SYLLABUS FOR COMPUTER OPERATOR EXAMINATION UNDER SECRECTARIAT ADMINSTRATION DEPARTMENT-2016

GENERAL ENGLISH

(Full Marks : 100)

(a) Essay Writing (Conventional)..... 20 Marks
(b) Idioms & Phrases (Objective Type)..... 16 Marks
(c) Comprehension of given passages (Objective Type)..... 16 Marks
(d) Grammar (Objective Type) ..... 16 Marks
Parts of Speech : Nouns, Adjective, Verb, Adverb, Preposition, etc.
(e) Composition (Objective Type)..... 16 Marks
i) Analysis of complex and compound sentences
ii) Transformation of sentences
iii) Synthesis of sentences
(f) Correct usage and vocabularies (Objective Type) ..... 16 Marks

TECHNICAL PAPER – I (150 MARKS)

Unit – I Fundamentals of Computer .....64 Marks
Unit – II Operating Systems .....24 Marks
Unit– III Word Processing.....24 Marks
Unit– IV Electronic Spreadsheet.....24 Marks
Unit– V Presentation Software .....14 Marks

TECHNICAL PAPER – II (150 MARKS)

Unit – I Computer Networking .....16 Marks
Unit – II Database Management System.....50 Marks
Unit– III Web Development using HTML .....50 Marks
Unit- IV Business Communication skills.....14 Marks
Unit- V Aptitude Test .....20 Marks

PAPER-I (Full Mark – 150)

UNIT-I FUNDAMENTALS OF COMPUTER (64 Marks)

1. INTRODUCTION

What is a Computer (Analog Computers, Digital Computers), Characteristics of Computers, The Evolution of Computers, Computer Generations [First Generation (1942-1955), Second Generation (1955-1964), Third Generation (1964-1975), Fourth Generation (1975-1989), Fifth Generation (1989-Present)].

2. BASIC COMPUTER ORGANIZATION

Input Unit, Output Unit, Storage Unit, Arithmetic Logic Unit, Control Unit, Central Processing Unit, The System Concept.

3. PROCESSOR AND MEMORY

Central Processing Unit (Control Unit, Arithmetic Logic Unit, Instruction Set, Registers, Processor Speed, Types of Processors), Main Memory (Storage Evaluation Criteria, Main Memory Organization, Main Memory Capacity, Types of Memory Chips, Cache Memory).

4. SECONDARY STORAGE DEVICES

Sequential and Direct-Access Devices, Magnetic Tapes, Magnetic Disks, Optical Disks, Memory Storage Devices - Flash Memory : Flash Drive/Pen Drive & Memory Card, Data Backup, On-line, Near-line, and Off-line Storage, Hierarchical Storage System (HSS), Flash Memory.

5. INPUT-OUTPUT DEVICES

Input Devices (Keyboard Devices, Point-and-Draw Devices, Data Scanning Devices, Digitizer, Electronic-card Reader, Speech Recognition Devices, Vision-Input System), Output Devices (Monitors, Printers, Plotters, Screen Image Projector, Voice Response Systems).

6. COMPUTER SOFTWARE

What is Software, Relationship between Hardware and Software, Types of Software (System Software, Application Software), Logical System Architecture, Firmware, Middleware, Acquiring Software (Buying Pre-written Software, Ordering Customized Software, Developing Customized Software, Downloading Public-domain Software), Software Development Life Cycle (SDLC), Software Engineering (What is Software Engineering, Need for Software Engineering, Goals of Software Engineering, Principles of Software Engineering, CASE Tools).

7. COMPUTER LANGUAGES

Machine Language, Assembly Language, High-Level Language, Object-Oriented Languages, Some High-Level Languages (FORTRAN, COBOL, BASIC, PASCAL, C and C++), Some More High-Level Languages (Java, C#, RPG, LISP, SNOBOL), Characteristics of a Good Programming Language, Slecting a Luanguage for Coding an Application, Subprogram.

8. CLASSIFICATION OF COMPUTERS

Notebook Computers (Laptops), Personal Computers (PCs), Workstations, Mainframe Systems, Supercomputers, Client and Server Computers, Handheld Computers (Tablet PC, PDA/Pocket PC, Smartphone)

9. INFORMATION TECHNOLOGY AND SOCIETY

Indian Information Technology (IT) Act, The Information Technology (Amendment Bill), Intellectual Property Rights (IPR) Issues, Information Technology Applications in Air Lines and Railway Ticket Reservation, Computer in Banks, Inventory Control, Financial System, Hotel Management, Computers in Education, Video Games, Telephone Exchanges, Mobile Phones, Information Kiosks, Special Effects in Movies.

UNIT-II OPERATING SYSTEMS (24 Marks)

1. INTRODUCTION

What is an Operating System, Main Functions of an Operating System.

2. MICROSOFT WINDOWS

An Overview of Different Versions of Windows, Main Features of Windows Operating System.

3. BASIC ELEMENTS OF OPENING SCREEN OF WINDOWS

The Desktop, Icons and their Types, The Taskbar, Elements of a Window.

4. FILE MANAGEMENT IN WINDOWS

File, Folder, Folder Tree, Selecting Files and Folders, Creating Files and Folders, Naming and Renaming Files and Folders.

5. WINDOWS START MENU

All Programs, My Recent Documents, Control Panel, Printers and Faxes, Help and Support, Search, Run, Log Off, Turn off Computer.

6. WINDOWS SHORTCUTS

Creating a Shortcut, Renaming a Shortcut, Deleting a Shortcut.

7. ESSENTIALS WINDOWS ACCESSORIES

System Tools, Entertainment, Calculator, Notepad, Paint, WordPad.

8. COMMAND PROMPT AND MS-DOS COMMANDS

The DIR Command, MD, RD, REN, ATTRIB, TREE, PATH.

UNIT-III WORD PROCESSING (24 Marks)

1. An Introduction

Introduction, The Word Screen, Creating documents, Editing documents, Printing documents, Quiting documents

2. Formatting a Document

Text style, Changing the font type and size, Alignment of text, Formatting paragraphs with line of paragraphs with line of paragraph spacing, Adding headers, footers and page numbers

3. Using AutoCorrect
Introduction to AutoCorrect, Using AutoCorrect

4. Proofing a Document with Spell and Grammer Check
Spell and grammer check the entire document, Readability statistics, Using the thesaurus, Using word count

5. Finding and Replacing Text
Replacing occurances of text, Finding and replacing formatting

6. Improving the Look of a Document
Adding borders and shading, Bullets and numbering, page setting, Format painter, Inserting symbols, Using supersript and subscript

7. Inserting Graphics
Inserting a graphic, Inserting WordArt

8. Inserting Table
Understanding tables, Table AutoFormat

9. Mail Merge
The basic concept of merging documents, Working with master documents, Merging documents

UNIT-IV ELECTRONIC SPREADSHEET (24 Marks)

1. Introduction to Spreadsheets
Getting Started, The worksheet, saving the worksheet, closing a worksheet, exiting Excel

2. Using Formulas in Excel
Opening a worksheet, entering formula, copying formula, some more calculations using formula, concept of worksheets and workbook

3. Understanding Cell Referencing in Excel
Relative referencing, Absolute referencing, Mixed referencing

4. Editing a Worksheet, Formatting and Printing a Worksheet
Formatting a worksheet, printing a worksheet

5. Use of Simple Statistical Functions
Statistical functions, Adjusting the worksheet size, Conditional function

6. What-if Analaysis and Data Tables in Excel
What-if analysis, Data tables, Creating a one-variable data table, Creating a two-variable data table

7. Working with Graphs and Charts
Creating charts using ChartWizard, Sizing and moving charts, Updating charts, changing the chart type, previewing and printing charts

UNIT-V PRESENTATION SOFTWARE (14 Marks)

Introduction to Powerpoint
An introduction to presentation graphics, Basic elements of a slide, Different types of slide layouts, Getting stated, Creating a presentation

Different Views of a Presentation
Opening an existing presentation, Switching views

Editing a Presentation
Adding slides, Deleting slides, Rearranging slides, Changing the presentation design, Changing slide layouts, Printing a presentation

Adding Special Effects in a presentation
Inserting pictures from files, Animating slides, Adding sound effects, Setting slide timings, Rehearse timings, Grouping and ungrouping pictures

PAPER-II (Full Mark – 150)

UNIT-I COMPUTER NETWORKING (16 Marks)

1. NETWORKING FUNDAMENTALS

What is Computer Networking (Advantages of Networking, Types of Networks), **Client/Server Method of Connecting Computers, Peer to Peer Computer Network** (How Peer-to-Peer Network Works, Comparison of Client/Server Architecture with Peer-to-Peer Architechture), **Local Area Network (LAN), Baseband vs Broadband, Media Access Control, LAN Hardware, LAN Operating Systems, Transmission Media** (Twisted Pair, Coaxial Cables), **Implementing LAN, Fast LANs, Nonstandard LANs, Extending LAN** (Fiber Optic Extension, Repeaters, Bridges, Routers, Gateways, Wi-Fi Router, Hubs, Switches, Switching Hub), Virtual LANs, Metropolitan Area Network (MAN), Wide Area Network (WAN), Using WAN and Network Services, Network Management, Network Elements, IP Address, Network Interface Cards, Cabling Concepts, Transmission Media, Guided Media, Unguided Media, Fiber Optics Communication, Transmission Modes, Network Topologies, Logical Types of Topology, Wireless LAN, Open System Inter Connection (OSI), Network Architectures, Protocol, Layering the Communication Process, Open System Inter Connection (OSI) Model, TCP/IP Protocol (Internet Protocol (IPv4), Services provided by TCP), MAC Address (MM-MM-MM-SS-SS-SS), Subnetting (How does Subnetting Work).

2. NETWORK ADMINISTRATION

Introduction to Windows NT, Introduction to Windows 2000, Windows 2003 and XP Operating Systems, Windows NT/2000/2003/XP Start Up, Configuring a Windows 2000/XP System as a Client to Windows 2000/2003/XP Network (Verifying Network Configuration, Joining a Domain, Configuring Windows 2000/2003 Professional Workstations, Connecting Windows 9x and Windows ME Workstations), Creating of User and Groups, Rights Assigned to Built-in Groups, File Sharing (Sharing Permissions, Creating Shares, Hidden Shares, Administrative Shares), **Windows 2000/2003/XP Policies, Printer Sharing** (Setting Printer Permissions).

UNIT-II DATABASE MANAGEMENT SYSTEM (50 Marks)

1. AN OVERVIEW OF THE DATABASE MANAGEMENT SYSTEM

What is Database, Why Database, Characteristics of Data in Database (Field, Record, File, Database, Key Field), Database System, Database Management System (DBMS), Types of DBMS (Hierarchical DBMS, Network DBMS, Relational DBMS, Object Oriented DataBase, Distributed DBMS), Advantages of DBMS.

2. AN ARCHITECHTURE OF THE DATABASE SYSTEM

Three Levels of Architecture, Database Models, Mapping, Database Design, Role of DBA (Database Administrator), E-R Model, Components of E-R Model, Symbols of E-R Model, Superclass and Subclass Types, Attribute Inheritance, Generalization, Specialization, Aggregation, Categorization, Three Approaches of DBMS.

3. RELATIONAL DATABASE MANAGEMENT SYSTEM (RDBMS)

Introduction, RDBMS Terminologies, Relational Data Integrity, Relational Model, Base

Tables, Relational Data Manipulation, Codd's Rules, Keys.

4. DATABASE APPLICATION USING MICROSOFT ACCESS

USING ACCESS (Basic Concepts, Components of a Database, Concept of Database Management System, An Introduction to Access, What can Access Do?, Getting Started with Access, Creatig a Database using Wizard, Opening an Existing Database, Using Table Wizard to Create a Table), ADVANCE ACCESS FEATURES (Opening a Table, Opening a Table in Datasheet View, Opening a Table in Design View, The Field Grid Pane, The Field Properties Pane, Input Mask, Creating a Caption, Default Value, Data Validation, Required, Allow Zero Length, Indexed), QUERIES, REPORTS AND FORMS (Opening a Table, Queries – Asking Database a Question, Displaying Data Using Reports, Entering Data using Forms)

UNIT-III WEB DEVELOPMENT USING HTML (50 Marks)

1. WEB PUBLISHING AND BROWSING

Overview of WWW, SGML, Web Hosting, HTML, Documents Interchange Standards, Components of Web Publishing, Maintaining a Web Site, Document Management, Web Page Design Consideration and Principles, Web Site Planning, Search Engines, HTTP, Publising Tools.

2. HTML PROGRAMMING BASICS

Introduction, Heading Element, Block Oriented Elements, Lists, Inline Elements, Visual Markup, HTML Links, Creating Tables, Table Attributes, Frames, <FRAMESET? Tag, <FRAME> Tag, IMAGES, Multimedia, Music and Sound for Multimedia, Virtual Reality on the Internet, VRML (Virtual Reality Modeling Language), Authoring Tools For Graphic.

3. INTERACTIVITY TOOLS

ASP (Active Server Page), VB Script, JavaScript and Java, Microsoft FrontPage, Flash.

UNIT-IV BUSINESS COMMUNICATION SKILLS (14 Marks)

OFFICE CORRESPONDENCE

Receipt and Dispatch of Mail, Noting on the Files, Filing Systems, Classification of Mail, Role & Function of Correspondence, Types of Correspondence.

LETTER WRITING

Letter Components and Layout, Planning a Letter, Process of Letter Writing.

RESUME WRITING

What is a Resume? Creating the First Impression, Does Your Resume Stand Out? Resume Tips, Resume Mistakes, Cover Letters.

INTERVIEW PREPERATION

What is an Interview? Preparing for an Interview, Interview Questions, General Questions, How to nail the behavioural interview, Situational Questions, Asking the Interviewer

Questions, Dressing for the Interview, How to Nail the Telephone Interview, Top 10 Job Interview Blunders, How to Answer Illegal Interview Questions, Following Up From the Interview.

UNIT-V APTITUTE TEST (20 Marks)

1. Numerical and Figure work Test

These tests are reflections of fluency with numbers and calculations. It shows how easily a person can think with numbers. The subject will be given a series of numbers. His /Her task is to see how the numbers go together to form a relationship with each other. He /She has to choose a number which would go next in the series.

2. Verbal Analysis and Vocabulary Tests

These tests measure the degree of comfort and fluency with the English language. These tests will measure how a person will reason with words. The subject will be given questions with alternative answers that will reflect his /her command of the rule and use of English language

3. Visual and Spatial / #-D Ability Tests

These tests are used to measure perceptual speed and acuity. The subject will be shown pictures where he/she is asked to identify the odd one out; or which comes next in the sequence or explores how easily he/she can see and turn around objects in space

4. Abstract and Reasoning Test

This test measures the ability to analyze information and solve problems on a complex, thought based level. It measures a person's ability to quickly identify patterns, logical rules and trends in new data, integrate this information, and apply it to solve problems