

**Syllabus**  
**Diploma in Computer Application**  
**(DCA)**

Directorate of Distance Education  
Mahatma Gandhi Antarrashtriya Hindi Vishwavidyalaya  
Gandhi Hills, Post – Hindi Vishwavidyalaya, Wardha

# Diploma in Computer Application (DCA)

Duration : 01 Year (Minimum) 03 Year (Maximum)

अवधि : 01 वर्ष (न्यूनतम) 03 वर्ष (अधिकतम)

Credit : 32 Credit

क्रेडिट : 32 क्रेडिट

Semester : Two Semester (16 Credit per Semester )

सेमेस्टर : दो सेमेस्टर ( 16 क्रेडिट प्रत्येक सेमेस्टर)

Fees/शुल्क :

| पाठ्यक्रम शुल्क     | प्रवेश शुल्क | नामांकन शुल्क | परिचय पत्र | परीक्षा शुल्क        | उपाधि/प्रमाणपत्र शुल्क |
|---------------------|--------------|---------------|------------|----------------------|------------------------|
| 2000 (प्रथम सत्र)   | 200          | 200           | 100        | 250 प्रति प्रश्नपत्र | 250                    |
| 2250 (द्वितीय सत्र) |              |               |            |                      |                        |

Medium/ माध्यम:Hindi /English हिंदी/अंग्रेजी

Eligibility/योग्यता : 10+2 Passed/10+2 उत्तीर्ण

First Semester:

| Paper Code<br>प्रश्नपत्र कोड | Paper Title प्रश्नपत्र शीर्षक   | Credit क्रेडिट |
|------------------------------|---|----------------|
| DCA-01                       | कम्प्यूटर: आधारभूत परिचय<br>Fundamentals of Computer  | 04             |
| DCA-02                       | ऑपरेटिंग सिस्टम एवं एप्लीकेशन प्रोग्राम<br>Operating System and Application Program           | 04             |
| DCA-03                       | प्रोग्रामिंग लैंग्वेज<br>Programming Language   | 04             |
| DCA-04                       | सी प्रोग्रामिंग का व्यावहारिक प्रशिक्षण<br>Practical on C Programming and Application Program | 02             |
| DCA-05                       | एप्लीकेशन प्रोग्राम का व्यावहारिक प्रशिक्षण<br>Practical on Application Program               | 02             |
|                              | कुलTotal  | 16 Credits     |

Second Semester:

| Paper Code | Paper Title   | Credit |
|------------|---|--------|
| DCA-06     | डाटा बेस प्रबंधन प्रणाली<br>Data Base Management System         | 04     |
| DCA-07     | विजुअल बेसिक<br>Visual Basics (VB)                              | 04     |
| DCA-08     | इंटरनेट एवं वेबपेज डिजाइनिंग<br>Internet and Web Page Designing | 04     |
| DCA-09     | परियोजना कार्य  | 04     |

|  |              |            |
|--|--------------|------------|
|  | Project Work |            |
|  | कुलTotal     | 16 Credits |

## First Semester

### DCA-01 Fundamentals of Computer

#### Unit – I Introduction to Computer

- History of development of computers
- Computer system concepts
- Characteristics
- Capabilities and limitations
- Generations of computers.
- Basic components of a computer system – Control Unit, ALU, I/ O Devices, memory – RAM, ROM, EPROM, PROM, Flash Memory and other types of memory.

#### Unit – II Storage Devices

- Storage fundamentals – Primary Vs Secondary
- Data Storage and Retrieval methods – Sequential, Direct and Index Sequential.
- Various Storage Devices – Magnetic Tape, Magnetic Disks, Cartridge Tape, Data Drives, Hard Disk Drives, Floppy (Winchester Disk), Disks, Optical Disks, CD, VCD, CD-R, CD-RW, Zip Drive, DVD, SVCD.

#### Unit – III Computer Software

- Types of Software – System software, Application software, Utility Software, Demoware, Shareware, Freeware, Firmware, Free Software.
- Operating Systems – Functions, Types – Batch Processing, Single User, Multi User, Multi-programming, Multi-Tasking.
- Programming languages – Machine, Assembly, High Level, 4 GL.
- Data representation in computers.
- Number System of computers – Binary, Octal, Hexa Decimal – Representation & their conversion.
- Coding System – ASCII, BCD, and EBCDIC etc.
- Computer Viruses

#### Reference Book:

1. Sinha, P.K.( 2007). *Computer Fundamentals*. New Delhi: BPB Publications.
2. Mukhi, Vijay (2008). *Working with UNIX*. New Delhi: BPB Publications.
3. Rajaraman, V. (2014). *Fundamental of Computer*. New Delhi: Prentice Hall India Pvt. Limited.
4. Rajoriya, Sheetanshu (2013). *Computer Fundamentals*. Indore: Kamal Prakashan.

# DCA-02 Operating System and Application Program

## Unit – I Disk Operating System (DOS)

- Introduction, History & Versions of DOS

### DOS basics

- Physical structure of disk, drive name, FAT, file & directory structure and naming rules, booting process, DOS system files.

### Basic DOS Commands

- Internal – DIR, MD, CD, RD, Copy, DEL, REN, VOL, DATE, TIME, CLS, PATH, TYPE etc.
- External – CHKDSK, PRINT, DISKCOPY, DOSKEY, MOVE, LABEL, FORMAT, SORT, FDISK, BACKUP, EDIT, MODE, ATTRIB, HELP, SYS etc.
- Executable V/s Non executable files in DOS

## Unit –II Windows

- Windows concepts, features, windows structure, desktop, taskbar, start menu, my computer, Recycle Bin.
- Windows Accessories – Calculator, Notepad, Paint, WordPad, Character map.
- Windows Explorer – Creating folders and other Explorer facilities.
- Entertainment – CD Player, DVD Player, Media Player, Sound Recorder, Volume Control.

## Unit – III Linux

- Introduction, History & Versions of Linux

### Linux basics

- Physical structure of disk, drive name, FAT, file & directory structure and naming rules, booting process, Linux system files.

### Basic Linux Commands

- Internal – LS, Make Directory, CD, CP,MB, DEL, REN, DATE, TIME, CLEAR, etc.
- Executable V/s Non executable files in Linux

## Unit –IV Microsoft Office (MS Word, Excel, Power Point)

### Word Processing: MS Word

- Introduction to Word Processing
- Introduction to MS Word: features, Creating, Saving and Opening documents in Word, Interface, Toolbars, Ruler, Menus, Keyboard Shortcut.
- Editing a Document – Moving, Scrolling in a document, Opening Multi document windows, Editing Text – Selecting, Inserting, deleting, moving text.
- Previewing documents, Printing documents – Print a document from the standard toolbar, Print a document from the menu, shrinking a document to fit a page, Reduce the number of pages by one.
- Formatting Documents: Paragraph formats, Aligning Text and Paragraph, Borders and Shading, Headers and Footers, Multiple Columns.

### Worksheet: MS Excel

- Worksheet basics
- Creating worksheet, entering data into worksheet, heading information, data, text, dates, Cell formatting values, saving & protecting worksheet.
- Opening and moving around in an existing worksheet
- Toolbars and Menus, keyboard shortcuts

- Working with single and multiple workbook – coping, renaming, moving, adding and deleting, coping entries and moving between workbooks
- Working with formulas & cell referencing.
  - Autosum
  - Coping formulas
  - Absolute & Relative addressing
- Working with ranges – creating, editing and selecting ranges, sorting.
- Formatting of worksheet – Auto format, changing – alignment, character styles, column width, date format, borders & colours, currency signs.
- Previewing & Printing worksheet – Page setting, Print titles, Adjusting margins, Page break, headers and footers.
- Graphs and charts – using wizards, various charts type, formatting grid lines & legends, previewing & printing charts.

### **Presentation Graphics: MS Power Point**

- Features and various versions
- Creating presentation using Slide master and template in various colour scheme
- Working with different views and menus of power point
- Working with slides – Make new slide, move, copy, delete, duplicate, lay outing of slide, zoom in or out of a slide.
- Editing and formatting text: Alignment, editing, inserting, deleting, selecting, formatting of text, find and replace text.
- Bullets, footer, paragraph formatting, spell checking.
- Printing presentation – Print slides, notes, handouts and outlines.
- Inserting Objects – Drawing and inserting objects using Clip Art's pictures and charts.
- Custom Animation – slide transition effects and other animation effects.
- Presenting the show – making stand alone presentation

### Reference:

1. Mansoor, A. *I.T. Tools and Applications*. Matura : Pragya Publications .
2. Norton, Peter (2000.). *Peter Norton Complete Guide to Linux*. New Delhi : Techmedia Publications .
3. Dubey, Manoj (2013). *P C Packages*. Indore : Kamal Prakashan.

## **DCA-03 Programming Language**

### **Unit – I C Language : Introduction**

- Introduction
- C Character Set , Constants, Variables and Key words

### **Unit – II Decision and Control Structure**

- if ,if-elses, forms of if-elses statement
- Operator
- Types of Loops
- Case and Switch

### **Unit –III Arrays and Functions**

- Arrays
- C Functions – Call by values and Call by reference

Reference:

- 1 Balaguruswami, E. (2008). *Programming with C*. New Delhi : Tata McGraw Hill.
- 2 Kernighan, Brian W. & Ritchie, Dennis M. (1988). *The C Programming Language ANSI C*. Prentice Hall PTR
- 3 Singh, Minakshi & Singh, VishnuPriya . *C Programming*. Delhi : Asian Publisher .
- 4 Jain, Abhinav. *The Ocean of C*. Indore : Nakoda Publishers & Printers. (7<sup>th</sup> Edition)

## **DCA-04 Practical on C Programming**

Each candidate will present a small program with the help of C Programming. Evaluation will be done on the basis of written program, Practical presentation on Computer and Viva.

## **DCA-05 Practical on Application Program**

Each candidate will present a small program with the help of Application Program each. Evaluation will be done on the basis of written program, Practical presentation on Computer and Viva.

# Second Semester

## DCA -06 Data Base Management System

### Unit–I Data Base Management System

- Introduction to Database and RDBMS -Database Concepts- So What is Database? Manual Database System, Comparison between a manual and, Computerized Database System, Common DBMS, Introduction to Microsoft Access, Features of Access, Starting Access, Access Terminology, Exiting Access, Microsoft Access Hardware & Software Requirements
- Designing a Database- About designing a database, Steps in designing a database, Creating a Database- Creating a Database using blank database, Creating a Database using Database Wizard, Opening a existing database

### Unit –II Data Base Tables

- Tables- Introduction to Tables, Different Ways of creating a table, Guidelines for naming fields, controls and objects, Creating a table by entering data in a datasheet, Create a table using the Table Wizard, Working with Tables
- Designing a Table- Create a table from scratch using Design view, Field/Variable name Conventions,About the Data types, Setting Primary Keys, Field Properties - Field Size, Format, Decimal Places, Input Mask, Caption, Default Value, Data Validation, Required, Allow Zero Length, Indexed, Sorting and Filtering Data.
- Modifying the Table Design - To insert the field within the table, Rename a field name in a table, Deleting Fields, Moving Fields, Changing a Field Size, Saving a Table, Working with Tables in Datasheet View - Viewing the Table in Datasheet view, Adding Records, Sizing the Columns, Navigating the Datasheet - Using the navigation Buttons, Using the Go To Menu, Finding a Specific Value - Using Wildcards, Editing And Deleting Records, Undoing Edits, Cutting, Copying and Pasting Data ,Sorting and Filtering Data in a Datasheet - Quick-Sort Feature ,Filter By Selection.
- Relationship - Relationship in a Database, How to relationship work, Types of Mapping in Relationships, Define Relationships.

### Unit–III Query Basics and SQL

- Query Basics- What is a Query? Usage of Queries, Types of Queries, Steps for Creating a Query, The Design View, Working With Fields, Changing the order of Fields, Removing a Field, Inserting a Field, Hiding Fields, Sorting in Query. Perform Calculation in a Query, Creating a Query, Query by Criteria, Examples of select query, Example of Cross Tab query, Creating Cross Tab Query, Working with Action Queries, Creating Make Table Query, Creating Append Query, Creating Delete Query, Creating Update Query, Setting Query Properties.
- Working with SQL

### Unit – IV Report

- Report, Introduction, Parts of a Report, Creating a Report, Creating a Columnar Report with Auto Report, Tabular Auto report, Creating Reports with Wizards, Examples of Report

Reference :

1. Microsoft Access 2013 by Joyce Cox and Joan Lambert Published by Microsoft Press
2. Web Link  
([http://www.pdf-files.com/pdf/files/English/Software/Microsoft\\_Access\\_2013\\_Step\\_By\\_Step.pdf](http://www.pdf-files.com/pdf/files/English/Software/Microsoft_Access_2013_Step_By_Step.pdf))

3. Bayross, Ivan. *Mastering Database Technologies*. New Delhi : BPB Publications.
4. Majumdar, Arun K & Bahttacharya, P. (2008). *Database Management System*. New Delhi : Tata McGraw Hills Publishing Company Limited.
5. Maheshwari, Sharad & Jain, S.(2007). *Database Management System*. New Delhi : firewall Media.
6. Bansal, V& Bhatia, A.B.(2015). *Database Management System*. New Delhi : Narosa Publishing House.
7. Silberschatz, A. , Korth, H. F. & Sudarshan, S.(2006). *Database System Concepts.*, New Delhi : McGraw Hill.



## **DCA -07 Visual Basics (VB)**

### **Unit- 1 Introduction to Visual Basics Controls**

- VB Interface
- Tool Box
- Object Browser Control
- Input Box
- Message Box
- Project Explore
- Standard Control
- Common Dialogue Control

### **Unit-2 Data Types**

- Types of Variables
- Variable declaration
- Array

### **Unit-3 VB Function and Sub Routine**

- Sub routine and functions
- Adding, Removing forms
- Uses of Input Box
- Properties Window
- Debugging

### **Unit-4 Connectivity with Data Base and Report**

- Looping
- Data Controls
- Data Bound Controls
- Data Grids
- Data Reports

#### **Reference :**

- 1 Jerke, Noel (1998). Visual Basic 6.0 The complete Reference. New Delhi : Tata McGraw Hill Publishing Company Limited.
- 2 Smilly, John(2001). *Visual Basic Database* .New Delhi : Firewall Media.
- 3 Mauer, Lowell. Visual Basic 6.0 (Hindi). New Delhi: B.P.B. Publisher
- 4 Naik, Nitin K.(2013). *Basics of Visual Basic*. Indore : Kamal Prakashan.

## **DCA-08 Internet and Web Page Designing**

### **Unit – I Internet**

- Evolution, Protocols, Interface Concepts, Internet Vs Intranet, Growth of Internet, ISP, Connectivity – Dial-up, Leased line, VSAT etc. URLs, Domain names, Portals, Application.E-Mail
- Concepts, POP and WEB Based E-mail, merits, address, Basic of Sending & Receiving, E-mail Protocols, Mailing List, and Free E-mail services, FTP.

### **Unit – II World Wide Web (WWW)**

- History, Working, Web Browsers, Its functions, Concept of Search Engines. Searching the Web, HTTP, URLs, Web Servers, Web Protocols.

### **Unit – III Web Publishing**

- Concepts, Domain name Registration, Space on Host Server for Web site, HTML, Design tools, HTML editors, Image editors, Issues on Web site creations & Maintenance, FTP software for upload web site.

### **Unit – IV 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.

Reference :

- 1 Pawel, Thomas A(2010). *HTML Complete Reference*. New Delhi: Tata McGraw Hill.
- 2 BPB.Web & Graphics .New Delhi: B.P.B Publisher.
- 3 Singh, Minakshi & Singh,VishnuPriya. Web Designing Course. Delhi : Asian Publisher .
- 4 Naik, Nitin K.(2014). *Internet Web Technology E- Commerce*. Indore : Kamal Prakashan.

## **DCA-09 Project Work**

All the students must submit a project with the help of applications given below :

1. C Language
2. Visual Basics and DBMS
3. HTML

## प्रथम सेमेस्टर

### **DCA-01** कम्प्यूटर: आधारभूत परिचय

- इकाई 1 – कम्प्यूटर: परिचय
- इकाई 2 – संग्रहण डिवाइसेस
- इकाई 3 – कम्प्यूटर साफ्टवेअर

### **DCA-02** ऑपरेटिंग सिस्टम एवं एप्लीकेशन प्रोग्राम

- इकाई 1 – डिस्क ऑपरेटिंग सिस्टम
- इकाई 2 – विंडोज
- इकाई 3 – लिनक्स
- इकाई 4 – माइक्रोसाफ्ट ऑफिस ( एमएस वर्ड, एक्सेल, पॉवर पांइट)

### **DCA-03** प्रोग्रामिंग लैंग्वेज

- इकाई 1 – सी लैंग्वेज : परिचय
- इकाई 2 – डिजीजन एवं कंट्रोल संरचना
- इकाई 3 – ऐरे और फंक्शन्स

### **DCA-04** सीप्रोग्रामिंगकाव्यावहारिकप्रशिक्षण

### **DCA-05** एप्लीकेशनप्रोग्रामकाव्यावहारिकप्रशिक्षण

## द्वितीयसेमेस्टर

### **DCA-06** डाटाबेसप्रबंधन प्रणाली

- इकाई 1 – डाटा बेस प्रबंधन प्रणाली
- इकाई 2 – डाटा बेस सारणी
- इकाई 3 – क्वेरी बेसिक्स और एसक्यूएल
- इकाई 4 – रिपोर्ट

### **DCA-07** विजुअलबेसिक

- इकाई 1 – विजुअल बेसिक नियंत्रण: एक परिचय
- इकाई 2 – डाटा प्रकार
- इकाई 3 – वीबीफंक्शन्स एवं सब रूटीन
- इकाई 4 – डाटा बेस कनेक्टिविटी और रिपोर्ट

### **DCA-08** इंटरनेट एवं वेबपेज डिजाइनिंग

- इकाई 1 – इंटरनेट
- इकाई 2 – वर्ल्ड वाइड वेब
- इकाई 3 – वेब पब्लिशिंग
- इकाई 4 – एचटीएमएल

### **DCA-09** परियोजनाकार्यसभी विद्यार्थियों को निम्नलिखित एप्लीकेशंस में से किसी एक की सहायता से परियोजना कार्य सम्पन्न करना होगा- C Language, Visual Basics and DBMS, HTML.

## Proposed Evaluation (DCA):

### First Semester:

| Paper Code/<br>प्रश्नपत्र<br>कोड | Paper Title<br>/प्रश्नपत्र शीर्षक   | Assignment<br>/<br>सत्रीय कार्य | Minimum<br>Passing<br>Marks in<br>Assignment | Semester End<br>Exam/<br>सत्रांत परीक्षा  | Minimum<br>Passing<br>Marks in<br>Semester<br>End Exam | Total |
|----------------------------------|---|---------------------------------|--|---|--|-------|
| DCA-01                           | कम्प्यूटरआधारभूत :<br>परिचय<br>Fundamentals<br>of Computer  | 30                              | 12   | 70  | 28   | 100   |
| DCA-02                           | ऑपरेटिंग सिस्टम<br>एवं एप्लीकेशन<br>प्रोग्राम<br>Operating<br>System and<br>Application<br>Program              | 30                              | 12   | 70  | 28   | 100   |
| DCA-03                           | प्रोग्रामिंग लैंग्वेज<br>Programming<br>Language  | 30                              | 12   | 70  | 28   | 100   |
| DCA-04                           | सी प्रोग्रामिंग का<br>व्यावहारिक<br>प्रशिक्षण<br>Practical on C<br>Programming<br>and<br>Application<br>Program | -                               |  | 50<br>(10 no. for<br>Program<br>Writing in<br>Copy)<br>(30 no. for<br>Presenting of<br>Program on<br>Computer)<br>( 10 no. for<br>Viva) | 20   | 50    |
| DCA-05                           | एप्लीकेशन प्रोग्राम<br>का व्यावहारिक<br>प्रशिक्षण<br>Practical on<br>Application<br>Program                     | -                               |  | 50<br>(10 no. for<br>Program<br>Writing in<br>Copy)<br>(30 no. for<br>Presenting of<br>Program on<br>Computer)<br>( 10 no. for<br>Viva) | 20   | 50    |
|                                  |   |                                 |  |   | Total  | 400   |

**Second Semester:**

| Paper Code/<br>प्रश्नपत्र<br>कोड | Paper Title<br>/प्रश्नपत्र शीर्षक  | Assignment<br>/<br>सत्रीय कार्य | Minimum<br>Passing<br>Marks in<br>Assignment | Semester End<br>Exam/<br>सत्रांत परीक्षा  | Minimum<br>Passing<br>Marks in<br>Semester<br>End Exam | Total |
|----------------------------------|--|---------------------------------|--|---|--|-------|
| DCA-06                           | डाटा बेस प्रबंधन<br>प्रणाली<br>Data Base<br>Management<br>System         | 30                              | 12   | 70  | 28   | 100   |
| DCA-07                           | विजुअल बेसिक<br>Visual Basics<br>(VB)                                    | 30                              | 12   | 70  | 28   | 100   |
| DCA-08                           | इंटरनेट एवं वेबपेज<br>डिजाइनिंग<br>Internet and<br>Web Page<br>Designing | 30                              | 12   | 70  | 28   | 100   |
| DCA-09                           | परियोजना कार्य<br>Project Work   | -                               | -  | 100<br>(25 no. for<br>Project<br>Report(Hard<br>Copy))<br>(50 no. for<br>project<br>Presentation and<br>live demo of<br>Program)<br>( 25 no. for<br>Viva) | 40   | 100   |
|                                  |  |                                 |  |   | Total  | 400   |