12 to 14

INDIAN TECHNICAL EDUCATION SOCIETY
MUMBAI

COMPUTER

SOFTWARE

HARDWARE

NETWORKING

COURSES -- SYLLABII

Eff. From Nov. 2014

INDIAN TECHNICAL EDUCATION SOCIETY
MUMBAI

DIPLOMA & CERTIFICATE COURSES IN
COMPUTER SOFTWARE

SYLLABUS & SCHEME OF THEORY AND PRCATICAL EXAMINATIONS

SCHEME OF EXAMINATION

Sr. No.	EXAMINATION AND ABBREVATION	PAGE NO.	THEORY PAPER	PRAC. MARKS
	CERTIFICATE COURSES			
1	Account Tally [ACT]		One paper of 3 Hrs. 100 Marks	One Pract. of 2 Hrs. 75 Pract. + 15 Term Work + 10 Oral = Total 100 Marks
2	Microsoft Office [MSO]		One paper of 3 Hrs. 100 Marks	- DO -
3	Information Technology [I T]		One paper of 3 Hrs. 100 Marks	- DO -
4	Desk Top Publishing [DTP]		One paper of 3 Hrs. 100 Marks	- DO -
5	C. Programming [C. PROG.]		One paper of 3 Hrs. 100 Marks	- DO -
6	C++ Programming [C++ PROG.]		One paper of 3 Hrs. 100 Marks	- DO -
7	Web Page Designing [WPD]		One paper of 3 Hrs. 100 Marks	- DO -
8	Computer Programming [C P]		One paper of 3 Hrs. 100 Marks	- DO -
10	Computer Aided Drafting & Designing [CAD]		One paper of 3 Hrs. 100 Marks	- DO -
11	Solid Works		One paper of 3 Hrs. 100 Marks	- DO -
12	Pro / E		One paper of 3 Hrs. 100 Marks	- DO -
13	CATIA		One paper of 3 Hrs. 100 Marks	- DO -
14	3D Max [3D MAX]		One paper of 3 Hrs. 100 Marks	- DO -
15	Revit		One paper of 3 Hrs. 100 Marks	- DO -

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Sr. No.	EXAMINATION AND ABBREVATION	PAGE NO.	THEORY PAPER	PRAC. MARKS
	DIPLOMA COURSES			
16	Diploma Office Automation [DOA] (MSO + I T)		Paper I & II 3 Hrs. 100 Marks each	Two Pract. of 2 Hrs. 75 Pract. + 15 Term Work + 10 Oral = Total 100 Marks
17	Diploma Computer Applications [DCA] (MSO + ACT)		Paper I & II 3 Hrs. 100 Marks each	- DO -
18	Diploma Graphics and Animation [DGA] (DTP + WPD)		Paper I & II 3 Hrs. 100 Marks each	- DO -
19	Diploma Computer Programming & Software Applications [DCP& SA] (C P + I T)		Paper I, II & II 3 Hrs. 100 Marks each	- DO -
20	Diploma in Mechanical CAD [DM CAD] (Solid Works + Pro / E + CAD)		Paper I, II & II 3 Hrs. 100 Marks each	- DO -
21	Diploma in Architectural CAD [DA CAD] (3DS Max + Revit + CAD)		Paper I, II & II 3 Hrs. 100 Marks each	- DO -

INDIAN TECHNICAL EDUCATION SOCIETY
MUMBAI

DIPLOMA & CERTIFICATE COURSES IN
COMPUTER HARDWARE & NETWORKING

Sr. No.	EXAMINATION AND ABBREVATION	PAGE NO.	THEORY PAPER	PRAC. MARKS
1.	Computer Maintenance [CM]		One paper of 3 Hrs. 100 Marks	One Pract. of 2 Hrs. 75 Pract. + 15 Term Work + 10 Oral = Total 100 Marks
2	Computer Networking [CN]		- DO -	- DO -
3.	Diploma Computer Hardware & Networking Engineering Services [DCHNES] (CM + CN)		Paper I & II of 3 Hrs. 100 Marks each Total 200 Marks	Two Pract. of 2 Hrs. each. 75 Pract. + 15 Term Work + 10 Oral Total 200 Marks

Minimum Passing for Theory - 35 Marks Each.
Minimum Passing for Practical - 40 Marks Each..

INDIAN TECHNICAL EDUCATION SOCIETY
MUMBAI

CERTIFICATE COURSE
IN
ACCOUNTS TALLY - (ACT)

EXAM SCHEME: **THEORY PAPER 100 MARKS – 3 HRS.**
PRACTICAL 100 MARKS – 2 HRS.

[ACT / DCA – II]

THEORY SYLLABUS

1) **Fundamental Accounting**
   i) What Is Accounting?
   ii) Concept Of Manual Accounting And Computerized Accounting
   iii) Features Of Tally
   iv) Understanding Tally Screen
   v) Company Creation, Alteration, Deleting, Selection
2) **Accounting Master**
   i) Accounting With Pre-Defined Group In Tally
   ii) Explanation Of Ledgers
   iii) Opening Balances
   iv) Creating, Managing And Altering Ledgers
3) **Accounting Vouchers**
   i) Introduction To Accounting Voucher
   ii) Different Types Of Vouchers
      (1) Create A New Voucher Type
   iii) Making Entry In Voucher Mode
   iv) Rules Of Voucher Entry
4) **Inventory Masters**
   i) Introduction To Inventory Masters
   ii) Elements Of Inventory Master – Stock Items, Stock Groups, Categories, Units, Godowns etc
   iii) Maintain Batch wise Details
   iv) Set Expiry Date And Manufacturing Date For Batches
   v) Use Of F12 Configuration
5) **Inventory Voucher**
   i) Introduction To Inventory Voucher
   ii) Different Types Of Vouchers
   iii) Pre-Defined Voucher Types
   iv) Making Entry In Voucher Mode
   v) Order Processing System
6) **Invoicing**
   i) Introduction
   ii) Working With Invoicing
   iii) Configuring The Invoice
   iv) Sales Voucher Number, Delivery Note, Inventory Allocations, Accounting Details, Bill Details

v) Working With Invoice Entry
(1) Printing Invoice And Vouchers

7) Bank Reconciliation Statement

i) Introduction To Bank Reconciliation Statement, Working With Bank Reconciliation, Reconciliation Of Bank Book

8) Interest Calculation

i) Introduction , Simple Mode, Interest Calculations On Outstanding Balances, Interest Calculations Transaction By Transaction, Using Voucher Class For Interest Calculation

9) Reports

i) Viewing And Understanding Reports In Tally
ii) Balance sheet, Profit And Loss, Trial Balance

10) VAT

11) TDS

12) Payroll

13) Advance Accounting

Advance Entries In Accounting Master, Configuration Of Tally, Bill-Wise Details, Activating F11 Features.

14) Advance Inventory

Order Processing System, Tracking Number, Rejection Notes, Additional Cost On Purchase, Multiple Godown.

15) Advance Accounting Entries

Entries in Invoice Mode, Accounting Allocation, Inventory Allocation, Sale Tax Entries, Entries with Discount Column, Zero Value Entries in Voucher.

16) Advance Inventory Entries

Entries With Supplier Details, Stock Transfer, Setting Components Of Finished Product, Cost Of Component, Additional Cost On Manufacturing, And Advance Use Of Manufacturing Journal, Price List, Orders Positions.

17) Creating Voucher Classes

Introduction, Voucher Classes For Payment, Receipt And Contra Vouchers, Exclude These Groups; Include These Group, Ledger Group, Payment Voucher Entry With Classes, Classes For Debit Note & Credit Note.

18) Multi - Currency

Introduction, Managing and Operating Multiple Currencies, Symbol Formal Name, Number of Decimal Places, Show Amt. In Millions, Note For Advanced Users, Alter Currency, Date Of Rates Of Exchanges, Standard Rates, Selling Rate, Buying Rate, Entries With Different Currencies

19) Cost Centre & Cost Category

i) Introduction To Cost Centre, Use Of Cost Centres, How To Manage And Operate Centres, Category, Alter A Cost Centre, Cost Centre Reports, Cost Centre Break-Up, Ledger Break-Up Of A Cost Centre, Group Break-Up Of A Cost Centre,

ii) Cost Centre Classes, Introduction To Cost Categories, Use Of Cost Categories, Create A Cost Category, Alter A Cost Category, Delete A Cost Category, Cost Category

iii) Summary, How To Manage And Operate Cost Centers Under Cost Categories, Create A Cost Centre, Category, Create Multiple Cost Centers Under Cost Categories.

20) Budget & Controls

i) Budgets, How To Manage And Operate Budgets, Group, Type Of Budget, Alter A Budget, Delete A Budget, Budget A Variance, Introduction To Consolidation Of Accounts, Accounts Structure, Create A Group, Company, And Alter A Group Company.

ii) Introduction To Consolidation Of Accounts, Accounts Structure, Create A Group Company, Alter A Group Company.

21) Advance Features of Tally

Import & Export of Data, Scenario Management, Security Control & Tally Audit, Stock Valuation Method, Configuration Of Company In Tally.

22) Printing from Tally

General, Quick Format, Sales Invoice, Delivery Note, Sales/Order Quotation, Purchase Voucher/Invoice And Purchase Order, Receipts Notes, Reminder Letters, Confirmation Statements, Printing Invoice And Vouchers, Printing Reports, Print Format.

23) Financial Analysis & Reporting

Display Accounts Books And Statements, Viewing Cash/Bank Books, Display Trial Balance, Trial Balance Screen, Trial Balance Reconciliation Statement, Display Profit And Loss A/C, Columnar Profit And Loss A/C, Show Quarterly Profit And Loss Account, Income/Expense Statement Instead Of P&L, Display Balance Sheet, Columnar Balance Sheet, Show Quarterly Balance Sheet Ratio Analysis, Bill-Wise Outstanding Report, Show Bill In Foreign, Exchange, Show Over Dues Using Bill Dates, Age-Wise Analysis Of All Receivables, Cash Flow, Columnar Cash Flow.

24) Inventory Analysis & Reporting

Introduction, Viewing Stock Summary, Stock Flow, Gross Profit, Stock Group Summary, Stock Category Summary, Stock Item Summary, Stock Vouchers, Making A Stock Query, Item Movement Analysis, Item Voucher Analysis, Stock Category, Ledger Analysis, Transfer Analysis, Godown Summary, Sales Bills Pending, Purchase Bills Pending.

INDIAN TECHNICAL EDUCATION SOCIETY
MUMBAI

CERTIFICATE COURSE
IN
MICROSOFT OFFICE (MSO)

EXAM SCHEME: **THEORY PAPER 100 MARKS – 3 HRS.**
PRACTICAL 100 MARKS – 2 HRS.

[MSO / DOA – I / DCA – I / 3YD - PAPER – III]

THEORY SYLLABUS

MS OFFICE

1. **Computer Fundamentals**

   a. What Is A Computer, Features Of Computers, Other Peripherals, Types Of Memory, Internal Storage, External Storage Computer System, Input And Output Devices, Keyboard Familiarity Switching On A Computer, Shutting Down A Computer, Essential Care To Be Taken While Working On A Computer?

   b. Hardware, Disks, Hard Disk, Floppy Disk, Cd Rom, Software, Types Of Software, System Software, Application Software, Utility Operating System, Bits & Bytes, Central Processing Unit.

2. **Windows**

   a. Getting Started With Windows, Introduction To Windows, Desktop, Icons, My Computer, Date/Time Display, Background, Screen Saver, Taskbar, Finding Files, Help, Run.

3. **Word Pad**

   a. Working With Documents, Working With Text, Formatting Text, Printing A Document.

4. **Paint**

   a. Introduction To Paint Screen And Toolbox, Drawing Lines And Shapes, Working With Color, Erasing, Working With Part Of A Picture, Changing How Your Picture Looks On Screen.

5. Windows Explorer

a. Creating A Folder, Changing The Name Of A File Or Folder, Copying A File Or Folder, Moving A File Or Folder, Deleting A File Or Folder, Retrieving Deleted Files

6. MS Word

a. File: New, Open, Save, Print, Print Setup, Word Options
b. Home Menu: Clipboard, Font , Font Dialogue Box, Paragraph, Paragraph Dialogue Box, Styles, Editing
c. Insert Menu: Insert Pages, Blank Pages, Page Break, Insert Table, Illustration Group- Insert Picture, Clip Art, Shapes, Smart art, Charts, Link Group-Hyperlink, Bookmark; Header And Footer Group-Header, Footer, Page Number; Text Group-Text Box, Word art, Drop Cap, Signature Line, Date And Time, Object-Text From File, Symbols-Equation, Create New Equation, Symbol
d. Page Layout Menu : Themes, Page Setup Group-Margins, Orientation, Size, Columns, Breaks-Page Breaks, Column Breaks, Section Breaks, Line Numbers, Hyphenation; Page Background-Watermark, Page Color, Page Borders; Paragraph-Indent, Spacing
e. References Menu: Table Of Content-Table Of Contents, Add Text, Update Table; Footnotes-Insert Footnote, Insert Endnote, Footnote Dialogue Box; Captions-Insert Caption, Insert Table Of Figures, Cross Reference
f. Mailing Menu: Create Envelopes Labels; Mail Merge Wizard, Write And Insert Fields, Preview Results
g. Review Menu: Proofing- Spelling And Grammar, Thesaurus; Comment – New Comment, Delete Comment; Tracking – Track Changes, Balloons, Show Markup; Changes – Accepts, Reject; Compare – Compare Two Documents; Protect Document
h. View Menu: Document Views- Print, Full Screen, Web Layout, Outline, Draft; Show\Hide – Ruler, Document Map, Gridlines, Thumbnails; Zoom Group; Window Group

7. MS Excel

a. File Menu: New, Open, Save, Save As, Print, Print Setup, Excel Options.
b. Home Menu: Clipboard-Format Painter; Font Group; Alignment Group – Cell Alignment, Indent, Cell Orientation, Wrap Text, Merge And Center; Number Group – Number Format, Increase Decimal, Decrease Decimal, Percent Style; Styles – Conditional Formatting, Cells Styles, Format As Table; Cell Group – Insert Row And Column, Delete Row And Column, Format Row And Column; Editing – Fill, Sort And Filter, Clear
c. Insert Menu: Tables – Pivot Tables, Tables; Illustration – Picture, Clip Art, Shapes, Smart Art; Charts – Types Of Charts, Design, Format, Layout; Hyperlink; Text – Text Box, Header And Footer, Word Art, Signature Line, Object, Symbol;
d. Page Layout Menu: Themes; Page Setup – Margins, Orientation, Size, Print Area, Breaks, Backgrounds, Print Titles; Scale To Fit – Width, Height, Scale To Fit; Sheet Options – Gridlines, Headings, Sheet Options Dialogue Box;
e. Formula Menu: Function Library - Insert Function, Auto Sum, Logical, Text, Date And Time;
f. Data Menu: Get External Data; Sort And Filter; Data Tools – Text To Columns, Data Validation, Goal Seek; Outline – Group, Ungroup, Subtotal

g. Review Menu: Spelling And Grammar, Thesaurus; Comment – New Comment, Delete Comment, Show All Comments; Changes – Protect Sheets, Protect Workbook, Share Workbook, Track Changes
h. View Menu: Workbook Views – Normal, Page Layout, Page Break Preview, Full Screen; Show/Hide – Rulers, Gridlines, Message Bar, Formula Bar, Heading; Zoom – Zoom To Selection; Window – New Window, Arrange All, Freeze Panes, Split, Hide

8. MS Power point

a. File Menu: New, Open, Save, Save As, Close, Power point Options
b. Home Menu: Clipboard; Slides – New Side, Layout, Reset, Delete; Font Group; Paragraph Group; Drawing – Shapes, Arrange, Shape Fills, Shape Outlines, Shape Effects; Editing – Find, Replace, Select
c. Insert Menu: Insert Table; Illustration – Picture, Clipart, Photo Album, Shapes, Smart Art, Chart; Text – Text Box, Header And Footer, Word Art, Slide Number, Date And Time, Symbol, Object; Media Clip – Movies, Sound Clips
d. Design Menu: Page Setup – Page Setup, Slide Orientation; Themes; Background – Background Styles, Format Background, Hide Background Graphics
e. Animation Menu: Transition To The Slide, Transition Sound, Transition Speed, Advanced Slide - On Mouse Click, Automatically After
f. Slide Show: Start Slide Show; Set Up – Set Up Slide Show, Hide Slide, Rehearse Timing, Record Narration
g. Review Menu: Spelling, Thesaurus; Comment; Protect Presentation
h. View Menu: Presentation Views, Master Views; Show/Hide; Zoom; Color/ Grayscale; Window

9. Internet

a. Concept Of www, Internet Surfing, E-Mailing

INDIAN TECHNICAL EDUCATION SOCIETY
MUMBAI

CERTIFICATE COURSE
IN
INFORMATION TECHNOLOGY (I T)

EXAM SCHEME: **THEORY PAPER 100 MARKS – 3 HRS.**
PRACTICAL 100 MARKS – 2 HRS.

[CIT / DCA – II / DCP & SA – I]

THEORY SYLLABUS

1) Computer Fundamentals
What is a Computer, Features of Computers, Uses, Types of Computers, History of Computers, Generation of computers, Other Peripherals, Types of Memory, Internal Storage, External Storage Computer system, Input and Output Devices, Keyboard familiarity Switching ON a computer, Shutting Down a computer, Essential care to be taken while working on a computer. Hardware, Disks, Hard disk, Floppy Disk, CD ROM, Software, Types of software, System software, Application Software, Utility Operating System, Languages, Compilers & Interpreters, Bits & Bytes, Central Processing Unit, What is Virus, Types of Viruses, Methods of Eliminating Viruses.

2) Windows
Getting started with windows, Introduction to windows, Desktop, Icons, My computer, Network neighborhood, Recycle bin, Notepad, Settings - Control Panel, Date/time Display, Background, Screen Saver, Appearance, Mouse, Printers, Adding a printer, Taskbar, Adding and removing programs, Find, Finding files, Help, Run.

3) Word Pad
Working with documents, Working with Text, Formatting Text, Printing a document.

4) Paint
Introduction to paint screen and toolbox, Drawing lines and shapes, Working with color, Erasing, Working with part of a picture, Changing how your Picture looks on screen.

5) Windows Explorer
Creating a folder, Changing the name of a file or folder, Copying a file or folder, Moving a file or folder, Deleting a file or folder, Retrieving deleted files

6) Networking Concept – I
What is networking, Types of networks, Required Network elements. Concept & Definition of Network services, Transmission media, File services, Print services, Application services, Message services, Database services, Communication media, Types of transmission media, Cables. Topology, Types of Topologies, Types of hubs, Network Connectivity, Repeaters, Types of repeaters, Bridges, Routers, Gateways, Network Interface card (NIC), Modem, Protocols

7) MS - Word

Introduction to word screen, Starting a new document, Entering text, File menu, New, Open, Close, Save, Save as, Print preview, Page setup, Print, Edit Menu, Undo, Redo, Cut, Copy, Paste, Clear, Select all, Find, Replace, Go to. 2View Menu, Normal, Print layout, Toolbars, Header & Footer, Comments, Full screen, Zoom, Insert menu, Break, Page numbers, Date & Time, Auto text, Symbol, Comment, Footnote, Caption, Picture, Text boxes, File, Object, Bookmark, Hyperlink etc.

Format menu, Font, Paragraph, Bullets & Numbering, Borders and Shading, Columns, Tabs, Drop, Cap, Change case, Background, Style, Tools menu, Spelling & Grammar, Language, Word count, Autocorrect, Track changes, Merge documents, Protect document, Mail Merge, Envelopes and Labels, Table menu & Window Menu.

8) MS - Excel

Introduction to Excel screen, Moving around, Creating a new workbook, Entering data, Moving or copy characters within a cell Copy only values, comments, or cell formats, Copy only visible cells Using Transpose, Exiting excel.

Automatically filling data, Fill in a series of numbers, Creating a custom fill series, Change or delete a custom fill series, Fill in a series from a formula, Select blank cells, Select cells that contain comments Editing cell contents, Clear contents, format or comments from cells Delete cells, rows or columns, Undo mistakes, Repeat last action, Find text or numbers, Insert blank cells, columns and rows.

Increase or Decrease no. of decimal places, Add or remove a currency symbol, Enter a formula, Enter a formula that contains a function Calculation operators in formulas, Comparison Operators, Switch to another sheet in a workbook, Select sheets in a workbook, Inserting a new worksheet, Moving and copying sheets.

Format text and individual characters, Copy formats from one cell or range to another, Change the font or font size, Shrink the font size to show all data in a cell, Change the text color, Make selected text or numbers bold, italic, or underlined, Apply borders to cells, Shade cells with solid colors, Shade cells with solid patterns, Remove borders Remove shading, Add background patterns to an entire sheet, Remove a sheet background pattern, Conditional formatting, Align data at top, center, bottom of cell, Rotate text in a cell.

Creating a chart, Change cell range used to create a chart, Change values in a chart, Delete a data series, Change category axis labels Change data series names or legend text, Select a different chart type.

Spelling, Autocorrect, Share workbook, Track changes, Merge workbook, Protection, Goal seek, Scenarios, Auditing. Sorting rows in ascending/descending order Sort rows based on contents of two or more columns, Tables, Goal seek, Pivot table, Filters, Advanced filters, Create custom headers and footers.

9) MS - PowerPoint

Introduction to PowerPoint window, Features, How is PowerPoint, Useful, Slides, Handouts and Speaker notes, Creating a Presentation using AutoContent Wizard, Viewing your Presentation, Editing your Presentation Outline, Saving the presentation.

Creating Blank Presentation, Types of Auto Layouts, Opening an existing presentation, Checking Spelling, Deleting slides, Moving Slides, Inserting a slides.

Slide Master, Working with Header and Footer, Drawing Toolbar, Changing Font and Font Size, Inserting a picture, Applying, Background Color, and Inserting Slides from file.

Rehearse Timings, Adding, and Slide Set up Show, Custom Animation Effect.

10) Internet

Concept of WWW, Internet Surfing & E-Mailing.

INDIAN TECHNICAL EDUCATION SOCIETY
MUMBAI

CERTIFICATE COURSE
IN
DESKTOP PUBLISHING (DTP)

EXAM SCHEME: **THEORY PAPER 100 MARKS – 3 HRS.**
PRACTICAL 100 MARKS – 2 HRS.

[DTP / DGA - I]

THEORY SYLLABUS

1) PageMaker – I
Process Overview, Environment, Toolbox, Dialog Box, Working with Ruler & Guides, Additional Help Resources, Working with Text, Text option, Using Story Editor, Printing.

2) PageMaker – II
Layout Solutions Working with Leading, Advance Character Formatting, Insertion & Removing Pages, Working with Columns, Graphics: An Overview, Drawing with PageMaker, Working with Graphics, Getting started with Colors, Cr\eating Color Library.

3) PageMaker – III
PageMaker Styles, Using Master Pages, Using Master Pages, Using PageMaker Templates, Working with the Add Continued Line, Balancing Columns, Applying Case of Text, Working with the Drop Cap, Using the Grid Manager, Using the Build Booklet Plug-In, Using Running Header & Footers, Header & Footer

4) Introduction To CorelDraw
Objects. Vs. Bitmaps, Corel Interface, Corel draw Controls, Working with Menus & Toolbars, Using Zoom & Pan Tools, Working With Dockers & Getting Help.

5) Star-Up & File Handling
Launching CorelDraw, Creating new Document, Opening Document, Importing Graphics & Text, Saving Drawing, Making Backup Files, Exporting Drawings.

6) Select, Move, Copy & Size
Selecting Objects, Moving, Copying, Resizing & Deleting Objects.

7) Complex Shape
Polygon and Stars, Creating Spirals, Drawing Grids and Drawing Perfect Shapes.

8) Nodes & Paths
Three Types of Nodes, Converting an Object to Curves and Working with Nodes.

9) Line & Curves
Using the Freehand Tool, Benzar Tool, Setting the Line Properties, Adding Arrowhead, Calligraphic Lines, Cutting Object Apart , Using Eraser Tool and Artistic Media Tool.

10) Page & Document Setup
Page Size & Orientation, Background Setting, Adding & Deleting Pages, Document Navigation and Viewing Document Info.

11) Tools For Precision
Working with the Rulers, Setting the Unit of Measures, Using Guidelines & Grid, Using Status Bar and Aligning Object.

12) Color And Fills
Solid Color Fills and Outline, Using Color Palettes, Using Eyedropper and Paint bucket, Color Management, Creating Fountain Fills, Adding Pattern to Objects, Adding a Textures Fill & Interactive Mesh Fill Tool.

13) Working With Text
Adding Text to a document, Formatting Text, Importing text, Text layout, Embellishing Text.

14) Text Special Effects
Skewing and Rotating Text, Creating Drop Shadows, Fitting Text to Path, Extruding Text and The Neon Effects.

15) Stacking & Layers
Changing the Staking Order and Working with Layers

16) Object Arrangement
Grouping Objects, Locking Objects, Combining & Breaking Objects Apart, Transforming Object and Shaping Objects.

17) Special Effects
Using Envelops, Blends, Adding Perspective, Creating Shadow Objects, The Power clip Command, Interactive Transparency Tool, Interactive Distortion Tool, Interactive, Contour Tool and Lens Docker.

18) Symbols, Clip Art & Bitmaps
Working with Symbols, Using the Scrapbook Dockers, Working with Bitmap Images, Acquiring Images.

19) Printing
Basic Printing, Printing Oversized Drawings, Alternate Printer Paper Options, Using a Service Bureau, Preflight and Print Preview, Creating PDF File.

20) Introduction to Photoshop
Getting Familiar with the Welcome Window, Introducing the Work Area, Working with Palettes, A Closer Look at the Image Window, Navigating Menu Commands.

21) Customizing Adobe Photoshop Elements
Adjusting Color-Management Settings, Choosing Setting in the Preset Manager, Personalizing Your Preferences.

22) Acquiring Images From Scanner And Digital Cameras
Installing Plug-In Files, Adjusting Scanner Settings, Scanning Different Kinds of Images, Scanning the Final Image, Accessing Images on the Camera Saving Images.

23) Creating, Opening & Converting
Creating a New Document, Document Setting for Print, Document Setting for Web Images, Opening and Browsing Image Files and Converting Image Information.

24) Printing Images
Printing Digital Images, Consideration for Printing Images with Text, Improving Printer Output.

25) Photoshop Elements & Color
Color Theory, Computers and Color, Color and Photoshop Elements, Photoshop Elements Color Correction Tools, Color and Composite Images.

26) Tonal range and color correction.
Introducing Selection Tools, Correcting Tonal Range, Using the Histogram with Tonal Range Tools, Changing Colors with Color Effect Tools, Replacing Colors, Introducing Color-Correction Tools, and Color-Correction Variations.

27) Applying Filter And Effects
Previewing Filters and Effects, Introducing Blur Filters, Introducing Filter Effects with Toolbox Tools, Variation with Blur Filters, Applying Artistic Filter, Exploring Effects.

28) Working With Layers & Layer Style
Introducing the Layers Palette, Introducing Fill Layers, Introducing Adjustment Layers, Correcting Images with Layers, Merging Layers.

29) Adding Text & Shapes To Images
Introducing the Type Tool, Adding Graphics to an Image, Drawing and Painting Tools, Creating Transparent Text, Modifying Custom Shapes.

30) Repairing Images
Repairing Folds and Tears, Fine-Tuning the Image, Rebuilding a Damaged Photo.

INDIAN TECHNICAL EDUCATION SOCIETY
MUMBAI

CERTIFICATE COURSE
IN
'C' PROGRAMMING (C.PROG.)

EXAM SCHEME: **THEORY PAPER 100 MARKS – 3 HRS.**
PRACTICAL 100 MARKS – 2 HRS.

THEORY SYLLABUS

1) Introduction & Program Structure
History of C, Why Use C, Compiler, Memory Model, Header and Body, Use of comments, Construction of the program, /*Comments*/, {Body} braces, File names, Standard compiler library.

2) Data Concept
Interactive Programs, Variables, Constants and Data Type, Declaring Words, Bytes & Bits, Key and Reserve Words.

3) Input & Output Operations
Character strings, printf(), scanf(), Single character, Getchar(), Putchar().

4) Statements & Operators
Expressions, Conversions and Typecasting, Relational Operators, Relational Expression, Logical Operators.

5) Loops & Control
Control Statements for decision-making, Branching and jumps (if statement), While loop, Do while for loop.

6) Input /Output And Redirection
Buffer, Redirection & Files.

7) Storage Classes
Automatic Variables, External Variables, Scope and Functions.

8) Function & Arguments
Global and Local Variables, Recursion, Altering Variables in Calling Program.

9) Strings And Arrays
Dimensions and initialization of arrays, Strings function.

10) Pointers, Structure & Unions
Pointers & Pointer Operations, Pointers and Multidimensional arrays, Pointer and Strings, Union, Structures, Pointers to Structures.

11) Input, Output And Disk Files
Streams and Files, Text Streams, Binary Streams, Standard I/O, fopen() and fclose() function, fprint(), fscanf() and fputs(), Random access: fseek() and ftell().

INDIAN TECHNICAL EDUCATION SOCIETY
MUMBAI

CERTIFICATE COURSE
IN
'C++'PROGRAMMING (C++)

EXAM SCHEME: **THEORY PAPER 100 MARKS – 3 HRS.**
PRACTICAL 100 MARKS – 2 HRS.

THEORY SYLLABUS

1) Introduction
Introduction to object oriented programming, Data-Types, Type Conversion, Structure, Screen Layout, Compiling, Debugging and Defining Variables.

2) Programming Structure
C++ Syntax / Meaning of C++ header file; iostream / Screen Input / Output / escape character Assignment (=) / Arithmetic's Operator (+,-,*,/,%) / Logical operator (==,!=,>,<,<=,>=)

3) Control Structure
If, if/else, Asignment Operators (+=,-=,*=,/=) / Increment and decrement operators, while / for / switch do / while break / continue.

4) Simple Input / Output Operations
Character Strings, Printf(), Scanf(), Single characters, Getchar(), Putchar(),

5) Function
Program component in C++ / Maths Library function, Function, Function Definition & Prototypes, Header Files, Random Number generation / Recursion Iteration / Functions With empty Parameter List Inline Function / Reference & Reference Parameters / Default Arguments.

6) Arrays
Declaring Arrays, Example using Arrays / Passing Arrays to function / Sorting, Arrays Searching Arrays: Linear & Binary Search Multiple – Scripted Arrays.

7) Pointer And String
Pointer Variable Declaration & Initialization Pointer operator Calling Function by Reference, Pointer Expression & Pointer Arithmetic, Bubble Sort Using Call-By-refernce Relationship Between Pointer & Arrays, Arrays of Pointer, Function Pointers / String Manipulation Function.

8) OOPs
Thinking About Objects, Structure Definition, Accessing Members of Structures, Class Scope and Accessing Class Member Controlling Access to Members.

9) Input / Output
Console I/O, the ios Class, Formatting Flags, Manipulators, File I/O with Streams, File Opening Modes, Error Flags.

10) Templates
Creating templates, Class templates, Function templates and template arguments, Implementation of OOP

INDIAN TECHNICAL EDUCATION SOCIETY
MUMBAI

CERTIFICATE COURSE
IN
WEB PAGE DESIGNING (WPD)

EXAM SCHEME: **THEORY PAPER 100 MARKS – 3 HRS.**
PRACTICAL 100 MARKS – 2 HRS.

[WPD / DWAP – I / DGA - II]

THEORY SYLL ABUS

Internet Basics
Basic Concepts, Communication On The Internet, Internet Domains, Internet Server Identities, Establishing Connectivity On The Internet, Client IP Address, Overview Of TCP/IP And Its Services, Internet Protocol, The World Wide Web, Telnet, Web Server, Web Client / Browser

HTML
Commonly Used HTML Commands, Titles And Footers, Text Formatting, Text Styles
Other Text Effects, Spacing (Indenting Text), Lists, Types Of Lists, Adding Graphics to HTML Documents, Width And Height Attribute, Align Attribute, Alt Attribute, Tables, Width And Border Attribute, Cellpadding Attribute, Cellspacing Attribute, Bgcolor Attribute, Colspan And Rowspan Attributes, Linking Documents, Images As Hyperlinks, Href, Frames,

Dynamic HTML
Cascading Style Sheets, Class, Using The <Span>…</Span>Tag, External Style Sheets,
Working With Javascript Style Sheets (Jsss), Using The <Div>…</Div>Tag
To Move Forward.

Javascript
Introduction/What You Need to Get Started, Placing JavaScript in an HTML File, Using Variables, Using Functions, Conditional Statements/Loops, Event Handlers, Objects, Document Object, Window Object, JavaScript Arrays, Math, Number, and Date Objects, Handling Strings, Working with Forms, Working with Frames, An Introduction to Advanced Techniques

Dreamweaver
What is Dreamweaver? Setting Up Your First Site, Using Basic HTML in Dreamweaver, Adding Text to Your Web Page, Inserting Images, Establishing Web Links, Creating Lists, Setting Up Tables, Making Client-Side Image Maps, Interactive Forms, Using Frames and Framesets, Accessing External Programs, Creating and Using Objects, Creating and Using Behaviors, Adding Multimedia Elements, Adding Video to Your Web Page, Using Audio on Your Web Page, Inserting Shockwave Elements, Building Style Sheet Web Pages, Working with Layers, Working with Timelines Maximizing Browser Targeting, Using the Repeating Elements Library, Publishing via Site FTP, Utilizing Dreamweaver Templates.

Introduction to GIF Animator

Flash

Parts of a Script, Output Window, Task: Send a Message to the Output Window, Local and Global Variables, Comparisons and Operations, Task: Operations, Conditions, Loops, Functions, Dot Syntax, Comments, Debugging, Controlling the Flow of the Movie, Stopping the Movie, Jumping from Frame to Frame, Creating Buttons, Targeting Movie Clips, Movie Clip Scripts, Mouse Location, Move Clip Rotation, Stretching and Shrinking Movie Clips, Visibility.

INDIAN TECHNICAL EDUCATION SOCIETY
MUMBAI

CERTIFICATE COURSE
IN
COMPUTERS PROGRAMMING (CP)

EXAM SCHEME: **THEORY PAPER 100 MARKS – 3 HRS.**
PRACTICAL 100 MARKS – 2 HRS.

[CP / DCP & SA – II]

THEORY SYLLABUS

COMPUTERS PROGRAMMING (CP) [DATABASE PROGRAMMING]

1) MS-Access – I
Introduction, What is Access, What is in an Access database file, Creating a new database, Opening an existing database, importing data from other applications, The database file in Access, Renaming a database, Developing applications in Access, Use of linked tables.
2) MS-Access – II
The importance of good table design, Datasheet basics, Creating a new table, Specifying the primary key, Setting field properties, Using the input mask wizard, Key terminology, Fields and field properties, Field names, Data types.
3) MS-Access – III
The advantage of using tables and relationships, "Normalized" table design, Creating relationships between tables, Editing and deleting relationships, One- to- many relationships, Referential integrity, Application to the assignment.
4) MS-Access – IV
Using queries to get the information you need, Creating a query, Five basic query operations, Sorting, Selection.
5) MS-Access – V
The advantages of forms within forms, Creating the main form, Creating the sub form, Linking the main form and sub form, Linking forms and sub forms manually, Non- synchronized forms, Aesthetic refinements, Changing the form's caption, Eliminating unwanted scroll and navigation buttons, Application to the assignment.
6) Visual Basics – I
Menu Bar, Tool Bar, Project Explorer, Properties Window, Form Layout Window, Toolbox.
7) Visual Basics – II
Form Designer, Object Browser, Working with controls, Setting form properties, Developing an application Variables, Data types, Control Structures.
8) Visual Basics – III
If –then-else statement Select - case statement, Do-while – loops statement, Do---loop while statement, Do--- loop until statement, For---Next loop statement
9) Visual Basics – IV
Visual Basic Built-in Functions, Date and time functions, Comparison and relational Operators.

INDIAN TECHNICAL EDUCATION SOCIETY
MUMBAI

CERTIFICATE COURSE
IN
COMPUTER AIDED DESIGN (CAD)

EXAM SCHEME: **THEORY PAPER 100 MARKS – 3 HRS.**
PRACTICAL 100 MARKS – 2 HRS.

[CAD]

THEORY SYLLABUS

CAD

1) **Menu Bars And Toolbars**
   i) File, Edit, View, Insert, Format, Tools, Dimension
   ii) Draw Toolbar, Modify Toolbar, Dimension Toolbar, Object Snap Toolbar, Status Toolbar, Object
   iii) Properties Toolbar
2) **Draw Geometric Objects**
   i) Line, Polyline, Spline, Multiline, Construction Lines, Rectangle, Arc, Circle, Polygon, Donut, Point, Single Line Text, Multiline Text, Text Edit, Hatch, Gradient, Boundary, Hatch Edit, Ellipses
3) **Modify Toolbars**
   i) Erase, Copy, Mirror, Offset, Array, Move, Rotate, Scale, Stretch, Trim, Fillet, Chamfer, Explode, Join, Extend, Break
4) **Dimension Toolbar**
   i) Linear Dim, Aligned Dim, Ordinate Dim, Radius Dim, Diameter Dim, Angular Dim, Arc Length, Quick Dim, Baseline Dim, Continue Dim, Dimension Inspection, Dimension Text Edit, Dim Edit, Dimension Update, Dimension Style, Tolerance, Center Mark
5) **Overview Of Line Types And Line Weight**
   i) Load Line Types, Set The Current Line Type, Change The Line Type Of An Objects, Control Line Weights, Overview Of Line Weight
6) **Layer And Block Commands**
   i) Create Layer, Current Layer, User Layers To Manage Complexity, Change Layer Setting And Layer Properties, Create Block, Make Block, Define Attribute
7) **Coordinate System / Standard Paper Size**
   i) Absolute / Relative / Polar Methods
      (1) Standard Paper Size: A4, A3, A2, A1, A0
   ii) Units : Feet, Inch, Millimeters, Meters, Centimeter, Kilometers
8) **3d Commands**
   i) Extrude, Union, Subtract, Intersect, Revolve, Press Full, Poly Solid, Align, 3d Array, 3d Mirror
   ii) Solid Toolbar : Cone, Pyramid, Sphere, Wedge, Box
   iii) Surface Modeling, Wireframe Modeling
   iv) View A Parallel Projection In 3d

9) Other CAD Commands

i) Inquiry Command, Purge Command, Drafting Setting, Properties, Match Properties, Text Style, Point Style, Multiline Style, UCS And WCS, Region, Regen, Redraw

10) Function Keys And Status Toolbar

i) F1, F2, F3, F4, F5, F6, F7, F8, F9, F10, F11, F12

11) Plot Drawing

i) Setup A Layout, Overview Of Layout Setup, Select A Paper Size For A Layout, Determine The Drawing Orientation Of A Layout, Adjust The Plot Origin In A Layout, Setup The Plot Area Of A Layout, Set The Plot Scale For A Layout, Set The Line Weight Scale For A Layout, Zoom And Pan In Non Rectangular Viewports, Plot Drawing, Overview Of Plotting, Set Up A Page For Plotting, Set Paper Size, Position The Drawing On The Paper, Control How Objects Area Plotted, Set Plot Scale, Preview A Plot

12) Use Precision Tools

i) Use Coordinates And Coordinate System, Overview Of Coordinate Entry, Enter 2d Coordinates, Enter 3d Coordinates, Control The User Coordinate System (Usc) In 2d, Set Auto Snap, Adjust Grid And Grid Snap, Restrict Cursor Movement, Adjust Grid And Grid Snap, Specify Distances, Enter Direct Distances, Extract Or Calculate Geometric Information From Objects, Obtain Distances, Angles And Point Locations, Obtain Area Information, Use The Geometry Calculator, Shortcut Keys

13) Parametric

i) Geometric Constraints : Coincident / Perpendicular, Parallel, Tangent, Horizontal, Vertical, Collinear/Concentric Smooth, Symmetric, Equal
ii) Dimensional Constraints : Aligned / Horizontal / Vertical / Angular / Radial / Diameter
iii) How To Create Title Block And Layout And Scale Factor : - Reducing Scale As 1:1, 1:2, 1:4, 1:8, 1:10, 1:16, 1: 20, 1:30, 1:40, 1:50, 1:100
iv) Enlarge Scale : - 2:1, 4:1, 8:1, 10:1, 100:1

14) Types Of Modeling

i) Wireframe, Surface, Solid
ii) 3d Commands : Poly Solid / Planar Surface / Press Full
iii) Extrude, Loft, Revolve, Sweep And Boolean Operator, Union, Subtract, Intersect, Frustrum, Cone, Frustum Pyramid
iv) Section Plane, 3d Move, 3d Align, 3d Array, 3d Mirror

15) Mesh Modeling

i) Mesh Box, Mesh Cone, Mesh Cylinder, Mesh Pyramid, Mesh Sphere, Mesh Wedge, Mesh Torus
ii) Modeling Meshes, Revolved Surface Modeling Meshes, Edge Surface Modeling Meshes, Ruled Surface Modeling Meshes, Tabulated Surface

16) Render

i) Rendering Light :- Point, Spot, Distant
ii) Shadows : - Ground Shadows, Full Shadows
iii) Material :- Material Mapping
iv) Express Tools :- Explode Attributes, Replace Block, Import Attributes, Export Attributes, Arc Aligned, Auto Number, Enclose In Object, Convert To Mtext, Break Line Symbol

17) 3d Command

i) Extrude Faces, Taper Faces, More Faces, Copy Faces, Offset Faces, Delete Faces, Rotate Faces, Color Faces
ii) Cylindrical Helix, Elliptical Cylinder
iii) Move Gizmo, Rotate Gizmo, Scale Gizmo

INDIAN TECHNICAL EDUCATION SOCIETY
MUMBAI

CERTIFICATE COURSE
IN
3DS MAX

EXAM SCHEME: **THEORY PAPER 100 MARKS – 3 HRS.**
PRACTICAL 100 MARKS – 2 HRS.

[3D MAX]

THEORY SYLLABUS

Topic I
Introduction: Coordinate Systems in 3ds Max, Layers, Settings and Startup Configuration, Basic Lofting Concepts

Fine-Tuning Productivity Via the 3ds Max Interface: Using the Align Tool and Transform Gizmos

Topic II
Basic Modeling : Setting Up a Scene, Working with 2D Shapes, Cloning Objects and Using More Modifiers, Using Align Tools to Assemble the Building

3D Modeling : Applying Modifiers to 3D Primitive Objects, Using Lofting to Create 3D Objects, Controlling Lofted Objects Using the Linked XForm Modifier, Box Modeling

Cameras : Camera Basics, Scene Composition

Basic Lighting : Painting with Light, Using Sunlight to Calculate Shadows, Using Omni Lights to Simulate Bounced Light

3D Lighting : Attenuating Light Using Standard Omni Lights, Adding Spotlights to the Scene for Accent, Adjusting Shadow-Mapped Shadows, Simulating Shadows Using Projector Maps, Projecting Maps for Efficiency

Topic III
Rendering : Rendering Options, The Render Scene Dialog, The Rendered Frame Window, Rendering for Animations, Rendering for Print Output

Creating Convincing Materials : The Material Editor: Interactive Editing, Specular Highlights, Creating Patterned Materials, Using Mapping Coordinates to Size Maps, Creating the Illusion of Geometry Using Bump Maps, Generating Reflections in Materials

3D Materials : Masking Techniques, Applying the Mask Map Type, Assigning Materials to Objects at Face Level, Material Libraries: A Management Tool

Global Illumination : Simulating Bounced Light Using Global Illumination, Radiosity Rendering, Radiosity Meshing Parameters, Exposure Control, Radiosity Solution Refinement, Materials for Radiosity Rendering

Basic Animation : About Key frame Animation, Set Key Animation Mode, The Track View– Dope Sheet

3D Animation : Animating Using Controllers and Constraints, Using Hierarchical Linking for Extra Control, Using the Track View–Curve Editor

Effects : Atmospheric Effects, Adjusting Particle Flow Effects,

Topic IV

Simplified Animation Using Inverse Kinematics : Understanding Inverse Kinematics, Using Interactive IK, Animating with the HI Solver

Dynamics and Scripting : Using Reactor to Simulate Collision Dynamics, Rigid Body Dynamics, Simulating Cloth, MAX Script Routines

Scene Assembly: The Asset Browser, Selective Merging, Compositing Rendered Scenes

INDIAN TECHNICAL EDUCATION SOCIETY
MUMBAI

CERTIFICATE COURSE
IN

REVIT ARCHITECTURE

EXAM SCHEME: **THEORY PAPER 100 MARKS – 3 HRS.**
PRACTICAL 100 MARKS – 2 HRS.

THEORY SYLL ABUS

INDRODUCING AUTODESK REVIT ARCHITECTURE 2011
Acknowledgments, About the Authors, Contents, Introduction.

The Revit Architecture :
Userinterface home screen, main screen

View zoom and pan tools, view properties, other view controls ,adding new views.
Modelling:
Levels, basic editing tools, creating and modifying column grid walls, modifying wall structure, creating doors and windows, creating curtain walls, creating floors, creating ceiling, creating stairs, creating roofs.

Constraints and dimensions temporary dimensions, parameters, dimensions, equality constraint and lock, spot dimensions, units.

Visibility controls:
Essential concepts of visibility, object style, properties palette foe view, visibility / graphics overrides, view range, filters, view templates, links templates, work sets

Introduction to families:
Understanding family organization**,** working with families

Massing:
Mass objects, reference and work forms, preparing to create mass forms, editing forms, loadable mass families, face-based modeling, creating mass families from imported geometry.

Groups:
Group organization, creating and editing a group, placing a group, special , loading, and reloading group, practical considerations.

Rendering:
Rendering workflow, setting the background, adding and adjusting material, real – time rendering.

Working with other files;
Linking Revit models, controlling display, working with CAD files, exporting DWF files, using raster files.

Rooms and areas:
Rooms, areas.

Tags, schedules, and keynotes:
Tags, schedules, keynotes.

Drawing:
Detail and drafting views, component symbol fundamentals, detailing tools, creating and managing detail libraries.

Sheets
Abouttitle blocks and sheets, setting up sheets, organizing sheets, exporting sheets and DWF.

Design options:
Design option terminology, setting up design option, editing design options, applying design options to view and accepting the primary, tags and annotation in design option.

Phases:
Phasing tools , phases, infill elements, demolishing elements, rendering and existing phases.

Creating families:
preparing to create a family, examining the tool chest, the bigger picture and advanced concepts.

Revisions:
Numbering revision, drawing revision clouds, issuing a revision.

Collaboration:
Coordinating work across disciplines, exporting to non-Revit formats

INDIAN TECHNICAL EDUCATION SOCIETY
MUMBAI

CERTIFICATE COURSE
IN

SOLID WORKS

EXAM SCHEME: **THEORY PAPER 100 MARKS – 3 HRS.**
PRACTICAL 100 MARKS – 2 HRS.

THEORY SYLL ABUS

Features:
extruded boss/ base, revolved boss/base, swept boss/base, lofted boss/base ,boundary boss/base, extruded cut, hole wised, revolved cut, swept cut, lofted cut, boundary cut, fillet, liner pattern, bib, draft, shell wrap, intersect, mirror, reference geometry, curves, instant 3d.

Sketch:
sketch, smart dimension, line, circle, spline, plane, corner rectangle, counterpoint arc, ellipse, text, straight slot, polygon, sketch fillet, point, trim entities, convert entities, offset entities, mirror entities, liner sketch pattern, move entities, display/ delete relations, repair sketch, quick snaps, rapid sketch.

Surfaces:
Extruded surface, revolved surface, swept surface, lofted surface, boundary surface, filled surface, freeform, planar surface, offset surface, ruled surface, filet, delete face, replace face, extend surface, trim surface, untrim surface, knit surface, thicken, thickened cut, cut with surface, reference geometry, curves.

Assembly model:
Top down assembly, bottom up assembly, concepts, add component to the assembly, create component assembly mode, assembly constraints – mate, align, insert, co-rod sys, tangent view- explode view, edit position.

Drawing- detailing [drafting]:
Template format insert – drawing view- general projection, detailed, auxiliary, sheet, dimension, text.

Sheet metal:
Base flange/tab, convert to sheet metal, lofted –bend, edge flange, milter flange, hem, jog, sketched bend, cross-break, corners, forming tool, extruded cut, simple hole, unfold, fold, flatten, no bends, rip, insert bends.

Mould tools:
Planar surface, offset surface, radiate surface, ruled surface, filled surface, knit surface, draft analysis, undercut analysis, parting line analysis, split line, draft, move face, scale, insert mould folders, parting lines, shut-off surfaces, parting surface, tooling split, core.

INDIAN TECHNICAL EDUCATION SOCIETY
MUMBAI

CERTIFICATE COURSE
IN

Pro / E

EXAM SCHEME: **THEORY PAPER 100 MARKS – 3 HRS.**
PRACTICAL 100 MARKS – 2 HRS.

THEORY SYLL ABUS

1. INTRODUCTION

Introduction to Computer Aided Designing for Pro-E. Sketching environment of Pro-E. 2D sketching Tools, parametric concepts, Constraints and Dimensional relationships

2. Pro-Engineer User Interface.

Menu bar, Tool bar, File Management, View display, Model display, Model tree, Datum Display context-sensitive, working directory, View orientation, Dynamic viewing,
Unit setting, material defining, Geometric Dimensioning, Naming feature,
parent-child relationship, modal analysis, plotting in Pro-E configuration. The printer Defining map keys, Layers, selecting features & Entities.

3. Creating a Sketch.

Fundamentals of sketching, sketching elements, sketch plane, grid options, Constraining, line, Arc, Circle, Rectangle, Fillet, Centre line, Selection Tool, using mouse to sketch, Spines, Text, Elliptical fillet, Dimensioning, Linear, Radial Angular, perimeter, ordinate Reference modifying dimensions sketcher relations.
Sketcher Tutorial. Creating a new object in sketch mode.

4. Extruding / Revolve, Modifying & Redefining Features.

Steps for creating a new part, protrusions, cuts, & slots, Extrude direction, Revolve direction, Depth options, material side creating extruded feature.
Features based modeling, parent-child relationships, creating revolve feature, Datum planes in pro-E, creating datum planes.
Modifying features – Dimensions modification, Redefining feature.
Extrude Tutorial – Creating the parts of Extrude & Revolve.

5. Feature Construction Tools.

The whole option- placement, Depth, Linear, Radial, Diametric & coaxial holes
Shelled parts - Thicken the part.
Ribs - Creating ribs.
Drafts - Neutral planes, hinge, curves, No split draft.
Rounds - Creating a sound, Radii options.
Chamfer - Creating chamfer & options.
Patterned - Pattern option, Dimensions variation. Hole, Shell, Rib, Draft, Round, Chamfer & pattern.

6. Feature Manipulation Tools.

Model tree, Edit, Feature definition, suppressing, inserting,
Reordering, Regenerating feature, Grouping features, copying features,
copy, mirror, Rotate, Translate, user defined feature, UDF menu Relations,
Family table, cross sedition

7. Advance modeling Techniques.

Sweep & various section sweep fundamentals, sweep & various sweep options – parallel, Rotational & General.
Sweep Blend, Helical sweep, spring feature, Blend section to surfaces,
Blend Between surface, Toroidal etc.

8. Assembly Modeling

Important terms related to assembly mode, creating Top-down assembly,
creating Bottom-up assembly, placement constraints, Mate, insert, align, tangent etc.

9. Surface Modeling

Introduction to surface, Creating Extrude, Revolve, Sweep, Blended, swept Blend, Helical sweep surface & variable section sweep.
Copying surface, mirror, move, merge, trim, fill surface, intersect, offset, Thickness, creating round & chamfer.

10. Creating Drawing

Drawing fundamental, Drawing setup file, Sheet formats, creating drawing
creating general view, orthographic views, sectional views, auxiliary views, Dimensioning & Tolerance, line style & fonts, Creating BOM & Ballons, Creating notes.

INDIAN TECHNICAL EDUCATION SOCIETY
MUMBAI

CERTIFICATE COURSE
IN

CATIA

EXAM SCHEME: **THEORY PAPER 100 MARKS – 3 HRS.**
PRACTICAL 100 MARKS – 2 HRS.

THEORY SYLL ABUS

Sketcher:
CATIA interface, profile pre-defined profile, sketching technique , containing auto constraining, dimensioning, sketch operations, sketch transformation, sketcher seating, animation, capturing images video, sketch analysis, copying and pasting the sketches, working with the customize axis system etc**.**

Part modeling [part design]:
Creation of sketch based feature, parent child relationship, specifications [model tree],dress up feature, transformation feature, surface –based feature, Boolean operations on feature, advanced –replication feature, design tables [family tables], formulas [relation in dimensions], creation parameters, catalogues, parameterization analysis, customizing user interface and icons, modeling techniques, etc.

Surfacing [wire frame and generative shape design]:
Generation of wire frame model using lines/ points/ spines etc. projection curves, combination curves, helix, boundary etc., creation of surfaces, extruding surfaces, revolving surface blended surface , lofted surface etc., surface operation – splitting, joining, scaling the surface, constraints, extrapolating surface, converting solid model into surface model, datum feature, sweep [explicit], application of surface design, giving fillets [shape fillet, edge fillet, tri tangent fillets], scaling and affinity.

Assembly:
Introduction to CATIA assembly, introduction to principle of top down, bottom up assemble, assembly constraints, free hand manipulation of components, assemble array, checking the clearances, creation of BOM etc.

Drafting:
Introduction to drafting, working view/background views, placing views like projection views, sectional views clip view, dressing up view, dimensioning, annotations, generation of bill of materials, geometry creation, geometry edition etc.

Sheet metal design:
Understanding the user interface, terminology and sheet metal parameters. Generating sheet metal walls, bends, and flanges and cut outs, creating finished components from the flat pattern. Creating flat pattern from the finished bent component. Generating 2d flat pattern manufacturing drawing.

INDIAN TECHNICAL EDUCATION SOCIETY
MUMBAI

DIPLOMA OFFICE AUTOMATION
(DOA)

THEORY PAPER I : Syllabus for this paper is same as Certificate Course in MICROSOFT OFFICE (MSO) 100 Marks
Refer this syllabus booklet Page No. _____

THEORY PAPER II : Syllabus for this paper is same as Certificate course in INFORMATION TECHNOLOGY (I T) 100 Marks
Refer this syllabus booklet Page No. _____

PRACTICAL I & II : Two Separate Practicals
Practical – I same as MSO 100 Marks
Practical – II same as I T 100 Marks

Total : (400 marks)

INDIAN TECHNICAL EDUCATION SOCIETY
MUMBAI

DIPLOMA COMPUTER APPLICATIONS
(DCA)

THEORY PAPER I : Syllabus for this paper is same as Certificate Course in MICROSOFT OFFICE (MSO) 100 Marks
Refer this syllabus booklet Page No. _____

THEORY PAPER II : Syllabus for this paper is same as Certificate course in ACCOUNTING TALLY (ACT) 100 Marks
Refer this syllabus booklet Page No. _____

PRACTICAL I & II : Two Separate Practical
Practical – I same as MSO 100 Marks
Practical – II same as ACT 100 Marks

Total : (400 marks)

INDIAN TECHNICAL EDUCATION SOCIETY
MUMBAI

DIPLOMA COMPUTER PROGRAMMING AND SOFTWARE APPLICATION
(DCP&SA)

THEORY PAPER I : Syllabus for this paper is same as Certificate Course in
COMPUTER PROGRAMMING (C P) 100 Marks
Refer this syllabus booklet Page No. _____

THEORY PAPER II : Syllabus for this paper is same as Certificate course in
INFORMATION TECHNOLOGY (I T) 100 Marks
Refer this syllabus booklet Page No. _____

THEORY PAPER III: Syllabus for this paper is same as Certificate course in
DESK TOP PUBLICATIONS (DTP) 100 Marks
Refer this syllabus booklet Page No. _____

OR

ACCOUNT TALLY (ACT) 100 Marks
Refer this syllabus booklet Page No. _____

PRACTICAL I, II & III : Three Separate Practicals

Practical – I	same as for C P	100 Marks
Practical – II	same as for I T	100 Marks
Practical – III	same as for DTP or ACT	100 Marks

Total : (600 marks)

INDIAN TECHNICAL EDUCATION SOCIETY
MUMBAI

DIPLOMA GRAPHICS AND ANIMATION (DGA)

THEORY PAPER I : Syllabus for this paper is same as Certificate Course in DESK TOP PUBLISHING (DTP) 100 Marks
Refer this syllabus booklet Page No. _____

THEORY PAPER II : Syllabus for this paper is same as Certificate course in WEB PAGE DESIGNING (WPD) 100 Marks
Refer this syllabus booklet Page No. _____

PRACTICAL I & II : Two Separate Practical
Practical – I same as DTP 100 Marks
Practical – II same as WPD 100 Marks

Total : (400 marks)

INDIAN TECHNICAL EDUCATION SOCIETY
MUMBAI

DIPLOMA IN MECHANICAL CAD

THEORY PAPER I : Syllabus for this paper is same as Certificate Course in COMPUTER AIDED DRAFTING (CAD) 100 Marks
Refer this syllabus booklet Page No. _____

THEORY PAPER II : Syllabus for this paper is same as Certificate course in SOLID WORKS (S W) 100 Marks
Refer this syllabus booklet Page No. _____

THEORY PAPER III: Syllabus for this paper is same as Certificate course in Pro / E 100 Marks
Refer this syllabus booklet Page No. _____

PRACTICAL I, II & III : Three Separate Practicals

Practical – I	same as for CAD	100 Marks
Practical – II	same as for S W	100 Marks
Practical – III	same as for Pro / E	100 Marks

Total : (600 marks)

INDIAN TECHNICAL EDUCATION SOCIETY
MUMBAI

DIPLOMA IN ARCHITECTURE CAD

THEORY PAPER I : Syllabus for this paper is same as Certificate Course in COMPUTER AIDED DRAFTING (CAD) 100 Marks

Refer this syllabus booklet Page No. _____

THEORY PAPER II : Syllabus for this paper is same as Certificate course in 3DS MAX 100 Marks

Refer this syllabus booklet Page No. _____

THEORY PAPER III: Syllabus for this paper is same as Certificate course in REVIT 100 Marks

Refer this syllabus booklet Page No. _____

PRACTICAL I, II & III : Three Separate Practicals

Practical – I	same as for CAD	100 Marks
Practical – II	same as for 3DS MAX	100 Marks
Practical – III	same as for REVIT	100 Marks

Total : (600 marks)

INDIAN TECHNICAL EDUCATION SOCIETY
MUMBAI

CERTIFICATE COURSE
IN
COMPUTER MAINTENANCE[CM]
(WITH DEGITAL ELECTRONICS)

EXAM SCHEME: THEORY 100 MARKS – 3 HRS.
PRACTICAL 100 MARKS – 2 HRS.

[CM / DCHNES – I]

THEORY SYLLABUS

1. BASIC ELECTRONICS: -

A) BASIC ELECTRONICS: -

- Concept of open & short circuit.
- Ohm's law, current, voltage & Resistance relation, Power unit Power consumption.
- Soldering & de-soldering Technique.

B) ELECTRONIC COMPONENTS: -

- Component's: - Resistor, capacitor, inductor, Transformer.
  - Types
  - Values (by color code, Number system)
  - Testing
  - Use's

C) SEMICONDUCTOR: -

- Electric properties of conductor, Semi-conductor & Insulator.
- Definition of Semi-conductor.
  - Suitable material for formation of P-Type & N-Type Semi-conductor.
  - Impurities of P-Type & N-Type material.
- Diode
  - Junction Diode, Zener Diode, Light Emitted Diode, photo Diode
  - 1) Types 2) Number System 3) Testing 4) Uses.
- Transistor
  - Types: -NPN & PNP, Germanium & Silicon. Testing of Transistor using Multimeter.
- Integrated circuit (IC's)
  - Introduction, Types of IC's, Merit & De-merit of IC's.

2. DIGITAL ELECTRONICS: -

- Different number system, Study of different codes, Study of Logical Gates & Universal Gates, Binary adder & Subtractor, Demorgan's law.
- Study of FLIP-FLOP: SR, JK, MS-JK, D, SR-T.
- Counter: Binary, BCD, Mod-Nth, UP and Down, Ring counter, Johnson Counter.
- Registers: Serial and parallel registers. (Right/Left)
- A/D and D/A Converters:

- Basic D/A converter, Ladder and Weighted type.
- Basic A/D converter, SAR, Counter ramp type.

- Combination network using Gates:

  - Encoder
  - Decoder
  - Parity generator
  - Multiplexer
  - De-Multiplexer
  - Parity encoder

- Semiconductor Memory: RAM, ROM, PROM, EPROM, EEPROM, Static and dynamic memory.
- Flash memory.

3. INTRODUCTION

- Block diagram of PC System. Different Input and Output devises.
- Physical layout of Mother board (Socket-7, Slot-1 and Dual)
- Different CPU (P-I, P-II, P-III and P-IV) advantages and disadvantages.
- Study of RAM used in PC.
- Different connectors, Cables and Sockets use in system.
- Study of C-MOS (Award/AMI bios)

4. SWITCH MODE POWER SUPPLY (SMPS): -

- Basic principal of SMPS.
- Block diagram of AT SMPS & AT-X SMPS.
- Color code of wires, different voltages and current outputs.
- Introduction to UPS, Block diagram, Installation.

5. H.D.D.

- Study of HDD drives (Types Capacity, Size, etc.)
- Physical installation on HDD.
- Jumper Setting of HDD.
- Partitioning and Formatting of Hard Disk.
- Study of different Interface (IDE, ATA, WATA, ATAPI, etc.)

6. MONITORS (VIDEO DISPLAY UNIT)

- Study of different Video Display Units (LCD / LED)
- Block diagram of Color VGA monitor.
- Study of different display Adapter Cards.
- Study of Resolution and its setting.
- Installation of Display Adapter.

7. SYSTEM SOFTWARE & DIAGNOSTIC TOOLS

- Installation of Window. (Windows XP / 7 / 8)
- Study of Internal and External DOS Commands
  (Dir, Drive select, Check disk, CD, MD, RD, Copy, Fdisk, Format, Disk Copy, Scandisk, Ver, Time, Date, etc.)
- Study of different types of Viruses and Ant viruses.
- Study of Window (Control Panel, System Tools, Device manager, Display properties)
- Introduction for use of Advances Diagnostics (DM, Partition Magic, Defragmentation, etc.)
- Study of Internet (To open E-mail account, Send and receive the E-mail)

8. CD-R/W & MODEM

- Study of CD-ROM and installation under DOS.
- Installation of CD-W under Windows.
- Study of Modem (Internal and External).
- Installation of Modem.
- Inter connection of CD-R/W, DVD, External Modem and PC- System.
- Installation of DVD.

9. DIFFERENT ADD ON CARDS (Sound, TV Tuner, Network, DVD, Web. Camera, Graphic etc.)

- Installation of Sound card drivers.
- Installation of TV Tuner card.
- Installation of Network Adopter.
- Installation of Web Camera.
- Installation of Graphic card.

10. PRINTERS

- Types of Printer (DOT matrix, Inject, Laser Printer).
- Interconnection of PC and Printer.
- Installation of Printer in Window and DOS.
- Study of Printer sharing switch.

11. SCANNER

- Types of scanner.
- Study of block diagram of scanner.
- Study of Installation of scanner

12. TEST INSTRUMENTS & DIGNOSTICS: -

- Application & use of Oscilloscope, DMM, Frequency meter, logic probe, Logic analyzer
- Block diagram of Digital voltmeter, Digital frequency meter, Digital clock.

a) Preventive Maintenance b) Booting Problems c) HDD Problems d) Keyboard / Mouse Problems e) Printer Problems

GUIDELINES FOR QUESTION PAPER SETTERS

Q. no.1	Compulsory (Objective type).	20 marks
Q. no.2 to 8	Solve any five questions from Q. 2 to 8 (Subjective type).	16 marks each

The paper setter should take care that (as far as possible) entire syllabus is equally covered.

- **PRACTICAL EXAMINATION FOR: - CM / DCHNES -I**

Each candidate will have to locate three faults. Two faults in system and performing one Experiment one Installation of Software / Hardware or Formatting HDD / RAM. Each faults & Installation/formatting will give 8 Marks & 12 Marks each for writing procedure.

Journal / Term work **20 Marks**.

(Journal should contain minimum **30** recommended experiments)
Oral examination **20 Marks**.

- **RECOMMENDED BOOKS FOR REFERENCE**

Modern All about S.M.P.S.	Lotia / Nair
Intel microcomputer data book.	
PC Made simple	
Subhash Mehta	
PC Upgrading & Maintenance	BPB
IBM PC Clones (II edition)	
Govindrajalu	
PC Magazine	
Modern All about Floppy drive	Lotia / Nair
Modern All about Monitors	Lotia / Nair
Digital electronics practical devices.	Jain & Anand.
Digital principles and application	
Malvino & Leach.	
Intel microcomputer data book.	

INDIAN TECHNICAL EDUCATION SOCIETY
MUMBAI

CERTIFICATE COURSE

COMPUTER NETWORKING [CN]

[CN / DCHNES – II]

EXAM SCHEME: **THEORY** **100 MARKS – 3 HRS.**
PRACTICAL **100 MARKS – 2 HRS.**

THEORY SYLLABUS

1) REVISION OF SYSTEM SOFTWARE & DIAGNOSTIC TOOLS: -

- Installation of Window. (Windows server 2003 & 2008)
- Study of Internal and External DOS Commands (Dir, Drive select, chkdsk, CD, MD, RD,
  Copy, Fdisk, Format, Disk copy, Scandisk, Ver, Time, Date, etc.)
- Study of Viruses and antidotes: Norton, PC-Clint, etc.
- Study of System (Control Panel, System Tools, Device manager, Display properties)
- Introduction for use of Advances diagnostics (DM, Partition Magic, Defragmentation, etc.)
- Study of Internet (To open E-mail account, Send and receive the E-mail)

2) NETWORKING BASICS: -

- Networking: Introduction, Topology, Network components.
- Network Media: UTP, STP, Coaxial cable, Optical Fiber.
- Protocols –Definition, Types (TCP/IP PROTOCOL- advantages, Addressing)
- Network Architecture: Ethernet, Token Ring, Apple Talk, Arcnet.
- Concept of OSI Model

3) NETWORK ENVIRONMENT: -

- Network Operation: Server, NOS, Workstation, Services, Applications.
- E-Mail Standards.
- Client/Server Environment.
- Network Management.
- Workgroup Environment.
- Network Data Security – Password, Access Control, Data Encryption,
- Virus Protection, Back Up.
- Data Transfers Modem, PSTN, Leased lines, ISDN.
- Repeaters, Bridges, Routers, Brouters (Introduction).
- Router Protocols, Gateways. WAN Types.

4) LINUX: -

- Linux installation – Server & Workstation.
- Configuration & Operation of Linux Workstation.
- Basic Linux commands.

5) A) INTRODUCTION TO WINDOWS XP / 7 & 8, NETWORK OPERATING SYSTEM (NOS)

B) WINDOWS 2003 / 2008 SERVER & WORKSTATION: -

- Installation of Window 2003 & 2008 Server.
- Installation of Window 2003 & 2008 Workstation.
- Configuration of Window 2003 & 2008 Environment.
- Window 2003 & 2008 Administration.
- Application Support.
- Remote Access Service.
- Configuring TCP/IP Network Services.

C) INTRODUCTION TO 2003 & 2008 (DIFFERENCE BETWEEN WINDOWS 2003 & 2008).

6) WEB TECHNOLOGY: -

- Installation of E-Mail & Internet Services.
- Installation of Net Version software's e.g. Office 2007 or 2010, CAD, Photoshop etc.
- Implementing & installing Internet Services.
- Implementing FTP, SMTP, SNTP, and Security Features for Web server.
- Installation & Deploying of Windows Server 2003 & 2008
- Installation & Configuration of Active Directory Services
- Installation & Configuration of Active Directory Domain Controller
- Installation & Configuration of DHCP Service
- Installation & Configuration of DNS Service
- Installation & Configuration of IIS
- Installation & Configuration of File & Print Servers
- Implementing Creating User Accounts
- Implementing Internet Connection Sharing
- Implementing Client /Server Network
- Implementing Peer To Peer networks
- Implementing Working of OSI Model
- Configuration of TCP/IP network Services

7) DIAGNOSTIC: -

Study of Network Debugging Tools, E-Mail, Internet, WWW, FTP services. Debugging in window 2008. Debugging in Network Printer.

GUIDELINES FOR QUESTION PAPER SETTERS

Q. no.1	Compulsory (Objective type).	20 marks
Q. no.2 to 8	Solve any five questions from Q. 2 to 8 (Subjective type).	16 marks each

The paper setter should take care that (as far as possible) entire syllabus is equally covered.

- **PRACTICAL EXAMINATION FOR: - CN / DCHNES – II**

I] Installation & Deploying of Windows Server 2003 & 2008
II] To configure DHCP Server
III] To configure DNS Server

Student is expected to perform any two from above.	30 Marks each.
Journal / Term work	20 Marks.
Oral examination	20 Marks.
	Total – 100 Marks

MUMBAI

DIPLOMA

COMPUTER HARDWARE & NETWORKING

ENGINEERING SERVICES (DCHNES)

THEORY PAPER I **:**	Syllabus for this paper is same as Certificate Course in COMPUTER MAINTENANCE [CM] Refer this syllabus booklet Page No. _____	100 Marks
THEORY PAPER II**:**	Syllabus for this paper is same as Certificate Course in COMPUTER NETWORKING [CN] Refer this syllabus booklet Page No. _____	100 Marks
PRACTICAL I & II:	Practical Syllabus for this Practical No. 1 is same as CM	100 Marks
	Practical Syllabus for this Practical No. 2 is same as CN	100 Marks
	Total : 400 marks	