DETAILED SYLLABUS

DIPLOMA IN COMPUTER APPLICATIONS (DCA)
Effective from JAN-2026

Makhanlal Chaturvedi National University of Journalism and Communication, Bhopal

Makhanpuram, Opposite M.P. State Shooting Academy, Bishankhedi, Bhopal, Madhya Pradesh - 462044.
https://www.mcu.ac.in/

About The University

Makhanlal Chaturvedi National University of Journalism and Communication (MCNUJC) was established in 1990. Carrying forward the legacy of excellence, it is a leader and pioneer in Mass Communication, Media, Journalism, Computer Applications, Digital media, and Management Education.

Established by the Madhya Pradesh Government, MCNUJC is named after Pt. Makhanlal Chaturvedi, the great editor, poet, litterateur and freedom fighter. It is the first academic Centre of excellence in the entire Asian sub-continent where professionals are developed in Communication, Media, and IT disciplines through traditional and modern methods of communication relevant to the current media needs. The University is also recognised under section 12(B) of UGC.

Sticking to the newest trends of Media and Information Technology, the University conducts postgraduate, undergraduate as well as skill-oriented diploma courses in Journalism, Broadcast Journalism, Advertising and Public relations, Electronic Media, New Media, Computer Applications Media management and Communication Research.

University has been a pioneer in launching many new job-oriented courses of significance, which have received enormous appreciation among employers. The University has a focused approach towards professional education, training and innovative methods of teaching and learning. Students get opportunity to study subjects of their choice under the Choice Based Credit System (CBCS) as per the industry needs. The University is equally appreciated for its research contribution through its research scholars leading to the award of PhD in Media and Computer Applications. Most of the faculty members of the university hold a PhD along with strong research contribution.

MCNUJC is a unique amalgamation of Media and IT professionals and academicians. Today, the university is also providing education to the remote rural areas with a wide network of over more than 1600 associated study institutes, where annually over one lakh students are studying in regular program. This is a grand indicator of the university's success, credibility, popularity and recognition.

Our faculty members are renowned for their dynamic approach, research and dedication. They are approachable and enthusiastic teachers who make their disciplines accessible and enjoyable. The university aims to transform dreams and ambitions of students into global opportunities for success. Alumni are placed in renowned print media institutions, channels, advertising agencies, public relations firms, graphic designing and multimedia world, information technology and computer industries and many of them occupy senior positions.

What makes MCNUJC the first choice for media, communication and IT education in the entire country is its comprehensive academics with exceptional industry exposure and quality education on affordable fee structure with the best professional environment.

DIPLOMA IN COMPUTER APPLICATIONS (DCA)

Course Duration: 1Year   2 Semesters
Eligibility: 10+2 or equivalent
Course Objectives:

To introduce the fundamental concepts of computer systems and Artificial Intelligence (AI) concepts

To develop practical skills in using word processing, spreadsheets, and presentation software.

To impart knowledge of desktop publishing (DTP) concepts and tools.

To introduce the concepts of databases and relational models.

To train students in using SQL for database creation and management.

To introduce current trends and emerging technologies in the IT industry.

To impart knowledge of E-Commerce

To introduce multimedia concepts.

To develop proficiency in English and Hindi typing using standard keyboard layouts.

Course Outcomes:

CO1: Explain the structure and functions of computer systems and basics of AI, machine learning, and intelligent systems.

CO2: Apply office automation tools in real-world business and academic scenarios.

CO3: Understand DTP concepts and tools for digital publishing.

CO4: Understand the concepts of database systems and SQL and MS-Access

CO5: Type English and Hindi text with improved accuracy and speed.

CO6: Describe major trends in IT such as AI, IoT, Cloud, and Big Data.

CO7: Understand the structure and functioning of E-Commerce

CO8: Apply multimedia and layout design.

SCHEME
DIPLOMA IN COMPUTER APPLICATIONS (DCA)

SEMESTER –I

Subject Code	Subject Name	Credits /Hours			Load	Theory Paper	Practical Exams	Internal Evaluation	Total Marks
		L	T	P					
1DCA1	Computer Fundamentals and AI Concepts	4/4	1/1	0	5/5	70		30	100
1DCA2	PC Packages and AI Office Tools	4/4	0	1/2	5/6	70	20	10	100
1DCA3(A) OR 1DCA3(B)	**Elective – I** Database using MySQL Database using MS Access	4/4	0	1/2	5/6	70	20	10	100
Optional-1	**Hindi Typing**	0	1/1	1/2	2		40	10	50
								Total Marks =350	

(L – Lecture, P-Practical)

SEMESTER-II

Subject Code	Subject Name	Credits /Hours			Load	Theory Paper	Practical Exams	Internal Evaluation	Total Marks
		L	T	P					
2DCA1	Multimedia and Current IT Trends	4/4	1/1	0	5/5	70		30	100
2DCA2	Web Technologies and E-Commerce	4/4	0	1/2	5/6	70	20	10	100
2DCA3(A) OR 2DCA3(B)	**Elective – II** Digital Media Publishing Graphic Design with CorelDRAW	4/4	0	1/2	5/6	70	20	10	100
Optional-II	**English Typing**	0	1/1	1/2	2		40	10	50
								Total Marks =350	

General Instructions:

1. For passing the subject examination minimum 40% marks must be separately scored in Theory Paper, Practical Exams and Internal Evaluation in the subject.

2. For passing the semester, minimum aggregate marks must be 45% in the semester.

3. For passing in Typing Test (English and Hindi) minimum 50% of marks is required.

SEMESTER-I
1DCA1-Computer Fundamentals and AI Concepts

Detail Syllabus:

UNIT–I: Computer System Concepts, Application area, advantage & disadvantage, Components of a computer system - Control unit, ALU, Input/Output, Memory, Mother Board, Generations of computers, Configurations of Computer system, Types of PCs- Desktop, Laptop, Notebook, Palmtop, Supercomputers Characteristics and area of Uses, Primary Vs Secondary Memory, RAM, ROM, EPROM, PROM. Various Storage Devices- Hard Disk Drives, Zip Drive, Blue Ray Disc, Flash drives SD/MMC Memory cards, Solid-State Drive (SSD).

UNIT–II: Input Devices: Keyboard, Mouse, Trackball, Joystick, Scanners, Digitizing tablet, Digital Camera, MICR, OCR, OMR, Light pen, Barcode & Barcode Reader, Quick Response Code (QR Code), Voice Recognition, Touch Screen. Output Devices: Monitors- Characteristics and types of Monitor, Size, Digital, Analog, Resolution, Refresh Rate, Interlaced/Non-Interlaced, Dot Pitch, Video Standard- VGA, SVGA, XGA etc. Printers and its Types Impact and Non-Impact printer, Dot Matrix, Inkjet, Laser, Plotter, 3D Printers, Sound Card and Speakers,

UNIT–III: Software and its Need, Types of Software- System Software, Application Software, System Software- Operating System– definition & function, Device Drivers & Utility Programs, Introduction to DOS, Windows, Linux, Mac, Android Operating System. Introduction to Programming Languages- Machine, Assembly, High Level, 4GL, Their Merits and Demerits, Introduction to Assemblers, Compilers and Interpreter. Introduction to Word Processing, Spreadsheet, Presentation Graphics, Data Base Management, Desktop Publishing, Graphics & Multimedia, Business Accounting, MIS, Gaming and ERP Software etc. Computer coding system-ASCII, ISCII and Unicode, Number system of computers- Binary, Octal, Decimal, Hexadecimal their conversion.

UNIT–IV: Use of communication and IT, Communication Process, Component of communication– sender, receiver, Transmission Medium & Protocol, Communication types- Simplex, Half Duplex, Full Duplex. Communication Channels- Twisted, Coaxial, Fiber Optic, Modem-Working and characteristics. Types of network- client/server and peer-to-peer networks, Types of connections- Dialup, Leased Lines, ISDN, DSL, RF, Broad band uses, advantages & disadvantages. Types of Network- LAN, WAN, MAN, Internet, VPN etc., Topologies of LAN- Ring, Bus, Star, Mesh and Tree topologies- structure, uses, advantages & disadvantages. Components of LAN- Media, NIC, NOS, Network devices - Bridges, HUB, Routers, Repeater, Gateways uses, advantages & disadvantages.

UNIT–V: Introduction to AI, History, Definition, and Applications of AI, Types of AI, Definition, Scope, and Goals of AI, History and Evolution of Artificial Intelligence, Advantages and Limitations of AI. Exploring AI-powered devices (e.g., smart assistants, image recognition tools). Introduction to Machine Learning and its Relationship with AI. AI in the Internet World: Search Optimization, Chatbots, Recommender Systems, Virtual Assistants, Modern AI Applications: Chatbots, Self-Driving Cars, Voice Assistants. Overview of (Microsoft Copilot, Windows AI).

Reference Books:

- Fundamentals of Computers, Paperback by Reema Thareja, Oxford University Press.
- Computer Fundamentals- 6th Edition by Pradeep K. Sinha, Priti Sinha, BPB Publications.
- Computers Today, A. Ravichandran, Khanna Book Publishing.

- Handbook of Computer Fundamentals by Nasib Singh Gill, Khanna Publishers.
- https://cbseacademic.nic.in/web_material/Curriculum25/publication/srsec/843_AI_Student_HandbookXI.pdf

SEMESTER-I

1DCA2 – PC Packages and AI Office Tools

Detail Syllabus:

UNIT–I: Operating System (Windows): Overview of Windows Operating System, Basic Operations-How to Start a computer, login, logoff, hibernate, shutdown. Personalizing Desktop-Desktop Background, Screen Saver, Themes, Setting date & time, Task bar, Files & Folders, Create, Copy, Rename, Moving & Delete Files & Folders, Create & Using Shortcuts, Recycle Bin.

Accessories-MS Paint, Notepad, WordPad, Windows Media Player, Calculator, Games, Math Input Panel, Language Settings-How to set other languages on computer Using Control Panel to add, remove or configuring new or existing devices, software programs and fonts, Enhance the performance of computer- using Disk Clean-up, using Disk Defragmenter.

Using Internet in Windows: Basic Operations using Internet Browser-Working with browsers, Know about WWW, URL, Search Engines,Google Maps, Online Ticket Booking, Apply for PAN Card/Passport /Aadhar Card online, Pay electricity bill and Service tax online, Downloading eBooks. Introduction to AI and its relevance in daily computing tasks, Overview of AI Productivity Tools (ChatGPT, Copilot, Gemini, Notion AI)

UNIT–II: Modern office activities and their software requirements, Introduction to Office Automation Suit, Elements of office suit & area of use. Word-processing, Spreadsheet, Presentation graphics, Database, Introduction and comparison of various office suites like Apache OpenOffice, Libre Office, WPS office, Google Docs & Microsoft office.

MS Word Basics: Introduction to MS Office(2013), Introduction to MS Word, Features & Area of use. Various versions of MS Office and their requirements, Working with MS Word, Menus & Commands, Ribbon, Toolbars & Buttons, Shortcut Menus, Wizards & Templates, Creating a New Document, Different Page Views and layouts, Applying various Text Enhancements- Fonts, Styles, Text Attributes, Formatting Your Text and Documents: Auto format, Paragraph and Page Formatting, Line spacing, Margins, Borders and Shading, Tabs and Indents, Text Editing using various features, Bullets, Numbering, Working with Styles, Printing & various print options, Spell Check Working with Headers and Footers.

Tables: Creating a simple table, Creating a table using the Table Menu, Entering and editing text in a table, selecting in table, adding rows, changing row heights, Deleting rows, Inserting columns, Deleting columns, changing column width, conversion to and from text. Introduction to Google Docs, Smart Compose, AI Summarizer.

UNIT–III: Graphics in MS-word: Importing graphics, Clipart, insert picture, Using Clip Art, Shapes and SmartArt in documents, using drawing features, drawing objects, text in drawing. Taking and inserting Screenshots in Documents, Using WordArt and Drop Cap features in documents. Templates: Template types, using templates, exploring templates, modifying templates.

Mail Merge in MS Word, Mail Merge concept, Envelops & Mailing Labels, Importing and exporting to and from various formats, Macros in MS Word: Macro introduction and their use, recording macros, editing macros, running a macro. Creating Professional Reports with AI-generated Templates, Using AI tools for grammar checking and content suggestions,

UNIT–IV: MS Excel Spreadsheet Basics & features, concepts of Workbook & Worksheets, Getting started, Creating a new worksheet, Using Wizards, Various Data Types, Selecting cells, Entering and editing text, Entering and editing Numbers, Removing & Resizing of Columns & Rows, entering and editing Formulas, Referencing cells, moving cells, copying cells, sorting cell data, inserting rows, inserting columns, Inserting cells, Deleting parts of a worksheet, clearing parts of a worksheet, Different Views of Worksheets.

Formatting: Cell Formatting, changing column widths and Row heights, auto format, changing font sizes and Attributes, centering text across columns, using border buttons and Commands, changing colors and shading, hiding rows and columns, Working with Data & Ranges, Column Freezing, Labels, Hiding, Splitting, merging etc.

Charts in Excel: Chart parts and terminology, chart wizard, different types of charts, printing charts, deleting charts, Overview of AI-powered features in Windows (e.g., Copilot) Using AI in Excel: Data Insights, Trend Prediction, Using AI features like "Analyze Data" and ChatGPT for formula generation.

UNIT–V: MS PowerPoint: 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, shapes, screenshots, Smart Art and charts in presentation, Sounds and Movies to a Slide; Working with PowerPoint Objects, Designing & Presentation of a Slide Show, change Slide backgrounds, Change Slide Size, Using Animation and Transitions in presentation, Advanced Slide options-Manual & Automatic, Printing Presentations, Notes, Handouts with print options, Slide Master, Handout Master and Notes Master.

AI Tools for Presentation Creation (Beautiful.ai, Tome, Canva AI), Generate an AI-based presentation using online tools

Books and References:

- Windows 8.1 In Depth, by Knittel, PEARSON
- Windows 8.1 Plain and Simple by Joli Ballew, Nancy Muir, PHI
- MCSA Microsoft Windows 8.1 Complete Study Guide: Exams 70-687, 70-688, Jeffrey R. Shapiro, Darril Gibson, Wiley India
- Windows 8.1 For Dummies By Andy Rathbone, Wiley India
- Office 2013 in Simple Steps, Kogent Learning Solutions Inc., Wiley India
- Microsoft Office:2013 Edition Inside Out, Bott Ed, Siechert, Carl, Prentice Hall Of India (PHI)
- Learning Microsoft Office 2013, Paperback by Ramesh Bangia, Khanna Book Publishing
- Microsoft Office 2013 : Digital Classroom, Paperback by Walter Holland, ACI Creative Team, WILEY
- Microsoft Learn Portal: *AI Features in Microsoft 365*
- https://cbseacademic.nic.in/web_material/Curriculum25/publication/srsec/843_AI_Student_HandbookXI.pdf

Practical Questions:

Q. Load Microsoft Word & type the following text and do the following tasks:

Television

How does television affect our lives? It can be very helpful to people who carefully choose the shows that they watch. Television can increase our knowledge of the outside world, there are high quality

programmers that helps us to understand many fields of study, science, medicine, the arts and so on. Moreover, television benefits very old people, who can't often leave the house as well as patients in hospitals. It also offers non native speakers the advantage of daily informal language practice. They can increase their vocabulary and practice listening.

On the other hand, there are several serious disadvantages of television. Of course, it provides us with a pleasant way to relax and spend our free time, but in some countries, people watch the 'blood tube' for an average of six hours or more a day. Many children stare at a television screen for more hours each day than they do anything else including studying & sleeping. It's clear that the tube has a powerful influence on their lives and that its influence if often negative.

1. Save your work as "Television" on Desktop.
2. Set the heading : Font Times New Roman Size 18, align Centre & Bold,
3. Set the remaining text with font Calibri & size 12
4. Underline the heading & change all letters to uppercase
5. Run the spell checker.
6. Apply indentation to the first line of the second paragraph
7. Change the line spacing of the paragraphs to 1.5.
8. Replace the word "screen" with monitor.
9. Apply a 6pt width page border to the document
10. Change the Page orientation to Landscape

Q. Type the given text in similar format using list in the word:

1. Select the first, then hold CTRL whilst selecting the rest
➢ Right click on them
➢ Double click on them
➢ Use the TAB button
2. How do you get capital letters using just one finger?
   ▪ Use the SHIFT LOCK key
   ▪ Use the TAB key
   ▪ Use the ESCAPE key
   ▪ Use the CTRL key
3. What is the short cut for copying data to the clipboard?
   • CTRL + C
   • CTRL + X
   • CTRL + Z
   • CTRL + V

Q. Create a table as shown below.

Student Name		Marks1	Marks2
First Name	Last Name		

1. Enter the detail in the table

2. Insert one row after Marks 2 and name its heading as Total
3. Calculate total of Marks1 & Marks2 and enter in Total Column
4. Bold the Student Name, Marks1, Marks2 ,& Total

Q. Type the following text in Hindi using UNICODE

हँसी शरीर के स्वास्थ्य का शुभ सवांद देने वाली है। वह एक साथ ही शरीर और मन को प्रसन्न करती है। पाचन शक्ति बढाती है, रक्त को चलती है और अधिक पसीना लाती है। हँसी एक शक्तिशाली दवा है। एक डॉक्टर कहता है कि वह जीवन कि मीठी मदिरा है। डॉक्टर ह्युड कहता है कि आनंद से बड़कर बहुमूल्य वस्तु मनुष्य के पास और कोई नहीं। कारलाइल एक राजकुमार था। संसार त्यागी हो गया था वह कहता है कि जो जी से हँसता है, वह कभी बुरा नहीं होता। जी से हँसो, तुम्हे अच्छा लगेगा। अपने मित्र को हँसाओ, अव अधिक प्रसन्न होगा। शत्रु को हँसाओ, तुम से कम घर्णा करेगा। एक अनजान को हँसाओ, तुम पर भरोसा करेगा। उदास को हँसाओ, उसका दुःख घटेगा। एक निराश को हँसाओ, उसकी आशा बढेगी। एक बूढ़े को हँसाओ, वह अपने को जवान समझने लगेगा। एक बालक को हँसाओ, उसके स्वास्थ्य में वृद्धि होगी। वह प्रसन्न और प्यारा बालक बनेगा। पर हमारे जीवन का उद्देश्य केवल हँसी ही नहीं है, हमको बहुत काम करने हैं। तथापि उन कामों में, कष्टों में और चिंताओं में एक सुँदर आतंरिक हँसी, बड़ी प्यारी वस्तु भगवान ने दी है।

Q. Send a letter to your classmates using mail merge.

Q. Write about introduction of computer and insert pictures related to it.

Q. Open Microsoft Excel and perform the following

- Input experimental data into Microsoft Excel worksheet.
- Properly format and organize data inserted.
- Perform calculations using built-in functions.
- Generate simple and effective tables and graphs
- Integrate both graphs and tables created in MS Excel into MS Word document.

Q. Make Power Point Slides to explain various input devices
Q. Make Power Point Slides to explain various output devices
Q. Make Power Point Slides to show various tourist places of Madhya Pradesh.
Q. Apply text and slide transitions
Q. Insert image & sound file in Presentation
Q. Create a project report using MS Word + AI summarizer
Q. Develop a sales report and analyze it using Excel + AI insights
Q. Prepare a multimedia presentation with AI design tools
Q. Create a student database using MS Access and connect it to Excel
Q. Use AI assistant (ChatGPT/Copilot) to automate office workflows

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SEMESTER-I
1DCA3(A)-Database Using MySQL
ELECTIVE-I

Detail Syllabus

UNIT I: Introduction to database concept , Need of database, Flat Database, Database Management System, Characteristics of DBMS ,Relational Database, Entity and Referential Integrity, Database Concept of primary key, Database Application Example, Banking, Railways, School, Retail Store. Database Elements - Tables, Query, Form, Report.

UNIT II: My SQL Database, Its Features, Installation on Windows, Making it works on Command Line, Using the Built in Database, Running and Shutting down MySql Server, Setting up MySql user account. CREATE and DROP database, Important Administrative Mysql database commands– SHOW DATABASE, USE DATABASE, SHOW TABLES, SHOW COLUMN, and SHOW INDEX.

UNIT III: Database Query Commands DDL, DML, DCL, Creating Tables Using SQL Commands, Using various Data Types, Applying constraints on Tables, Updating, Deleting MySQL Tables, Inserting Data, Updating and Deleting Data - Retrieving Data From a MySQL Database- Sorting Data Retrieved from a MySQL Database- Using WHERE to Filter data. SQL Functions and Operators Control flow function, String Function, Numerical Function.

UNIT IV: Advanced MySQL-Data Filtering- AND, OR, NOT and IN- MySQL Wildcard Filtering using LIKE- MySQL Regular Expression Searches - Joining Tables in MySQL, Applying Grouping of data by Group By, MySQL Data Aggregation Functions- MySQL Users and Security- Administering and Monitoring MySQL using the MySQL Commands.

UNIT V: Example Applications for My Sql database- Workbench and PhpMyAdmin, Graphical user Interface of PhPMyAdmin, PhPMyAdmin Features, Installation, Use of different section of PhpMyAdmin, Managing database with PhPMyAdmin, Browse, Structure, Search, Insert, Empty, Drop, Create new tables and add data, Execute MySql query with sql tab.

Reference Books:

- A Guide to MySql Philip J Pratt
- Learning MySql Seyed MM TahaghaghiO'Reillay Publications
- https://dev.mysql.com/doc/refman/5.6/en/
- https://www.analysisandsolutions.com/code/mysql-tutorial.htm

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Practical Questions:

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Q. Create New Database name "**student"** (with relevant data type)and add following records:

Roll_NO	FNAME	SNAME	CITY	COURSE	FEE_DEPOSITED
100	ANIL	VRCE	BHOPAL	DCA	1000.00
101	SUNIL	RANA	DELHI	DCA	500.00
102	MEHUL	KOSHIK	BOMBAY	PGDCA	1500.00
104	MADHURI	CHANDI	PATNA	BCA	1200.00
105	PRMOD	MEHRA	NAGPUR	DCA	2000.00
106	SANDIP	DHEER	NAGPUR	PGDCA	1200.00
107	SHIVANI	VIRAR	SURAT	PGDCA	1000.00
108	KRANTI	NEHRU	DELHI	DCA	500.00
109	MINU	POWAI	BHOPAL	PGDCA	700.00
110	VINOD	SINHA	BHOPAL	BCA	800.00

Perform the following operation on above database:

- To display all records in the database
- To display records based on some conditions
- To display the structure of the database
- To display FNAME and city whose course name is DCA
- To delete current record
- To delete records based on some condition
- To delete all the records in current database
- To replace all BOMBAY with MUMBAI
- To give details of FNAME & SNAME having fees deposited between 1400 and 3000.
- Modify the table and add one more field "INSTITUTE_NAME" and fill the data
- Sort/Index with City
- Sort/Index with FNAME & SNAME
- To count the number of records in the database
- To calculate the total fees deposited
- To input records and add them in the database
- Find the name of the student who deposited minimum fees
- To Display the sum of fees deposited by all DCA students
- To Display the sum of fees deposited in each course
- Add one more column "FINE" in table and insert 50 Rs in each record.
- Add one more column "TOTAL" in table and update the table as TOTAL = FEE_DEPOSITED + FINE
- Delete the column "TOTAL"
- Create two tables with attribute of your choice and perform the Join operation

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SEMESTER-I
1DCA3 (B) Database Using MS Access
ELECTIVE-I

Detail Syllabus:

UNIT I: Introduction to database -What is a Database, Why use a Relational Database, Overview of Database Design- Data Normalization (Determining tables, Determining Fields, Determining Relationships) Integrity Rules (Primary/Foreign Key, One-to-Many, Many-to-Many, One-to-One) Introduction to MS Access (Objects, Navigation).

UNIT II: Tables in Database, Create a Table in MS Access- Data Types, Field Properties, Fields: names, types, properties- default values, format, caption, validation rules Data Entry, Add record delete record and edit text, Sort, find/replace, filter/ select, rearrange columns, freeze columns. Edit a Tables- copy, delete, import, modify table structure, find, replace.

UNIT III: Working with Query, Setting up Relationships- Define relationships, add a relationship, set a rule for Referential Integrity, change the join type, delete a relationship, save relationship Queries & Filter - difference between queries and filter, filter using multiple fields AND, OR, advance filter Queries, create Query with one table, find record with select query, find duplicate record with query, find unmatched record with query, run query, save and change query.

UNIT IV: Working with Forms, Introduction to Forms Types of Basic Forms: Columnar, Tabular, Datasheet, Main/Subforms, add headers and footers, add fields to form, add text to form use label option button, check box, combo box, list box Forms Wizard, Create Template.

UNIT V: Working with Reports, Introduction to Reports, Types of Basic Reports: Single Column, Tabular Report Groups/Total, single table report, multi table report preview report print report, Creating Reports and Labels, Wizard.

Reference Books:

- MS Office XP complete BPB publication ISBN 8 1-7656-564-4.
- MS Access fast & easy by Faithe Wempen PHI.

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Practical Questions:

Q. Create New Database name "**student**" (with relevant data type) and add following records:

Roll_NO	FNAME	SNAME	CITY	COURSE	FEE_DEPOSITED
100	ANIL	VRCE	BHOPAL	DCA	1000.00
101	SUNIL	RANA	DELHI	DCA	500.00
102	MEHUL	KOSHIK	BOMBAY	PGDCA	1500.00
104	MADHURI	CHANDI	PATNA	BCA	1200.00
105	PRMOD	MEHRA	NAGPUR	DCA	2000.00
106	SANDIP	DHEER	NAGPUR	PGDCA	1200.00
107	SHIVANI	VIRAR	SURAT	PGDCA	1000.00
108	KRANTI	NEHRU	DELHI	DCA	500.00
109	MINU	POWAI	BHOPAL	PGDCA	700.00
110	VINOD	SINHA	BHOPAL	BCA	800.00

Perform the following operation on above database:

- To display all records in the database
- To display records based on some conditions
- To display the structure of the database
- To display FNAME and city whose course name is dca
- To delete current record
- To delete records based on some condition
- To delete all the records in current database
- To replace all BOMBAY with MUMBAI
- To give details of FNAME & SNAME having fees deposited between 1400 and 3000.
- Modify the table and add one more field "INSTITUTE_NAME" and fill the data
- Sort/Index with City
- Sort/Index with FNAME & SNAME
- To count the number of records in the database
- To calculate the total fees deposited
- To input records and add them in the database
- Find the name of the student who deposited minimum fees
- To Display the sum of fees deposited by all DCA students
- To Display the sum of fees deposited in each course
- Add one more column "FINE" in table and insert 50 Rs in each record.
- Add one more column "TOTAL" in table and update the table as TOTAL = FEE_DEPOSITED + FINE
- Delete the column "TOTAL"
- Create two tables with attribute of your choice and perform the join operation
- Create form to Input data using various controls

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SEMESTER-I

SEMESTER-II
2DCA1– Multimedia and Current IT Trends

Detail syllabus:

UNIT I: Multimedia Definition and concept, need of Multimedia, areas of use, multimedia elements– Text, Images, Sound, Animation and Video, Multimedia Hardware and Software requirement. Making simple Multimedia with PowerPoint, Applications of multimedia in different industries– Education, Entertainment, Journalism etc., Future of Multimedia, Career in Multimedia Production. Emerging multimedia trends: 3D animation, Virtual Reality (VR), Augmented Reality (AR), Immersive Media.

UNIT II: Text as a component of Multimedia, Concepts of plain & formatted text, RTF & HTML texts, Object Linking and Embedding concept, Fonts– need & types, Importance of sound in Multimedia, Mono V/S Stereo Sound, Effects in Sound, Analog V/S Digital Sound, Overview of Various Sound File Formats on PC WAV, MP3. Concept of MIDI, Software for sound editing and mixing. Video and audio streaming technologies – overview of YouTube, Podcasts, and Reels as digital media tools.

UNIT III: E-governance, e-democracy, Government efforts to encourage citizen participation, PPP model, E-governance websites & services- SAMADHAN online, CM Helpline, MP-Online services, mygov.in of government of India UIDI & Adhar, E-governance mobile apps like Umang, Digital Locker, Digital Library, Introduction to cybercrime, types of attacks & crime – email fraud, phishing, spoofing, hacking, spyware, malware, spam mail, logic bombs, denial of service, identity theft. Digital ethics and data privacy. Role of AI and Blockchain in e-Governance and cybersecurity.

UNIT IV: Introduction to wireless LAN, Blue tooth, WiFi, WiMax Mobile technology, 2G, 3G, 4G services, IMEI, SIM, IP Telephony, Soft phone, Voice mail, Ad-hoc & sensor networks, GIS, ISP Mobile Computing, Cellular System Cell, Mobile Switching office, Hands off, Base Station. Wearable technology and smart devices. Introduction to Internet of Things (IoT): concept, devices, applications in smart homes, health, and transport

UNIT V: Artificial Intelligence and Expert system- Concepts of AI & Expert Systems, Merits and Demerits of Expert system, Application of Expert system and Cloud computing– Introduction, types, application, services, Google drive, GoogleDoc, Google form, Machine Learning (ML) and Introduction to Generative AI tools (e.g., ChatGPT, Gemini, Copilot).

Reference Books:

- Fundamentals of Information Technology By Alex Leon & Leon, Vikas Publications
- Frontiers Of Electronic Commerce, By-Kalakota, Ravi; Stone, Tom, Whinston, Andrew B, Addison Wesley Publishing Co, ISBN 8178080575
- E-Commerce An Indian Perspective (Second Edition) By Pt Joseph, S.J., Prentice-Hall Of India
- Recent Magazines of Computers and Communication
- Multimedia: Making It Work (4th Edition) By Thyvaughan, Tata Mcgraw Hills
- Multimedia in Action James E Shuman, Vikas Publishing House

SEMESTER-II
2DCA2- Web Technologies and E-Commerce

Detail syllabus:

UNIT I: Introduction to Internet - Internet Evolution, Word Wide Web (WWW), Advantages and Disadvantages, Internet Vs Intranet, the purpose and function of an Internet Service Provider (ISP), Connectivity - Dialup, Leased line, VSAT, URLs, Portals, Internet Services, Application, E-MAIL-Basics of Sending & Receiving, Free Email services, Protocols, FTP, DNS, TCP, UDP, HTTP, IP Telnet Concept, Internet chatting- Voice chat, Text chat, Web Servers, Space on Host Server for Website, Web Portals & Web publishing concepts, Domain name registration.

UNIT II: Applications of Internet, Basic Operations using Internet Browser-Working with browsers, View History in Browser, Search Engines, Searching information on Wikipedia, Subscribing and reading newspapers online, Typing text in the regional language- Google input tools, Using Google Maps, Online Ticket Booking, Apply for PAN Card/Passport/Aadhar Card online, Pay electricity bill and service tax online, Downloading eBooks, Using JustDial/quikr.com/getit.co.in/sulekha.com to find online services, social sites, Client server architecture & characteristics, Telnet (Remote login concepts).

UNIT III: HTML- Concepts of Hypertext, Versions of HTML, Elements of HTML, HTML editors, Tags and attributes, Syntax, Head & Body Sections, Building, HTML Documents. Inserting Texts, Images, List& its type, Hyperlinks, Backgrounds and Color Controls, Table Layout and Presentation, Use of Font Size & Attributes, List Types and Its Tags, Use of Frames and Forms in, Web Pages HTML, Form and frame Design tools.

UNIT IV: JavaScript Overview, syntax & conventions. Variables, Expressions, Branching & Looping statements, Functions, Arrays Objects, Events & Document Object Model- onClick, onMouseOver, on Submit, on Focus, on Change, onBlur, onLoad, onUnload, Alerts, Prompts & Confirms.

UNIT V: Introduction to E-Commerce, Electronic Commerce Framework, Evolution of E-commerce, Advantages and Disadvantage of E-commerce, Introduction, E-organization, Electronic Payment Systems, Electronic Cash, Smart Cards and Credit Card Based, Risks, Online Banking, E-Banking, E-Wallet, E shopping, E-Marketing: The scope of E-Marketing, M-commerce-introduction, Potential Growth and Future, Mobile banking, Paytm, Bhim, UPI app etc.

Reference Books:

- Level Module - M 1.2 - Internet & Web Page Designing By V.K.Jain – Bpb Publications.
- E-Commerce An Indian Perspective (Second Edition) - By P. T. Joseph, S.J. Prentice-Hall Of India
- Internet For Everyone - Alexis Leon And Mathews Leon, Vikas Publishing House Pvt. Ltd., New Delhi
- Internet For Dummies - Pustak Mahal, New Delhi
- A Beginners Guide To Html Available At:Http://Www.Ncsa.Uiuc.Edu /General/Internet /Www.htmlprimerall.html
- Introduction to JavaScript Available at - Www. mcu. Ac. In/Javascriptguide.pdf

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Practical Questions:

Q1. How to link an image to another page in HTML,
Q2. How to create a link that opens a new web page window or tab.
Q3. How to create links to sections on the same page in HTML.
Q4. Creating images as links with no borders.
Q5. Creating a link without an underline in HTML.
Q6. Changing link color when moving mouse over link in HTML.
Q7. Creating a link to play a sound file in HTML.
Q8. How to create a link that goes to top of a web page.
Q9. Creating HTML push button link and creating an HTML back button.
Q10. How to create a link to automatically run .exe file once downloaded.
Q11. Creating a mail link on a web page

SEMESTER-II
2DCA3 (A)– Digital Media Publishing
Elective-II

Detail Syllabus

UNIT I: Introduction to Desk Top Publishing (DTP), Photocomposing Machines & DTP, Definition, Need and Area of Application. Use of DTP in Offset Printing & Web Designing, Use of Desk Top Publishing in Publications, Importance of D.T.P in Publication, Advantage of D.T.P in Publication, Page Layout & Designing in a single page production. Laser printers - Use, Types, Advantage of laser printer in publication Difference between a word processor and Publication Software, Use and importance of DTP in Publication & Newspaper Printing, Various DTP Softwares and its application area Introduction to Offset Printing Technology, Printers, Formatting of a text: Typography, Fonts, Point Size, Spacing, Breaks, Measurements etc. DTP & Page Layout Designing Types of Printing: Lithography, Flexography, Gravure, Screen Printing, Offset Printing. Print Media & Offset Printing. Terms used in Offset Printing: Bleed, CMYK, Transparent Printouts - Bromide & Film. Halftone, Impression, Saddle Stitch, Perfect Bind, Negative & Positives for Plate were making.

UNIT II: Introduction to Adobe Page Maker 7.0, Aldus & Adobe Page Maker, Previous and current versions of Page Maker, Page Maker as a DTP Software, Difference between a Page Maker & Word Processing Software Attribute settings: Tools, Styles, Menus, Templates, Alignments, Grids, Guides etc. Keyboard shortcuts, Templates & its use Page Layouts– Margins and Page Orientations with various page sizes, Text Editing and Manipulation, Magazine & News Paper Page Layouts Filters, Import and Export options, Placing of Text and Images, Auto flow and Story Editor, Different Layout views, Control Palatte, Layers & its use Tab setting, Columns & Gutters, Use of Styles, Palettes & Colors, Import & Export of files, Document Setup & Preferences. Master Pages and its use.

UNIT III: Adobe Page Maker-Page and document setup, working with rulers, setting the unit measurement, Bullets, Column Balancing, Breaks Arrange, Fill & Stroke Options. Text Wrapping, Widows & Orphan lines, Revert Command and its use, Using Drop Caps and various style formats, Editing of Graphics and Frames. Defining Styles OLE & Embedding, Plugins, Mathematic Equation, Table Editor and it use. Polygon Setting & Rounded Corners Master Pages, Headers & Footers, Frame Options, View Menu Options, Print Setup Options. Paste Multiple & Paste Special. Managing and Printing Publications – Tiles, multiple copies etc. Use of Page Maker in News paper and Magazines, Various Page Layout Designing Practical's.

UNIT IV: Introduction to Adobe Photoshop, Photoshop Documents, Various Graphic Files and Extensions- JPG, GIF, PNG, TIF, BMP, PSD, CDR, SVG etc., Photoshop Environment Graphic Files: Vector Image and Raster Images. Definition, Features, Area of application etc., Advantages and Disadvantages Vector & Raster Graphics, Bitmap Graphics and its qualities Pixels, Application Programs to work on Vector Graphics and Raster Graphics. Color Modes and Color Models: HSB, RGB, CMYK, Bitmap, Gray Scale, Duotone. Color Mode Conversion Image: Image Size and Resolution, Changing Image Size and Resolution, Getting Image from Input Devices, Creating New

image in Photoshop Using File Browser, Opening and Importing Selecting Image, Adjusting Pixel, Snap command, Saving and Loading Selection, Deleting Selection.

UNIT V: Photoshop– Introduction PSD files, Screen and Work Area Interfaces: Menu Bar, Option Bar, Palette, Active Image Area, Tool Box List etc. Opening a File, Saving a File, Closing a File, Tool: Icons, Name and usage of Each tool, Setting history Option, Basic Image Manipulations, Photoshop Layers & Palettes: Use of Layers, Creating using layer, Using layer palette, Working with layered Image: Layer and Layer sets, Selecting Layers, Displaying Content of a Layer, Duplicating Layers, Changing Order of Layers, Renaming & Deleting Layers Filters: Using Filter Gallery, Filter Gallery Dialogue box, Applying and Blending Filters, Choosing various Filter Effects, Masking Tools & Effects, Using Channels. Introduction to InDesign, Interfaces, Commands & options, inserting text & images, News Paper & magazine page designing in InDesign

Reference Books:

- Adobe Photoshop 7 by Bpb PUBLISHING
- Adobe Premier Pro Class room in a book, the official training workbook, Adobe at ptgmedia.pearsoncmg.com
- InDesign CS6 in Simple Steps by Kogent Learning Solutions Inc. and Dreamtech Press

Practical Questions:

Q. Refer the following points and Design a logo for an organization/company
- Company name is Horizon Communication Ltd. with
- Design a Logo of a company/organization with tag line – Be connected.
- You can use symbols which show horizon.
- Company deals in building networks.
- Company works for customers in Bhopal only.
- Company wants to target government and private organizations both.
- Company wants a coloured logo not black and white.
- Prepare at least 3 variations of logo.

Q. Refer the following points and Design a Visiting Card based on following points:
- Design a visiting card for Dinesh Kumar Ahuja who is a managing director of Softech Pvt. Ltd.
- Company works in the field of web development.
- Visiting card should contain mobile no. 998—989-9898.
- Visiting card should contain office address E-3/333 Arera Colony, Bhopal.
- Visiting card size should 3.5 x 2 inches.
- Cards theme and colour should match the company's work profile.
- Try to prepare at least 4 variations for visiting card.

Q. Prepare Passport size photographs to print on A4 Sheet.
- Passport photograph size – 35 x 45 mm
- Select a photograph and resize it to 35 x 45 mm in passport size photograph style.
- Change the background of photo to plain background.
- Insert name and date on photograph.
- Place 20 photographs in a 4 x 5 pattern to print them on a A4 Sheet.

Q. Colorize a black and white photograph to color.
- Select any black white (old) photograph of your parents or relatives.
- Scan this photograph.
- Colorize the photograph with your imagination.
- Try to match skin tone hair color.
- Try to colorize dress and environment as real as possible.
- Finally save the new image in jpeg format.

SEMESTER-II
2DCA3(B)- Graphic Design with CorelDRAW
ELECTIVE-II

Detail Syllabus:

UNIT I: Graphics in Multimedia, Importance of Graphics in Multimedia, Vector and Raster Graphics, Image Capturing Methods Scanner, Digital Camera Etc. Various Attributes of Images - Size, Color, Bit Depth, Resolution etc, Various Image File Format BMP, DIB, EPS, PIC, and TIF Format Their Features and limitations.

UNIT II: Video and Animation in Multimedia, Impact of Video in Multimedia, Basics of Video Analog and Digital Video, How to use video on PC, Brief note on various video standards PAL, NTSC, Different file formats and their use in Multimedia, MPEG, AVI, MJPG, Name of video editing software, Basics of Animation, Types of Animation and use of Animation, Software for Creating Animations.

UNIT III: Introduction to CorelDRAW, Usage and Advantages, Introduction to User Interface, Introduction to tool panel and workspaces, Introduction to various size and formats of panels and layouts, File layouts and layout properties, Objects and using color profiles.

UNIT IV: Text tools and text properties, Creating Vector graphics by using editing tools, Importing Images and graphics in CorelDRAW layout, Creating shapes and editing shapes, Drawing curves and editing curves, Creating special text effects, Creating special object effects, using color effects.

UNIT V: Using grid and rulers, Tracing images and graphics, working with borders and page arrangements, Using Masking effects with Text, Using Masking effects with objects.

Books and References :

- Learn Corel Draw 11 by BPB PUBLISHING
- Corel Draw the official Guide by Gray David Bouton, Corel Press
- Corel Draw Course 11, 12, X To X5 BY VISHNU P. SINGH, BPB PUBLISHING

Practical Questions:

Q. Refer the following points and Design a Birthday Party invitation card. Invitation Card should contain following:

- Size of card – 4.5 x 6.25 or 5 x 7 inches
- Invitation Matter (Hindi or English)
- Name of Birthday Boy/Girl. (Hindi or English)
- Venue name & address (Hindi or English)
- Date of Birthday Party
- Host Name & address
- Card Template and colour should match with mood of occasion.

Q. Design a cover page for a book on "Human Behaviour". Book Cover should include the following:

- Name of Book
- A picture or graphics related to theme.
- Name of author (Dr. XYZ Kumar)
- Name of Publisher and logo (Any publisher of your choice).
- Price of the book.
- Cover page of Book 6 x 9 inches.
- Insert pictures and graphics according to theme.

Q. Design a Newspaper front page. The front page should include the following points:

- Masthead (newspaper name and logo)
- Price and Date
- Lead of story headline
- Inside stories
- Lead Story Write up
- Your front page Picture
- May include an advertisement.
- Front page of newspaper size - 16.5 x 23.4 inches.
- Insert pictures and graphics according to news.

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