

Course Name: Diploma in Information Technology (DIT)

Eligibility: 10+2

Duration: One year, 600 Hrs

Fee: 14,000/-

Objective:

1. Equipping students with the technical knowledge required for an IT environment to work as an Assistant Programmer.
2. Develop the skill in understanding IT applications in various corporate business sectors.
3. Understanding in brief concept of computer programming, operating systems, internet and multimedia.

Lateral Entry: ADIT, Third Semester

Semester: I, Duration: 6 months, 275 Hrs, Rs.7, 000/-

Subject Code	Subject Name	Details	T	P	Total Dur. Hrs.	Total Marks	Exam Dur.
A02-01	Computer Fundamentals	Computer Fundamentals, Operating System: DOS, UNIX, Ms- Windows	60	40	100	100	3
A02-02	Ms- Office	Ms- Word, Ms- Excel, Ms- Power Point	35	65	100	100	3
A02-03	MS-Access	DBMS Concepts, Design of database, Fill exposure of MS-Access	30	45	75	100	3
		Total	125	150	275	300	

Semester: II, Duration: 6 months, 325 Hrs, Rs.8, 000/-

Subject Code	Subject Name	Details	T	P	Total Dur. Hrs.	Total Marks	Exam Dur.
A02-04	Concepts of Networking	Introduction to Computer Networking, Windows 2000 or higher	50	30	75	100	3
A02-05	Web Programming	HTML, FrontPage Page & DHTML	40	60	100	100	3
A02-06	Computer Programming	Concepts of OOP's & Programming using C++ Language	40	60	100	100	3
A02-07	Project Work	Using any Language of the course	-	50	50	100	-
		Total	130	200	325	400	

Detailed Syllabus

Paper	Subject	Syllabus	Contents	T	P
A02-01	Computer Fundamentals	Computer Fundamentals, Operating System: DOS, UNIX, Ms- Windows	Introduction: Characteristics of Computers; The Evolution of Computers; The Computer Generations (First Generation (1942-1955), Second Generation (1955 – 1964), Third Generation (1964 – 1975), Fourth Generation (1975 – 1989), Fifth Generation (1989 – Present)).	04	-
			Basic Computer Organization: Input Unit; Output Unit; Storage Unit; Arithmetic Logic Unit; Control Unit; Central Processing Unit; The System Concept.	04	-
			Number Systems: Non-Positional Number Systems; Positional Number Systems (Binary Number System, Octal Number System, Hexadecimal Number System); Converting One number System to Another (Converting to Decimal from Another Base, Converting from Decimal to Another Base (Division-Remainder Technique), Converting from a Base Other Than 10 to a Base Other Than 10, Shortcut Method for Binary to Octal Conversion, Shortcut Method for Octal to Binary Conversion, Shortcut Method for Binary to Hexadecimal Conversion, Shortcut Method for Hexadecimal to Binary Conversion); Fractional Numbers.	06	-
			Processor and Memory: The Central Processing Unit (CPU) (The Control Unit, The Arithmetic Logic Unit (ALU), Instruction Set, Registers, Processor Speed, Types of Processors); The Main Memory (Storage Evaluation Criteria, Main Memory Organization, Main Memory Capacity, RAM, ROM, PROM and EPROM, Cache Memory.	04	-
			Secondary Storage Devices: Sequential and Direct-Access Devices; Magnetic Tape (Basic Principles of Operation, Types of Magnetic Tapes, Advantages and Limitations of Magnetic Tapes, Uses of Magnetic Disks); Optical Disk (Basic Principles of Operation, Types of Optical Disks, Advantages and Limitations of Optical Disks, Uses of Optical Disks); Mass Storage Devices (Disk Array, Automated Tape Library, CD-ROM Jukebox); Storage Hierarchy.	04	-
			Input-Output Devices: Input Devices (Keyboard Devices, Point-and-Draw Devices, Data Scanning Devices, Digitizer, Electronic Card Reader, Voice Recognition Devices, Vision-Input System); Output Devices (Monitors, Printers, Plotters, Screen Image Projector, Voice Response Systems).	04	-
			Computer Languages: Analogy with Natural Languages; Machine Language (Advantages and Limitations of Machine Language); Assembly Language (Assembler, Advantages of Assembly Language over Machine Language, Limitations of Assembly Language, Assembly Languages with Macro Instructions); High-Level Language (Compiler, Linker, Interpreter, Advantages and Limitations of High-Level Languages); Object-Oriented Programming Languages; Some High-Level Languages	06	-

		<p>(FORTRAN, COBOL, BASIC, Pascal); Some More High-Level Languages (C and C++, Java, RPG, LISP, SNOBOL); Characteristics of a Good Programming Language; Selecting a Language for Coding an Application; Subprogram.</p> <p>Application Software Packages: Word-Processing Package (What it is?, Commonly Supported Features); Spreadsheet Package (What it is?, Commonly Supported Features); Graphics Package (What it is?, Commonly Supported Features); Personal Assistance Package (What it is?, Commonly Supported Features).</p> <p>Classification of Computers: Notebook Computers; Personal Computers (PCs); Workstations; Mainframe Systems; Supercomputers; Clients and Servers.</p> <p>Operating System:</p> <p>Introduction: Machine Hardware (Traps and Interrupts, Multimode Execution); Operating System Structure (Operating System Types, Operating System Kernel, The Boot Process).</p> <p>MS-DOS: Basics of OS, functions of OS, DOS as OS, Getting started with MS-DOS, Starting PC; Booting sequence, Types of commands, Internal & external, reserve words, typing a command (Syntax of command)</p> <p>Files in MS-DOS: Naming a file, permissible characters and extensions, reserve words, creating a file with copy con <xxx>. Commands like TYPE, COPY, RENAME, DEL, DATE, TIME, ATTRIB.</p> <p>Directory Handling: MKDIR, CHDIR, RMDIR, TREE, SUBST, DELTREE, PATH, APPEND, editing files with Edit, cut, copy & Paste, search with find.</p> <p>Disk Maintenance: Format, Diskcopy, XCOPY, DISKCOPY, BACKUP RESTORE, LABEL, VOL.</p> <p>Batch File: REM, ECHO, FOR, PAUSE, IF, GOTO replacable parameters %1 to %9 & %* Autoexec.bat.</p> <p>Command: Special features: redirection and filters; piping, MORE, SORT, FIND commands.</p> <p>Config. Sys: Device Drivers, MEM managements, files Buffers, High memory area.</p> <p>UNIX Overview: Unix Architecture; Kernal, process, Time sharing, Shell, files and directories creation of file, file security, peripheral devices as files, inodes.</p>	02	-
			02	-
			02	02
			02	04
			02	04
			02	04
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			02	04
			01	02
			02	02
			04	02

			<p>Unix Editor: Ed editor, vi editor</p> <p>File Handling Utilities: File handling Commands, ls, cp, mv, rm, cat lp, grep, mail, sed etc.</p>	02	04
			<p>Shell Script: Bourne shell, C shell, Shell variables, Shell Scripts, if a case statements, for while until loops.</p>	02	04
			<p>The Internet: Definition (What it is?); Brief History; It's Basic Services (Electronic Mail, File Transfer Protocol, Telnet. Usenet News, The World Wide Web); WWW Browsers; Uses of the Internet.</p>	02	04
			Total	60	40
A02- 02	Ms- Office	Ms- Word, Ms- Excel, Ms- Power Point	<p>Microsoft Office 2000/XP Introduction; Microsoft Word 2000/XP; Microsoft Excel 2000/XP; Microsoft Access 2000/XP; Microsoft PowerPoint 2000/XP, Microsoft Outlook 2000/XP; Internet Explorer 5.0; Microsoft FrontPage 2000/XP; Microsoft Publisher 2000; Microsoft PhotoDraw 2000/XP; Microsoft Office Bar; Using the Mouse (To Click, To double-click, To select, To drag, To scroll, To choose from a menu, To move a window, To resize a window, To minimize a window, To restore a minimized window, To maximize a window, To switch windows, To close a window, Remember); Microsoft Office 2000/XP and Web (Microsoft Word 2000/XP, Microsoft Excel 2000/XP, Microsoft Access 2000, /XP Microsoft PowerPoint 2000/XP, Microsoft Outlook 2000/XP, Microsoft FrontPage 2000/XP); Common Keyboard Commands.</p> <p>Creating Your Document in Word 2000/XP: Introduction; Saving the file; Formatting the text, Alignment of Text; Applying Fonts; Spell Checking; Consulting Thesaurus; Assign Character Styles (Assign a Character Style, Create a character style); Borders and Shading (Apply Borders and Shading); Closing of the File; Save as option; Open File (From File menu, From Open Icon); Printing Your Document.</p> <p>Proofing Your Document in Word 2000/XP: Introduction; Editing Tools; AutoCorrect (Add AutoCorrect Entries Without Formatting, Add New AutoCorrect Entries with Formatting); Auto Text (Creating an AutoText Entry, AutoComplete Option); AutoFormat (AutoFormat as You Type, AutoFormat on Command, Autoformatting Text); Find and Replace; Find; Replace Text; Page Numbering; Header and Footer (Adding a Header or Footer in Your Document); Footnotes and Endnotes (Add a Footnote or Endnote).</p> <p>Getting Started : Staring, Menu system, tabbed dialog bxes, workbooks, worksheets within workbooks, Cells : cell reference, active cell toolbar: (displaying, hiding, getting poput tool explanantions, controlling size, moving tool bars, drop down palettes) using online help.</p> <p>Workbooks, Worksheets & Windows Workbooks: Creating new workbooks, opening existing ones, opening more than one workbooks, saving closing.</p>	06	04
			<p>Creating Your Document in Word 2000/XP: Introduction; Saving the file; Formatting the text, Alignment of Text; Applying Fonts; Spell Checking; Consulting Thesaurus; Assign Character Styles (Assign a Character Style, Create a character style); Borders and Shading (Apply Borders and Shading); Closing of the File; Save as option; Open File (From File menu, From Open Icon); Printing Your Document.</p>	02	06
			<p>Proofing Your Document in Word 2000/XP: Introduction; Editing Tools; AutoCorrect (Add AutoCorrect Entries Without Formatting, Add New AutoCorrect Entries with Formatting); Auto Text (Creating an AutoText Entry, AutoComplete Option); AutoFormat (AutoFormat as You Type, AutoFormat on Command, Autoformatting Text); Find and Replace; Find; Replace Text; Page Numbering; Header and Footer (Adding a Header or Footer in Your Document); Footnotes and Endnotes (Add a Footnote or Endnote).</p>	04	08
			<p>Getting Started : Staring, Menu system, tabbed dialog bxes, workbooks, worksheets within workbooks, Cells : cell reference, active cell toolbar: (displaying, hiding, getting poput tool explanantions, controlling size, moving tool bars, drop down palettes) using online help.</p>	02	04
			<p>Workbooks, Worksheets & Windows Workbooks: Creating new workbooks, opening existing ones, opening more than one workbooks, saving closing.</p>	02	04

			Worksheets with in Wbs: Activating Wks, scrolling tabs, printing Wks, inserting, deleting, copying/moving, manipulation of Multiple files. Creating a Worksheet: Introduction; Copying Formula.	02	06
			Advanced Techniques of Excel 2000/XP: Introduction; Auditing a Workbook (To Trace the Precedents for a Formula); Comment Inserting (To Insert a Comment); Formulas That Make Decisions (How the If function works); Headers and Footers; Merging Workbooks (To merge workbooks); Outlines (Outline a Worksheet Automatically, Clear Entire Outline, Show or Hide Outline Symbols, Group Rows or Columns in an Outline, Ungroup Rows or Columns in an Outline, Remove Group from Outline, Set Outline Options); Printing Column and Row Labels on Every Page; Protecting a Workbook (To unlock cells so that others can edit the cell contents, To protect a workbook, To share a workbook); Ranges, Naming (To name a range); References (Absolute references, Mixed references); Seeking Goals (To seek a goal); Sheets Naming (To Name a Sheet); Working with Workbooks (Copying Entries Between Workbooks, Moving Sheets Between Workbooks, Deleting Sheets).	06	12
			Power Point Basic: Creating Presentation Using AutoContent Wizard, Creating New Presentation, Introduction; Changing views. OLE Tips for Power point, Terminology, Color Schemes, PowerPoint Templates, Getting Started, Views.	02	04
			Creating Presentations the Easy Way: Auto Content Wizard, The Pick A Look Wizard, Masters, Adding Slides.	01	03
			Working with Text in Power Point : Editing and Moving Text, Working in Outline View, Spell-Checking, Finding and Replacing Text, Adding Removing Periods in Sentences, Formatting Text, Aligning Text, Word Tables Power Point.	01	04
			Working with Graphics in Power Point: Importing Images from the Outside World, The CLIP PART Gallery, Drawing in Power Point, Creating Organizational Charts, Inserting Photos in Your PowerPoint Presentation.	01	04
			Showtime: If we can put a man on the Moon..., Arranging, Previewing and Rehearsing, Transition and Build Effects, Showing Slides Out of Order, Deleting Slides, Printing Presentation Elements, Creating Overhead Transparencies, Obtaining Colour 35mm Slides, Sharing Presentation Files with others.	01	04
			Total	35	65
A02- 03	MS-Access	DBMS Concepts, Design of database, Fill exposure of MS-	Introduction to Databases, DBMS and RDBMS : Introduction, Information, Quality of Information, Information Processing, What is a Database?, Why a Database?, Characteristics of Data in a Database, What is a Database Management System (DBMS)?, Need for DBMS, Types of DBMS,	04	-

	Access	<p>Relational Database Management Systems (RDBMS), RDBMS Terminology, Relational Data Structure, Relational Data Intergrity</p> <p>Access 2000 Basics: Introduction, Starting Access 2000, Opening an existing database, Opening the sample north window database, What is a database?, Managing database objects Access Startup Dialog Box, Menus and Toolbars, Using Toolbar Buttons, Arranging Buttons on the Toolbar, Viewing Data, Creating an Access 2000 Database and Tables, Database Properties, Modifying Tables, Creating Forms, Entering and Updating Data Using Forms, Navigating between Records in a Form, Finding, Editing and Deleting Data in a Form, Using Access 2000 Help, Using Answer Wizard, Using the Contents Tab to Get Help, Using the Index Tab to ger Help, Exercises.</p> <p>UNDERSTANDING DATABASES: Why store data, You use tables to store data, Terminology time, Why use multiple tables?</p> <p>CREATING DATABASES: Introduction, Database is not a table, Creating a blank database, Using the file new database dialog box,</p> <p>CREATING TABLES: Using the table wizard, Object naming rules, Planning a table from scratch, Creating a table without using a wizard, Defining a tables fields, Choosing appropriate data types, Defining field propertiesm, Setting a primary key, Defining indexes, Saving a table structure, Switching between design and datasheet views, Changing properties, About lookup fields</p> <p>ADDING, EDITING AND VIEWING DATA: Datasheet view and form view, Changing the datasheet appearances, Navigating forms and datasheets, Changing data in a table, Deleting data, Copying and moving data, Special techniques for memo fields, Duplicate key message, Null value in index, Validation rule, Changing the table design from datasheet view, Creating a table from a blank datasheet</p> <p>SORTING: Introduction, Quick and easy sorting, Sorts within sorts, Filtering out unwanted records, Using advanced filter/sort, Creating complex filters, Specifying selection criteria, Specifying 'and/or' criteria, Sample filters, Saving a filter as a query</p> <p>Queries: Introduction, What queries let you do, Types of queries, Creating a query, Viewing the dynaset, Running an action query, Refining your query, Changing field properties, Creating crosstab queries, Creating action queries, Update queries, Make table queriesSorting and Filtering Records, Creating and Printing Reports, Creating and Using Queries.</p>	02	-
			04	08
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			02	01
			02	05
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			02	02
			02	06

			<p>Introduction to Structured Query Language (SQL): Introduction, Characteristics of SQL, Advantages of SQL, Types of SQL Tables, Create Table, NULLS, Data Manipulation, Update Operations, SQL in Access., SELECT Queries in QBE, Make-Table Query, DELETE Query, UPDATE Query, APPEND Query</p>	04	06
			<p>CREATING FORMS: Creating forms with form wizards, Making hierarchical forms work properly, Charts, Pivot tables, Using wizards, Saving a form, Opening and using a form, Getting around in hierarchical forms, Changing the style</p>	02	06
			<p>CREATING REPORTS: Introduction, Kinds of reports, Groups, totals and summary reports, When the report wizard needs your help, Charts, Using wizards to create a report, Creating mailing labels, Formatting postal codes and phone numbers, Saving a report, Opening a report, Removing a filter and sort order, Changing the style for a report</p>	02	05
			Total	30	45
A02- 04	Concepts of Networking	Introduction to Computer Networking, Windows 2000 or higher	<p>DATA COMMUNICATIONS: Multiplexing, Signaling, Encoding & Decoding, Error Detection & Recovery, Flow Control, Sliding Window, Congestion Management.</p> <p>COMMUNICATION NETWORKS: _Introduction to networking, OSI Model for Networking, Internet, ATM, Network Components (Cables, Hubs, Bridges, Switches, Routers), Network Topologies, Shared Medium, Peer to Peer, Hybrid Technology.</p> <p>NETWORK TECHNOLOGIES: Local Area Network Technologies, Ethernet Technologies, Ethernet Versions, Token Ring Technologies, Wide Area Network Technologies (Frame Relay, SMDS, ISDN, SONET, PPP, HDLC, LLC), Wireless Networks (Radio Frequencies, Microwave Frequencies, Infrared Waves.</p> <p>MULTIPLE ACCESS: Design Issues, Distributed & Centralized Design, Circuit Mode & Packet Mode Design, Implementation Issues, Performance Considerations, Base Technology (FDMA, TDMA, CDMA, Centralized Access, Circuit Mode Access, Poling or Packet Mode Access, Reservation Based Access), Distributed Access (decentralized polling, CSMA, CSMA/CA, CSMA/CD, Busy Tone Multiple Access & Multiple Access Collision Avoidance, Token Passing, ALOHA, Slotted ALOHA, Reservation ALOHA), Hardware Addressing</p> <p>SWITCHING: Circuit Switching (Time Division switching, Space division switching, time space switching, time space time switching), Packet Switching (Port Mappers, Blocking, ATM Switching, Switching Fabric (Crossbar, Broadcast, Switching Fabric Elements), Bridges (Transparent bridges, Spanning Tree Algorithm, Virtual LANS), Switches.</p> <p>NAMING & ADDRESSING: Hierarchical Naming, Addressing, Telephone Networks, Internet, IPv4, Subnetting Ipv4 Networks, Private Networks, Asynchronous Transfer Mode, Name Resolution, Address Resolution Protocol (Arp), RARP</p> <p>Networking Topologies: Network Services, Transmission Media, Connectivity Devices, Network</p>	02	-
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			<p>Protocols & Models, Servers and clients, Introductions to the OSI Model, the Physical Media, the Data Link Layer, Data Transmission, The Network Layer, The transport Layer, The Session Layer, Lower Layer Protocols, Bridging, Switching & routing, TCP/IP Network, Directory Services, Remote Access Protocols, Network Security and fault Tolerance, Preparing for Network Installation, Main ting the Network, Troubleshooting the Network.</p> <p>Basics of Networking: Basic Networking Knowledge, LAN Vs. WAN, Primary Network Components, Network Topologies, Network Architectures, Network Media, Connectivity Devices, Repeaters, Bridges, Hubs, Routers, Brouters, Gateways.</p> <p>Operating System: Introduction to the Window 9x Family of Products, Introduction to Windows 9x Networking, Windows 9x Architecture, Supporting Printers, Troubleshooting Windows 9x, Introduction to the Windows 2000 Family of Products, The Windows 2000 Boot Process, Windows 2000 System Administration Basics, Introduction to Networking with TCP IP, Name Resolution Services, Customizing a Windows 2000 Installation, Managing Network Printing, Managing Hard Disks and Partitions, Monitoring and Troubleshooting Windows 2000.</p> <p>Windows 2000 or higher: Introduction to administering Windows 2000, Planning & creating User Accounts, Configuring User Profile, Planning & Creating Local & Global groups, Implementing Built-in groups, Managing Account, Managing Domain Controllers, Planning Shared folders, Sharing folders, Planning & assigning NTFS permissions, Auditing resources & events, Installing Windows 2000. Configuring Windows 2000 Environment, Managing System Policy, Managing file system, Creating & Managing Partitions, Implementing fault tolerance, Supporting Applications, Windows 2000 Networking Environment, Configuring WNS, Installing & Configuring DNS, Remote Access Server, Installing Internet Information Server (ISS), Installing & configuring gateway service for netware, Setting up Network Printers, Printers from windows 2000, implementing Netware Clients, Implementing file synchronizaton & Directory Replications, The Windows 2000 boot Process.</p>	06	-
				06	05
				08	12
			Total	50	25
A02- 05	Web Programming	HTML, FrontPage Page, DHTML & Java Script	<p>INTRODUCTION TO HTML: Information Files Creation; Web Server; Web Client/Browser (Understanding how a Browser communicates with a Web Server); Hyper Text Markup Language (HTML) (HTML Tags, Paired Tags); Commonly used HTML Commands (The structure of an HTML program, Document Head, Document Body); Titles and Footers; Text Formatting (Paragraph Breaks, Line Breaks); Emphasizing Material in a Web Page (Heading Styles, Drawing Lines); Text Styles (Bold, Italics, Underline); Other Text Effects (Centering (Text, Images etc.); Spacing (Indenting Text).</p> <p>Lists: Types of Lists (Unordered List (Bullets), Ordered Lists (Numbering), Definition Lists).</p> <p>Adding Graphics to HTML Documents: Using the Border attribute; Using the Width and</p>	04	06
				01	01

		Height Attribute; Using the Align Attribute; Using the ALT Attribute.	02	04
		Tables: Introduction (Header, Data rows, The Caption Tag); Using the Width and Border Attribute; Using the Cellpadding Attribute; Using the Cellspacing Attribute; Using the BGCOLOR Attribute; Using the COLSPAN and ROWSPAN Attributes.	03	06
		Linking Documents: Links (External Document References, Internal Document References); Images as Hyperlinks (Image Maps).	02	04
		DHTML AND STYLE SHEETS: Defining Styles; Elements of Style; Linking a Style Sheet to an HTML Document; In-line Styles; External Style Sheets; Internal Style Sheets; Multiple Styles.	04	06
		FRAMES: Introduction to Frames (The <FRAMESET> tag, The <FRAME> tag, Targeting Named Frames. Frameset Definition; Frame Definition; Nested Framesets.		
		INTRODUCTION TO JAVASCRIPT: JavaScript in Web Pages (Netscape and JavaScript, Database Connectivity, Client side JavaScript, Capturing User Input); The Advantages of JavaScript (An Interpreted Language, Embedded within HTML, Minimal Syntax - Easy to Learn, Quick Development, Designed for Simple, Small Programs, Performance, Procedural Capabilities, Designed for Programming User Events, Easy Debugging and Testing, Platform Independence/Architecture Neutral); Writing JavaScript into HTML; Building Up JavaScript Syntax; Basic Programming Techniques (Data Types and Literal, Type Casting, Creating Variables, Incorporating variables in a Script, The JavaScript Array, The Elements of an Array, The JavaScript Array and its length Property); Operators and Expressions in JavaScript (Arithmetic Operators, Logical Operators, Comparison Operators, String Operators, Assignment Operators, The Conditional Expression Ternary Operator, Special Operators); JavaScript Programming Constructs; Conditional Checking (If - then - else, Immediate If (Conditional expression); Super Controlled - Endless Loops (For Loop); Functions in JavaScript (Built-in Functions, User Defined functions, Declaring functions, Place of Declaration, Passing Parameters, Variable Scope, Return Values, Recursive Functions); Placing text in a Browser; Dialog Boxes (The Alert dialog box, The Prompt dialog box, The Confirm dialog box).	02	05
		The JavaScript Document Object Model: Introduction (Instance, Hierarchy); The JavaScript Assisted Style Sheets DOM (JSSS DOM); Understanding Objects in HTML (Properties of HTML objects, Methods of HTML objects); Browser Objects (The Web Page HTML Object Hierarchy, Access to Elements of a Web Page, How a Web Page Element is Manipulated); Handling (WEB PAGE) Events Using JavaScript (Named JavaScript Event handlers).	10	12

			Forms Used by a Web Site: The Form Object; The Form Object's Methods (The Text Element, The Password Element, The Button Element, The Submit (Button) Element, The Reset (Button) Element, The Checkbox Element, The Radio Element, The TextArea Element, The Select and Option Element, The Multi Choice Select Lists Element); Other Built-In Objects in JavaScript (The String Object, The Math Object, The Date Object); User Defined Objects (Creating a User Defined Object, Instances, Objects within Objects).	06	08
				06	08
			Total	40	60
A02- 06	Computer Programming	Concepts of OOP's & Programming using C++ Language	<p>Principles of Object-Oriented Programming: Software Crisis; Software Evolution; A Look at Procedure-Oriented Programming; Object Oriented Programming Paradigm; Basic Concepts of Object-Oriented Programming; Benefits of OOP; Object Oriented Languages; Applications of OOP.</p> <p>Beginning with C++: What is C++?, Applications of C++, A Simple C++ Program, More C++ Statements, An Example with Class; Structure of C++ Program, Creating the Source File, Compiling and Linking.</p> <p>Tokens, Expressions and Control Structures: Introduction; Tokens; Keywords; Identifiers; Basic Data Types; User-Defined Data Types; Derived Data Types; Symbolic Constants; Type Compatibility; Declaration of Variables; Dynamic Initialization of Variables; Reference Variables; Operators in C++; Scope Resolution Operator; Member Dereferencing Operators; Memory Management Operators; Manipulators; Type Case Operator; Expressions and Implicit Conversions; Operator Overloading; Operator Precedence; Control Structures.</p> <p>Functions in C++: Introduction; The Main Function; Function Prototyping; Call by Reference; Inline Functions; Default Arguments; const Arguments; Function Overloading; Friend and Virtual Functions.</p> <p>Classes and Objects: Introduction; C Structures Revisited; Specifying a Class; Defining Member Functions; A C++ Program with Class; Making an Outside Function Inline; Nesting of Member Functions; Private Member Functions; Arrays Within a Class; Memory Allocation for Objects; Static Data Members; Static Member Functions; Arrays of Objects; Objects as Function Arguments; Friendly Functions; Returning Objects; const Member Functions; Pointers to Members.</p> <p>Constructors and Destructors: Introduction; Constructors; Parameterized Constructors; Multiple</p>	04	
				04	06
				04	08
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				04	06

			Constructors in a Class; Constructors with Default Arguments; Dynamic Initialization of Objects; Copy Constructor; Dynamic Constructors; Constructing Two-Dimensional Arrays; Destructors.		
			Operator Overloading and Type Conversions: Introduction; Defining Operator Overloading; Overloading Unary Operators; Overloading Binary Operators; Overloading Binary Operators Using Friends; Manipulation of Strings Using Operators; Rules for Overloading Operators; Type Conversions.	04	06
			Inheritance: Extending Classes: Introduction; Defining Derived Classes; Single Inheritance; Making a Private Member Inheritable; Multilevel Inheritance; Multiple Inheritance; Hierarchical Inheritance; Hybrid Inheritance; Virtual Base Classes; Abstract Classes; Constructors in Derived Classes; Member Classes: Nesting of Classes.	04	06
			Pointers, Virtual Functions and Polymorphism: Introduction; Pointers to Objects; this Pointer; Pointers to Derived Classes; Virtual Functions; Pure Virtual Functions.	02	04
			Managing Console I/O Operations: Introduction; C++ Streams; C++ Stream Classes; Unformatted I/O Operations; Formatted Console I/O Operations; Managing Output with Manipulators.	02	04
			Working with Files: Introduction; Classes for File Stream Operations; Opening and Closing a File; Detecting End-of-File; More About Open() : File Modes; File Pointers and Their Manipulations; Sequential Input and Output Operations; Updating a File : Random Access; Error Handling During File Operations; Command-Line Arguments.	04	06
			Object-Oriented Systems Development: Introduction; Procedure-Oriented Paradigms; Procedure-Oriented Development Tools; Object-Oriented Paradigm; Object-Oriented Notations and Graphs; Steps in Object-Oriented Analysis; Steps in Object-Oriented Design; Implementation; Prototyping Paradigm; Wrapping Up.	02	04
			Total	40	60
A02- 07	Project	Using any Language of the course		-	50