | 10 | 1 |
| 3 | Networking | 5 | 1 |
| 4 | E-commerce Technology | 5 |
| 5 | MIS and Web Engineering | 5 |
| 6 | Word Processing | 3 |
| 7 | Electronic Spreadsheets | 3 |
| 8 | Database System | 3 | 1 |
| 9 | Presentation system | 3 |
| 10 | IT in Nepal | 3 | 1 |
| 11 | Adobe In design | 5 |
| 12 | Graphic Design | 5 |
|  | Total: | **60** | **5** |

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| S.No | Topics | No. of Question | Marks | Time-Minutes |
| 1 | Hardware Setup | 3 | 15 | 10 |
| 2 | Operating System Setup | 1 | 15 | 10 |
| 3 | Printer Sharing/ File Sharing/ Quata Management/ Unicode setup/ User Management | 3 | 45 | 20 |
| 4 | Computer Networking (IP Addressing/ Router Configuration) | 2 | 20 | 10 |
| 5 | Computer Backup and Restore Using Team Viewer | 1 | 5 | 10 |
|  | Total:- | 10 | 100 | 60 |

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1. **Computer Fundamentals** 
   1. Computers, Kinds of Computers in respect of size and function
   2. Generation of Computers
   3. Components and Architecture of Computers, Connecting the Components,
   4. Getting started: Orientation to computers, system unit, Starting the computers
   5. Software: Definition
      1. Types of Software
      2. Programming Language (Visual Basic Programming Language, "C" Programmin g Language).
      3. Application software: Using Application Software
   6. Hardware: Definition
      1. Input Devices: The keyboard, The mouse, Other input devices
      2. Processing: CPU, Memory
      3. Storages devices: Overview of Storage Devices, The Floppy Disk Drive, The Hard Drive, The Universal Serial Bus(USB) Devices and Other Storage Devices
      4. Partition of HDD
      5. Output devices: Monitors, Printers, Modems, Soundboards
      6. Liveware, Firware and Cache Memory
   7. Dos survival guide: Using Command Prompt, Creating and using AUTOEXEC.BAT and CONFIG.SYS
   8. Windows survival guide: The Windows Desktop, The Program Manager, Organizing the Desktop, The File Manager
   9. Dial-Up Networking, ADSL, DSL, Router, Switch
   10. Windows Explorer, E-mails, Internet, Intranet, Extranets, Ethernet, HTTP
   11. Concept of Computer related threats (Virus, Worms, Trojan, Phishing etc) remedies and protection
   12. Concept of Multimedia
   13. File Management basic :
       1. Physical Structure of the disk
       2. Concept of File and folder
       3. Wildcards and Pathname
       4. Types of files and file extensions
2. **Operating Systems** 
   1. Define an Operating System, Trace the Developments in Operating Systems, Identify the functions of Operating Systems,
   2. Describe the basic components of the Operating Systems, Understand Information Storage and Management Systems,
   3. List Disk Allocation and Scheduling Methods, Identify the Basic Memory Management strategies, List the Virtual Memory Management Techniques, Define a Process and list the features of the Process Management System
   4. Identify the Features of Process Scheduling; List the features of Inter-Process Communication and Deadlocks,
   5. Identify the Concepts of Parallel and Distributed Processing, Identify Security Threats to Operating Systems
   6. Overview of the MS-DOS Operating System
   7. Introduction to the Windows Family of Products,
   8. Introduction to Windows Networking
   9. Windows Architecture
   10. Troubleshooting Windows,
   11. Managing Network Printing
   12. Managing Hard Disks and Partitions
   13. Monitoring and Troubleshooting Windows
   14. Users, Groups and Permission Linux and Windows.
3. **Networking** 
   1. Basic Network Theory: Network Definition, Network Models, Connectivity, Network Addressing.
   2. Network Connectivity: Data Package, Establishing a Connection, Reliable Delivery, Network Connectivity, Noise Control, Building Codes, Connection Devices.
   3. Advanced Network Theory: The OSI model, Ethernet, Network Resources, Token ring, FDDI, Wireless Networking.
   4. Common Network Protocols: Families of Protocols, NetBEUI, Bridge and Switches,The TCP/IP Protocol, Building TCP/IP Network, The TCP/IP Suite
   5. TCP/IP Services: Dynamic Host Configuration Protocol, DNS Name Resolution, NetBIOS support, SNMP, TCP/IP Utilities, FTP
   6. Network LAN Infrastructure: LAN Protocols on a Network, IP Routing, IP Routing
   7. Tables, Router Discovery Protocols, Data Movement in a Routed Network, Virtual LANs(VLANS)
   8. Network WAN Infrastructure: The WAN Environment, Wan Transmission Technologies, Wan Connectivity Devices, Voice Over Data Services
   9. Remote Networking: Remote Networking, Remote Access protocols, VPN Technologies.
   10. Computer Security: Computer Virus, Worm, Trojan Horse.
   11. Network Security: Introduction, Virus Protection, Local Security, Network Access, Internet Security.
   12. Disaster Recovery: The need for Disaster Recovery, Disaster Recovery plan, Data backup, Fault Tolerance.
   13. Advanced Data Storage Techniques: Enterprise Data Storage, Clustering, Network Attached Storage, Storage Area Networks.
   14. Network Troubleshooting: Using Systematic Approach to Troubleshooting.
   15. Network Support Tools: Utilities, Network Baseline, Network Access Points (NAP), Common Network Component, Common Peripheral Ports.
4. **E-Commerce Technology** 
   1. Introduction to E-Commerce.
   2. Electronic Commerce Strategies.
   3. Electronic Commerce Security Issues.
   4. Success Models of E-Governance.
   5. E-Business: b2b, b2c, b2e, c2c, g2g, g2c.
   6. Principles of Electronic Payment, Strategies & Systems.
   7. E-marketing, Reverse Engineering.
   8. E-Banking, EDI Methods, SWIFT.
   9. Encryption and Decryption Methods, XML, Layout Managers, Event Model.
5. **MIS and Web Engineering** 
   1. Information Systems, Client-Server Computing.
   2. Information Systems and Decision Making.
   3. Database Design issues, Data Mining, Data Warehousing
   4. Knowledge Management, The strategic use of Information Technology.
   5. Work Process Redesign (Reengineering) with Information Technology, Enterprise
   6. Resources Planning Systems, Information Systems Security, Information Privacy, Global Information Technology issues.
   7. Software Supported Demonstrations including advanced Spreadsheet topics, Software
   8. Component Based Systems (CBSE)
   9. Multimedia
   10. Object-Oriented Programming with COMS & DECOMS,
   11. Group Decision Support Systems
   12. Basics of Website Design.
6. **Word Processing**
   1. Concept of Word Processing
   2. Types of Word Processing
   3. Introduction to Word Processor
   4. Creating, Saving and Opening the documents
   5. Elements of Word Processing Environment (Menu, Toolbars, Status bar, Rulers)
   6. Copying, Moving, Deleting and Formatting Text (Font, Size, Color, Alignment, Line & Paragraph spacing)
   7. Finding and Replacing text familiar with Devnagari Fonts
   8. Creating lists with Bullets and Numbering
   9. Creating and Manipulating Tables
   10. Borders and Shading
   11. Use of Indentation and Tab Setting
   12. Creating Newspaper Style Documents using Column
   13. Inserting Header, Footer, Footnotes, Endnotes, Page Numbers, File, Page break, Section break, Graphics, Pictures, Charts, Symbols & Organizational Chart
   14. Opening and Saving different types of document
   15. Changing Default Settings
   16. Mail Merge
   17. Autocorrect, Spelling, and Grammar Checking and Thesaurus
   18. Customizing menu and toolbars
   19. Security technique of documents
   20. Master Document, Cross Reference, Index, Table of Content
   21. Setting Page Layout, Previewing and Printing Documents
7. **Electronic Spreadsheet**
   1. Concept of Electronic Spreadsheet
   2. Types of Electronic Spreadsheet
   3. Organization of Electronic Spreadsheet application ( Cells, Rows, Columns, Worksheet, Workbook, and Workspace)
   4. Introduction to Spreadsheet Application
   5. Creating, Opening and Saving Work Book
   6. Elements of Electronic Spreadsheet Environment (Menu, Toolbars, Status bar, Rulers, Scrollbars, etc)
   7. Editing, Copying, Moving, Deleting Cell contents
   8. Familiar with Devnagari Fonts
   9. Formatting Cells (Font, Border, Pattern, Alignment, Number and Protection)
   10. Formatting Rows, Columns, and Sheets
   11. Using Formula- Relative Cell and Absolute Cell Reference
   12. Using basic functions
   13. Generating Series
   14. Changing default options
   15. Sorting and Filtering data
   16. Summarizing data with Sub-Totals
   17. Creating chart
   18. Inserting Header and Footer
   19. Spell Checking
   20. Customizing Menu and Toolbars
   21. Importing from and Exporting into other formats
   22. Pivot Table, Goal Seek, Scenario & Audit
   23. Page Setting, Previewing and Printing
8. **Database System**
   1. Introduction to Data, Database and DBMS
   2. Basic Concept of Tables, Fields, Records, Relationships and Indexing
   3. Introduction to database application
   4. Data Types
   5. Creating, Modifying & Deleting Tables and Formatting & Validating Field Data
   6. Creating, Modifying, Deleting & Using Simple Queries
   7. Creating, Modifying & Deleting Forms/Reports/Macros
9. **Presentation System**
   1. Introduction to Presentation Application
   2. Creating, Opening & Saving Slides, Formatting Slides
   3. Slide Show
   4. Animation
   5. Inserting Built-in-picture, Picture, Table, Chart, Graphs, Organizational Chart
10. **IT in Nepal** 
    1. History of IT in Nepal
    2. Current IT Policy of Nepal
    3. Electronic Transaction Act, 2063
    4. Copyright Act, 2059
    5. Uses of Computers and Software Development
    6. Nepali Unicode, Nepali Fonts
    7. Licensing Issue
11. **Abode In Design**
    1. Introduction to Adobe In Design CS6
    2. Creating and Viewing Documents
    3. Understanding Your Workspace
    4. Pages
    5. Working with Type
    6. Working with Graphics
    7. Formatting Objects
    8. Working with Color
    9. Points and Paths
    10. Managing and Transforming Objects
    11. Character and Paragraph Formatting
    12. Using Styles
    13. Tables
    14. Long and Interactive Documents
    15. Packaging and Printing

12. **Graphic Design**

* 1. The Principle of Graphic Design
  2. Theory of Design
  3. Colour and Materials
  4. How to use of typography
  5. History of Graphic Design