



Structure & Syllabi for One Year DCA Programme

1. The title of the programme is “Diploma in Computer Application (DCA) and introduced from the academic year .2021-2022
 2. **Objectives:** The objectives of the Programme shall be to provide sound academic base for proceeding career in Computer Application.
 3. **Eligibility for admission:** In order to be eligible for admission to DCA a candidate must be (10+2) with minimum 40% marks in aggregate.
 4. **Duration:** The duration of the DCA Programme shall be one year.
 5. **The scheme of Examinations:** The DCA Examination will be of 800 marks as given Below:
 - i. Theory Papers: 600 marks
 - ii. Practical Papers: 200 marks
 6. **The Standard of Passing and Award of Class**

In order to pass in the examination the candidate has to obtain 33% marks out of 100. (Minimum 33% marks must be obtained separately in theoretical papers as well as practical papers of University Examination).

The class/division will be awarded on the basis of aggregate marks obtained by the candidate for examinations.
 7. The Medium of Instruction and Examination (Written and Viva) shall be English/Hindi.
 8. **Instructions to Paper Setters:**
 - a. In each theory paper, six questions are to be set and paper has maximum 100 marks. Question paper should be in English as well as Hindi.
 - b. Question No. 1 should be compulsory and cover the entire syllabus. This question should have objective or short answer type questions. It should be of 30 marks.
 - c. Apart from Question No. 1, rest of the paper shall consist of five units as per the syllabus. Every unit should have two questions. However, student may be asked to attempt only 1 question from each unit. Each question should be 14 marks.
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शहीद नंदकुमार पटेल विश्वविद्यालय, गढ़ उमरिया, ओड़िशा रोड, रायगढ़

SYLLABUS

DIPLOMA IN COMPUTER APPLICATION (DCA)

SCHEME OF EXAMINATION FOR ONE YEAR DCA PROGRAMME

w.e.f. Session 2017-18

Paper No.	Title of the Paper/s	Term End Examination	Total Maximum Marks	Minimum Passing Marks in Term End Examination
		Maximum marks		
I	Fundamentals of Computers	100	100	33
II	Windows & PC Packages	100	100	33
III	Print Technology and Desktop Publishing	100	100	33
IV	Internet and Web Technology	100	100	33
V	Programming in C	100	100	33
VI	Introduction to Operating System	100	100	33
VII	LAB-I PC Package and DTP Lab	100	100	33
VIII	LAB-II Programming in C Lab	100	100	33
Total Marks			800	



PAPER-I

FUNDAMENTALS OF COMPUTERS

UNIT-1

Brief History of Development of Computers ,Computer System Concept, Computer System Characteristics ,Capabilities and Limitations, Types of Computers-.,Personal Computer (PCs) - IBM PCs, Types of PCs- Desktop, Laptop, Notebook, Palmtop, etc. Computer organization: Basic Component of Computer system - Control Unit, ALU, I/O, Memory.

UNIT-II

Input Devices :Keyboard, Mouse, Joystick, Scanners, Digital Camera, MICR, OCR, OMR, Light pen, Touch Screen, Voice Recognition, Bar Code Reader, Output Devices Monitors - Characteristics and types of monitor, Size, Resolution, Refresh Rate, Dot Pitch, Video Standard - VGA, SVGA, XGA etc. Printers: Impact and Non Impact Printers, Daisy wheel, Dot Matrix, Inkjet, Laser. Plotter, Sound Card and Speakers.

UNIT-III

Bytes and Addressable Memory, Memory Sizes, Types of Memory: RAM, Cache, ROM, Flash Memory, CMOS, Memory Access Times, Expansion Slots And Adapter Cards, Removable Flash Memory, Ports And Connectors: USB Ports, FireWire Ports, Buses, Storage: Characteristics of a Hard Disk, RAID, NAS, External and Removable Hard Disks, Miniature Hard Disks, USB Flash Drives, Cloud Storage, Optical Discs: CDs, DVDs.

UNIT-IV

Software – Definition, Types of Software- System Software, Application Software, System Software- Operating System, Language Translator(Compiler, Interpreter), Utility Programs. Operating system- Definition, Function, Types of operating system- Batch Processing, Multiprogramming, Time Sharing Operating System, Multiuser, Multitasking, Multiprocessing Operating System.

UNIT-V

Network- Direction of Transmissions Flow-Simplex, Half Duplex Full Duplex, Types of Network-LAN, WAN, MAN etc. Topologies of LAN-Ring, Bus, Star, Mesh and Tree topologies. Computer Virus: Virus working principals, Types of viruses, Virus detection and Prevention Viruses on network, Antivirus software's.

Text Books: 1. Fundamentals of Computers, P. K. Sinha, BPB.

2. Fundamental of Computers, Raja Raman V. Prentice Hall of India, New Delhi.

3. Introduction to Computers, Norton, Peter, McGraw Hill.

4. Computer Fundamentals, B. Ram, New Age International Pvt. Ltd.

5. Fundamental of Computer & IT, S.Jaiswal, Wiley dreamtech India.

References: 1. A+ Certification All-in-One Desk Reference for Dummies, G. Clarke

1. IBM PC & Clones: Hardware Trouble Shooting and Maintenance, B.Govindarajalu



PAPER-II

WINDOWS & PC PACKAGES

UNIT-I

Disk Operating System (DOS) and MS Windows 7: Introduction, History & Versions of DOS, DOS System Files. DOS Commands: Internal and External, Executable V/s Non Executable Files in DOS; **MS Windows 7:** Introduction to MS Windows; Features of Windows; Various versions of Windows & its use; Working with Windows; My Computer & Recycle bin ; Desktop, Icons and Windows Explorer; Screen description & working styles of Windows; Dialog Boxes & Toolbars; Working with Files & Folders; simple operations like copy, delete, moving of files and folders from one drive to another, Shortcuts & Autostarts; Accessories and Windows Settings using Control Panel- setting common devices using control panel, modem, printers, audio, network, fonts, creating users, internet settings, Start button & Program lists; Installing and Uninstalling new Hardware & Software program on your computer.

UNIT-II

MS Word 2007: Introduction to MS Office, Introduction to MS Word, Features & area of use. Working with MS Word, , Creating a New Document, Different Page Views and layouts, Applying various Text Enhancements, Working with -Styles, Text Attributes, Paragraph and Page Formatting, Text Editing using various features ; Bullets, Numbering, Auto formatting, Printing & various print options.

UNIT-III

Advanced Features of MS-Word 2007 : Spell Check, Thesaurus, Find & Replace; Headers & Footers, Inserting - Page Numbers, Pictures, Files, Autotexts, Symbols etc., Working with Columns, Tabs & Indents, Creation & Working with Tables including conversion to and from text, Margins & Space management in Document, Adding References and Graphics, Mail Merge, Envelops & Mailing Labels. Importing and exporting to and from various formats.

UNIT-IV

MS Excel 2007: Introduction and area of use, Working with MS Excel, concepts of Workbook & Worksheets, Various Data Types, Using different features with Data, Cell and Texts, Inserting, Removing & Resizing of Columns & Rows, Working with Data & Ranges, Different Views of Worksheets, Column Freezing, Labels, Hiding, Splitting etc., Using different features with Data and Text; Use of Formulas, Calculations & Functions, Cell Formatting including Borders & Shading, Working with Different Chart Types; Printing of Workbook & Worksheets with various options.

UNIT-V

MS PowerPoint 2007: Introduction & area of use, Working with MS PowerPoint, Creating a New Presentation, Working with Presentation, Using Wizards; Slides & its different views, Inserting, Deleting and Copying of Slides; Working with Notes, Handouts, Columns & Lists, Adding Graphics, Sounds and Movies to a Slide; Working with PowerPoint Objects, Designing & Presentation of a Slide Show, Printing Presentations, Notes, Handouts with print options.

Text Books: 1. Comdex Computer Course Kit (windows 7 with office 2010), Gupta Vikas, Dreamtech Publication 2. Mastering MS Office 2000, Professional Edition by Courter, BPB Publication. 3. MS Office 2000 Training Guide by Maria, BPB Publications. 4. MS Office complete by SYBEX. 5. PC Software Made Simple, Taxali, BPB.



PAPER-III

PRINT TECHNOLOGY AND DESKTOP PUBLISHING

UNIT-I

Print Technology: Introductions to Printing, Types of Printers, Inkjet and DM Printer, Screen Printing, Offset Printing, Working of offset Printing, Transparent Printout, Negative & Positives for Plate were making, Laser printers - Use, Types, Advantage of Laser printer in publication.

UNIT-II

Page Maker: Page Maker Icon and help, Tool Box, Styles, Menus etc., Different screen Views, Importing text/Pictures, Auto Flow, Columns, Master Pages and Stories, Story Editor, Menu Commands and short-cut commands, Spell check, Find & Replace, Import Export etc., Fonts, Points Sizes, Spacing etc., Installing Printers, Scaling (Percentages), Printer setup Use of D.T.P. in Advertisements, Books & Magazines, News Paper, Table Editor.

UNIT-III

Adobe Photoshop: Adobe Photoshop CS4: Menus and panels, Exploring the Toolbox, Working with Images: Working with Multiple Images, Rulers, Guides & Grids, Image Size Command, Adjusting Canvas Size & Canvas Rotation, Creating, Selecting, Linking & Deleting Layers, Painting with Selections, Red Eye Tool, Clone Stamp Tool, Color creation, Quick Mask Options, Creating Straight & Curved Paths, Creating Special Effects.

UNIT-IV

CorelDraw X4: CorelDraw X4 Command Bars & Tools, Drawing Area-Objects-Lines, Working with Text & Artistic Media Tool, Fills & Modifying Outlines, Drop Shadows, Importing and Editing OCR Text, Templates, Drawing and Editing Curves and Lines, Three-point Tools, Clipart, Special Characters and Creating Symbols, Working with Layers & Creating a Master Layer, Brush Tools and Adding Objects, Interactive Tools, PowerClip Feature and the Envelope Tool.

UNIT-V

Other Work in DTP: Scanning, Type of Scanner, Importing image, text from scanner, ABBY fine reader, Acrobat (PDF) to Word, and Word to PDF, PDF Editor, PDF Annotator, PDF Infix, Voice to word conversion.

- Text Books:**
1. How to Do Everything Adobe Photoshop CS4, Chad Perkins, TMH
 2. Desktop Publishing Software: Adobe Creative Suite, Adobe Frame Maker, Adobe Indesign, Adobe PageMaker, Altsoft Xml2pdf, Bookmaking Software; Uni.press.org
 3. Specifications of Adobe PageMaker (Paperback); Cede Publishing
 4. Adobe Pagemaker 7.0 Inver 1st Edition, Kevin G. Proot, Ceneage Learning Pvt Ltd.
 5. Corel Draw X4: The Official Guide, (Paperback), Gary David Bouton, TMH

- Reference Books:**
1. Corel DRAW X4, Deborah Miller, Pearson Education
 2. Photoshop CS4 Quicksteps, Carole Matthews & Gary David Bouton, TMH



PAPER-IV

INTERNET AND WEB TECHNOLOGY

UNIT-I

Applications of Internet, History of Internet, WWW, Various Services , World Wide Web (WWW) History, Working, Web Browsers, Its function Concept of Search Engines, client server architecture

UNIT-II

Internet : Evolution, Protocols, Interface Concepts, Internet Vs Internet, Growth of Internet, ISP, Connectivity - Dial-up, Leased line, VSAT etc., URLs, Domain names, Portals, Applications.

E-Mail: Concepts, Basics of Sending & Receiving, E-mail, Free E-mail services.

UNIT-III

Transfer Protocols, Telnet & Chatting, Client/Server Architecture Characteristic, FTP & its usages. Telnet Concept, Remote Logging, Protocols, Internet chatting - Voice chat, text chat.

UNIT-IV

Searching the Web, HTTP, URLs, Web Servers, Web Protocols. Web Publishing Concepts, Domain Name Registration, HTML, Design Tools, HTML Editors, Image Editors.

UNIT-V

HTML Concepts of Hypertext, Versions of HTML, Elements of HTML Syntax, Head & Body Sections, Building HTML Documents, Inserting Texts, Images, Hyperlinks, Backgrounds And Colour Controls, Different HTML Tags, Table Layout and Presentation, Use of Font Size & Attributes, List types and its Tags.

Text Books:

1. Computer Networks, Andrew S. Tanenbaum, PHI / Pearson Education Inc.,
2. Computer Networking: A Top-Down Approach Featuring the Internet, James F. Kurose, Keith W. Ross, Pearson Education Inc., New Delhi.
3. Introduction to Data Communications and Networking, Wayne Tomasi, Pearson Edu
4. Data Communications and Networking, Curt White, CENGAGE Learning Pvt. Ltd.
5. Computer Networks, L. L. Peterson & B. S. Davie, Elsevier Inc,
6. Data Communication and Networking, Behrouz A. Forouzan, Tata McGraw-Hill.

References: 1. Data & Computer Communication, Black, PHI.

2. Data and Computer Communication, William Stallings, Pearson Education.
3. Computer and Communication Networks, Nader F. Mir, Pearson Education, 2007.
4. Communication Networks, Walrand, TMH.
5. Internetworking with TCP/IP, Douglas E. Comer, Prentice Hall India.
6. Computer Networks: Principles, Technologies and Protocols, Natalia Olifer & Victor Olifer, Wiley India Pvt. Ltd., New Delhi.



PAPER-V
PROGRAMMING IN 'C'

UNIT-I

C Language – Character set, Tokens of C - tokens-constant-keywords and identifiers - variables- data types- declaration and assignment of variables defining symbolic constants.- Operators and Expressions: Types of Operators- Arithmetic, Relational and Logical Operators Assignment, increment and decrement of operators - conditional bitwise and special operators - arithmetic expression and its evaluation - hierarchy of arithmetic operations - evaluations, precedence and associativity - mathematical functions.

UNIT-II

Control Branching and Decision-Making in C - If statement Switch statement - GOTO statement - The? : Operators. - Decision - Making and Looping, Types of Loop, nesting in a loop.

Arrays in C Single Two-dimensional and Multi-dimensional arrays. Handling of Character Set: Declaration & Initialization of string variables - reading from and writing to screen -Arithmetic operations - String handling functions.

UNIT-III

Functions: Definition, Library Functions User Defined Functions, Function Prototype, Function Definition, Function Call, Types of User Defined Functions, Arrays and Functions.

Structures and Unions: Definitions initialization and assigning values to members' arrays of structures and arrays within structures structure with in structure- unions - size of structures.

UNIT-IV

Declaration and initialization of pointers - pointer expression - pointer and arrays - pointer and character strings pointers and functions - pointers and structures pointer on pointers.

UNIT-V

File Maintenance in "C": Defining, Opening and closing a file - Input/Output operations on a file- random access to file - command line arguments.

Text Books:

1. Programming in "C" E Balgurusamy Tata mc Graw-Hill
2. The "C" Programming Language: Brian W. Kenigham & Dennis Ritchie
3. The Spirit of "C"- Henry Mulis
4. Let Us C, Yashwant Kanetkar, BPB



PAPER-VI

INTRODUCTION TO OPERATING SYSTEM

Unit – I

Introduction to Operating System

What is an Operating System, Operating Systems Architecture, Types of Operating Systems, Process Model, Process States and Transitions, System Calls.

Unit – II

Process Management

Processes: Process Scheduling, Cooperating Processes, Inter-process Communication, CPU Scheduling: Scheduling Criteria, Scheduling Algorithms, Process Synchronization: Background, Deadlocks.

Unit –III

Memory Management

Main Memory Management: Background, Logical versus Physical Address space, swapping, Contiguous allocation, Paging, Segmentation, Segmentation with Paging, Virtual Memory: Demand Paging.

Unit –IV

Device and Storage Management

File-System Interface, Mass-Storage Structure, Device Management: Techniques for Device Management, Dedicated Devices, Shared Devices, Buffering, Multiple Paths, Secondary-Storage Structure: Disk Structure, Disk Scheduling, Disk Management.

Unit –V

File-System Implementation

A Simple File System, Logical & Physical File System, File-System Interface: Access Methods, Directory Structure, Protection, Free-Space Management, Directory Implementation.

Text Books:

1. Operating System Concepts, Silberschatz and Galvin, Pearson Education Pub.
2. Operating Systems, Madnick E., Donovan J., Tata McGraw Hill,
3. Operating Systems, A. S. Tannenbaum, PHI

Reference Books:

1. Operating Systems Internals and Design Principle, William Stallings, Prentice Hall Publishers
2. Operating Systems - A Concept Based Approach, Dhananjay M. Dhamdhare, TMH



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SYLLABUS

DIPLOMA IN COMPUTER APPLICATION (DCA)

PAPER-VII

LAB-I

PC PACKAGE AND DTP LAB

Note: - Practical should cover syllabus of respected theoretical papers.

The break-up of marks for Practical will be as under :			
Sr. No.	Argument	Maximum Marks	Minimum Passing Marks
1.	Lab Record	20	
2.	Viva-voce	30	
3.	Program Development and Execution	50	
Total Marks		100	33

PAPER-VIII

LAB-II

PROGRAMMING IN C LAB

Note: - Practical should cover syllabus of respected theoretical papers.

The break-up of marks for Practical will be as under :			
Sr. No.	Argument	Maximum Marks	Minimum Passing Marks
1.	Lab Record	20	
2.	Viva-voce	30	
3.	Program Development and Execution	50	
Total Marks		100	33
