

**S. S. Jain Subodh P.G. (Autonomous) College**  
**Rambagh Circle, Jaipur**

*Academic Session 2023-24*

Scheme of Examination and  
Proposed Syllabus for  
**Post Graduate Diploma in Computer Application(PGDCA)**

## **One Year (Two semesters) Full Time Program**

The course of study of Post Graduate Diploma in Computer Science (PGDCA) shall extend over a period of **two semesters** spread over one year. On satisfactory completion of the course and after passing the examinations, a candidate will be awarded the Post Graduate Diploma in Computer Science.

The academic year shall be divided into two semesters. Semester I start from July and ends in December. Semester II start from January and ends in June and so on. There shall be an examination at the end of each semester.

The examination of each semester will consist of five theory papers, and four practical papers.

Medium of instructions and examination will be **English** only.

### **Eligibility for Admission:**

Admission procedure for I semester starts in the month of June/July every year. The admission of the PGDCA course should be any of the stream (Arts/Science/Commerce) a candidate must have passed Graduation with 50% or more (48% for SC/ST/OBC/SOBC category) in aggregate without any approximation.

### **Examination Scheme:**

Each theory paper shall be of 100 marks (70 marks for written examination of 3 hrs duration and 30 marks for internal assessment).

Each practical paper shall be of 100 marks (60 for practical exam and 40 for internal assessment).

The basis for internal evaluation in theory shall be home assignment, internal test and regularities in the attendance.

The basis for internal assessment in the laboratory courses shall be timely submission of the lab. records, performance in the lab., internal tests etc.

Each theory paper examination will be of three-hour duration and shall carry 70 marks. Theory paper shall contain three parts.

- a) Part A will contain 12 questions of very short questions each carrying 1 mark. Students will have to attempt any 10 questions.
- b) Part B, will contain 4 short descriptive types of questions each carrying 5 marks, all are compulsory.
- c) Part C, will contain 4 long descriptive types of questions (from each unit) with internal choice each carrying 10 marks, all questions are compulsory.

Each practical examination (Maximum marks 100) will be of four- hour duration on one day and carry 60 marks for exercise(s) assigned in the examination and Viva-Voce , and 40 marks for the Internal Assessment.



## Semester Structure (PGDCA)

### Semester I

Paper No.	Subject	Teaching Hrs. Per Week	End Semester Exam (ESE)	Continuous Internal Assessment (CIA)	Exam Hours	Credits
<b>Theory Paper</b>						
PDCA101	Computer Fundamentals & Office Tools	04	70	30	03	4
PDCA102	Programming Fundamentals through 'C'	04	70	30	03	4
PDCA103	Web Development Tools	04	70	30	03	4
PDCA104	Networking Technologies	04	70	30	03	4
PDCA105	Operating System	04	70	30	03	4
<b>Practical Paper</b>						
PDCA151	Office Management Lab.	03	60	40	03	4
PDCA152	'C' Programming Lab.	03	60	40	03	4
PDCA153	Web Authoring Tool Lab.	03	60	40	03	4
PDCA154	Networking Lab.	03	60	40	03	4
	<b>Total</b>	<b>32</b>	<b>590</b>	<b>310</b>	<b>27</b>	<b>36</b>

## **Semester II**

<b>Paper No.</b>	<b>Subject</b>	<b>Teaching Hrs. Per Week</b>	<b>End Semester Exam (ESE)</b>	<b>Continuous Internal Assessment (CIA)</b>	<b>Exam Hours</b>	<b>Credits</b>
<b>Theory Paper</b>						
PDCA201	Data Base Management System	04	70	30	03	4
PDCA202	Object Oriented Programming Concepts	04	70	30	03	4
PDCA203	Desktop Publishing	04	70	30	03	4
PDCA204	Tally	04	70	30	03	4
PDCA205	System Analysis and Design	04	70	30	03	4
<b>Practical Paper</b>						
PDCA251	SQL Lab	03	60	40	03	4
PDCA252	C++ Programming Lab.	03	60	40	03	4
PDCA253	Desktop Publishing Lab	03	60	40	03	4
PDCA254	Tally Lab.	03	60	40	03	4
	<b>Total</b>	<b>32</b>	<b>590</b>	<b>310</b>	<b>27</b>	<b>36</b>

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## **PGDCA Semester –I**

### **PDCA101-Computer Fundamentals & Office Tool**

#### **COURSE OUTCOMES**

- CO1: Gain a comprehensive understanding of the working principle of computers and their memory systems.
- CO2: Acquire knowledge about the functions and uses of input and output devices.
- CO3: Differentiate between software types and hardware components and comprehend their interaction.
- CO4: Understand various mediums of data transmission and evaluate their respective advantages and disadvantages.
- CO5: Comprehend the internet, its applications, and the importance of internet security.

#### **UNIT I**

**Introduction:** Computer: Definition, Generations, Structure of Computer System, Hardware/Software, Input and Output Devices, Memory: Definition, Types of Memory, Memory Hierarchy (Secondary Memory, Primary Memory, Cache Memory, Registers), Types of Computers (Analog, Digital, Hybrid, Mini, Micro, Mainframe, Super), Types of Software (System/Application/Utility), Translators (Interpreters/Compilers/Assemblers), WinZip Application, Antivirus.

#### **UNIT II**

**Word processing software – MS Word 2007:** Features of MS Word, Tabs (Home, Insert, Page Layout, References, Mailings, Review, View, Design, Layout), Creating, Opening, Saving documents, Moving, Copying and Formatting Text, Header and Footer, Page Formatting, Find and Replace Text, Spell Checking and Grammar Checking, Insertion (Tables, Objects, Picture, Files etc.), Word Art, Customizing MS Word, Designing Pages, Mail Merge, Macro, Track Changes

#### **UNIT III**

**Spreadsheet Software – MS Excel 2007 :** Spreadsheet terminology, Organization of the Worksheet Area, Entering Information, Conditional Formatting, Moving, Copying, Inserting, Deleting Rows and Columns, Formatting Worksheet, Printing Worksheet, Charts, Using date, time, Cell Reference, Using statistical, mathematical and financial functions, Data Validation, Filter

#### **UNIT IV**

**Database Management System – Ms Access 2007:** Creating and Editing tables, Entering Data into Database Tables, Viewing Records, Query, Forms and Reports.

**Presentation Software- MS PowerPoint 2007:** Anatomy of a power point Presentation, Creating and Viewing a Presentation. Managing Slideshows, Navigating through a Presentation. Using Hyperlinks, Advanced Navigation with Action Setting and Action Buttons, Organizing Formats with Master, Applying and Modifying Designs, Insertion (Graphics, Multimedia, Animation)

#### **Reference Books:**

1. R.K. Taxali: PC Software for Windows Tata McGraw Hill.
2. Courtier: Mastering Office 2000, BPP Publications.
3. Bott & Leonard : Using Microsoft Office 2000, Prentice Hall of India
4. Leon, and Lcon, SQL, Tata Mc Graw Hill Pub. Co. Ltd.

# PDCA102-Programming Fundamentals through ‘C’

*Max Marks: 100 (ESE: 70    CIA: 30)*

*Passing marks: 40*

## **Course Outcomes:**

CO1: Understand the concept of Algorithms and different symbols used in flowcharts

CO2: Develop conditional and iterative statements to write C programs.

CO3: Utilize user-defined functions to solve real-time problems.

CO4: Create C programs that utilize pointers to access arrays, strings, and functions.

CO5: Apply user-defined data types, including structures and unions, to solve problems.

CO6: Demonstrate the concept of file handling to showcase input and output operations in C programs.

## **UNIT- I**

Fundamentals of C: Programming Concepts, Algorithm & Flowchart, History and Importance of C, Basic Structure and Execution of C Programs, Constants, Variables, and Data Types, Operators, Operator Precedence and associativity. Managing Input and output Operations, Decision Making and Branching.

## **UNIT- II**

Iteration: while, do...while, for loop, nested loops, break & continue, goto statements.

Arrays and Strings: One-dimensional arrays and their declaration and initialization, two-dimensional arrays and their initializations, string - handling functions.

## **UNIT-III**

Functions: Need and elements of user –defined functions, definition of functions, return values and their types, function calls and declaration, recursion, parameter passing, passing arrays and strings to functions, the scope, visibility and life time of variables.

Understanding Pointers: Accessing the address of a variable, declaration and initialization of pointer variables, accessing a variable through its pointer, pointers and arrays, functions returning pointers.

## **UNIT -IV**

Structures and Unions: Defining structure, declaring structure variable and accessing structure members, initialization of structure, structures of arrays, union, size of structure. I/O in C: Formatted and Un-formatted I/O, File handling.

## **Reference Books:**

1. E. Balagurusamy – Programming in ANSI C, 3rd Edn. , TMH, New Delhi ; 2004.
2. Programming with C, B.S.Gottfried (TMH).
3. Y. Kanetkar – Let us C, 4th Edition, BPB Publication, New Delhi; 2002.
4. Kerighan & Richie The C programming language (PHI Publication).

# PDCA103-Web Development Tools

*Max Marks: 100 (ESE: 70 CIA: 30)*

*Passing marks: 40*

## **Course Outcomes:**

CO1: Understand the fundamentals of Internet, and the principles of web design.

CO2: Able to construct websites using HTML and Cascading Style Sheets.

CO3: Able to build dynamic web pages with validation using Java Script objects CO4: Implement the event handling mechanisms.

## **UNIT- I**

**Internet Basics:** Basic concepts, communication on the internet, internet domains, internet server identities, establishing connectivity on the internet, client IP address, A brief overview of TCP/IP and its services, transmission control protocol, web server, web client, domain registration.

**Introduction to HTML:** HTML, HTML tags, commonly used HTML commands, text formatting, text style, lists, adding graphics to HTML documents, tables, linking documents, frames, Forms, Image Maps.

## **UNIT-II**

**Introduction to DHTML:** features of DHTML, CSS: Types of Style sheets, Different elements of Style sheets, Filter effects, IFrame, DIV and Layer Tags.

**Understanding XML:** SGML, XML, XML and HTML, modeling XML data.

## **UNIT- III**

**Java Script:** Java script in web pages, advantages of java script, advantages of java script, data types and literals, type casting , java script array, operators and expression, conditional checking , function, user defined function.

## **UNIT- IV**

**DOM Hierarchy:** Different objects of DOM (window, navigator, history, form, frames etc.), Form validation, Event handling in Java script.

## **Reference Books:**

1. M.L. Young: Complete Reference b: Internet; 2nd Edition; Tata Mc Graw Hill,2006.
2. Thomas A. Powel; Web Design: C.R.; Second Edition; TMH, 2009.
3. Thomas A. Powel; HTML & XHTML: C.R.; Fourth Edition; TMH, 2008.
4. Harely Hahn: The Internet, Tata Mc Graw Hill.
5. G. Robertson: Hands on HTML, BPB Publications.
6. Joel Sklar: Principles of Web Design, BPB Publications.



# PDCA104-Networking Technologies

Max Marks: 100 (ESE: 70      CIA: 30)

Passing marks: 40

## Course Outcomes:

CO1: Able to understand network communication using the layered concept, Open System Interconnect (OSI) and TCP/IP Model.

CO2: Understand various types of transmission media, network devices; and parameters of evaluation of performance for each media and device.

CO3: Understand the concept of flow control, error control and LAN protocols

CO4: Understand the working principles of LAN and the concepts behind physical and logical addressing.

## UNIT I

Network Communication Model- Network architecture, configuring network, network strategies, networks types, LAN, MAN and WAN, Introduction to Malicious Software, Network security (Virus, Worms etc).

## UNIT II

Introduction to OSI model- The physical layer (bandwidth limited signals, transmission media, wireless transmission), the data link layer, error detection and correction,

## UNIT III

Data link protocols, the medium access sub layer, the channel allocation problem, multiple access protocol, the transport layer, the application layer, Bridge and functionality of bridges, Routers, Gateways ,concept of IP addressing with class structure.

## UNIT IV

Introduction to TCP/IP [Understand the TCP/IP Protocol Suite, its history and modification processes compare TCP/IP to Open Systems Interconnection (OSI) reference model, Examine a number of TCP/IP applications such as FTP, Telnet, DNS, DHCP etc.

## Reference Books

1. Andrew S. Tanenbaum, Computer Networks, Prentice Hall
2. Behrouz A forouzan, TCP/IP, Tata Mc Graw Hill Pub. Co.
3. DE Corner and DL Stevens, Internet working with TCP/IP Volume I-III, Prentice Hall of India.
4. Wright and Stevens, TCP/IP Illustrated, Pearson Education Asia.
5. Karanjit S. Siyan, Inside TCP/IP, Techmedia.
6. D. Bertsekas and R. Gallager, "Data Networks", 2nd Edition, Prentice Hall, 1992.

# PDCA105-Operating System

*Max Marks: 100 (ESE: 70    CIA: 30)*

*Passing marks: 40*

## **Course Outcomes:**

CO1: Analyze various scheduling algorithms.

CO2: Understand deadlock, prevention and avoidance algorithms.

CO3: Compare and contrast various memory management schemes.

CO4: Understand the functionality of file systems. CO5: Understand the Open source operating system and basic Linux commands

## **UNIT- I**

Introduction to Operating System: Evolution of operating system, characteristics, types of operating system, function of operating system, concepts of process and files, systems calls.

Process Management: Process concept, process scheduling, process states. CPU scheduling: Types of schedulers, scheduling algorithms.

## **UNIT- II**

Memory management: Logical and Physical address space, swapping, Contiguous allocating, multiple partitions, fragmentation compaction, paging, segmentation, Virtual memory management, demand paging, page replacement algorithms.

## **UNIT-III**

Deadlock: The deadlock problem, characterization prevention, avoidance detection and recovery from deadlock, process concurrency concept, precedence graph. Critical section problem, Semaphores and Interprocess Communication.

File-System: File concept, access methods, directory structure, protection. File-system structure. Directory implementation, allocation methods, free-space management.

## **UNIT- IV**

Mass-Storage Structure: Disk structure, disk scheduling, disk management, swap-space management.

Security and Protection: Goals of protection, domain of protection, access matrix, implementation of access matrix; revocation of access rights.

## **Reference Books:**

1. James L. Peterson & A. Silberschatz: Operating System Concepts.
2. Andrew S. Tenenbaum : Modern Operating Systems; Prentice Hall, India.
3. Systems Programming & Operating Systems, 2nd Edn., Tata Mc Graw Hill.
4. Operating System by Achyut Godbole.
5. Operating System by Galvin.

## **PDCA151: Office Management Lab.**

### **Course Outcomes:**

CO1: Able to use MS Office (word processor, spreadsheet and power point) professionally.  
CO2: Develop understanding about the writing of effective business letters in computer through word processing.

CO3: Able to use spreadsheet program for business data processing.

CO4: Acquire skills for development and presentation of power point report.

Examination: Practical

Exercises to be framed so as to cover the topics and tools covered in theory paper.

## **PDCA152: 'C' Programming Lab.**

### **Course Outcomes:**

CO1: Develop a C program based on a given task or algorithm.

CO2: Read, comprehend, and trace the execution of C programs.

CO3: Implement C programs using arrays, pointers, decision-making statements, and looping statements.

CO4: Write programs that perform operations utilizing derived data types.

CO5: Develop and implement modular applications in C by effectively utilizing functions.

CO6: Develop applications in C that leverage structures and pointers.

Examination: Practical

Exercises to be framed so as to cover the topics and tools covered in theory paper.

## **PDCA153: Web Authoring Tool Lab.**

### **Course Outcomes:**

CO1: Creating webpages using basic HTML tags

CO2: Styling Webpages using CSS

CO3: Creating dynamic web pages using Javascript

CO4: Implementation of DOM objects

CO5: Creating web pages implementing event handling, form Validation etc.

Examination: Practical

Exercises to be framed so as to cover the topics and tools covered in theory paper

## **PDCA154: Networking Lab.**

### **Course Outcomes:**

CO1: Installation of Operating System (Windows)

CO2: Installation of Application and System software

CO3: Crimping and networking of computers

Syllabus of Practical lab is according to the topics mentioned in the theory subject.

# **PGDCA Semester-II**

## **PDCA201-DataBase Management System**

*Max Marks: 100 (ESE: 70    CIA: 30)*

*Passing marks: 40*

### **Course Outcomes:**

CO1: Gain a solid understanding of the fundamental concepts of database management systems, including data models, data independence, database architecture, and components.

CO2: Learn the principles and techniques involved in relational database management systems.

CO3: Ability to transform user requirements into efficient and well-structured database schemas.

CO4: Develop proficiency in SQL

### **UNIT- I**

Database System Concepts & Architecture: Overview of DBMS, Basic DBMS terminology, data base system v/s file system, data independence. Architecture of a DBMS, Schemas, Instances, Database Languages, Database Administrator, Data Models.

### **UNIT- II**

Data Modeling: Data modeling using the Entity Relationship Model: ER model concepts, notation for ER diagram, mapping constraints, keys, Concepts of Super Key, candidate key, primary key, Generalization, aggregation.

Relational Algebra: Fundamental operations of relational algebra & their implementation, interdependence of operations.

### **UNIT -III**

Database Design: Functional dependencies, nonloss decomposition, 1st, 2nd & 3rd normal forms, dependency preservation, boyce codd NF.

Transactions: Schedules, serializability, precedence graph, concurrency control techniques.

### **UNIT- IV**

Introduction to SQL: Characteristics of SQL, Advantages of SQL, SQL data types and literals, Types of SQL commands, SQL operators and their procedure, Tables, views and indexes, Queries and sub queries, Aggregate functions, insert, update and delete operations, Joins, Unions, Intersection, Minus in SQL.

### **Reference Books:**

1. Fundamental of Database Systems by R. Elmasri; S. Navate; Benjamin Cummings.
2. Introduction to database systems by C. J .Date.
3. Database System Concepts- Abraham Silberschat, Henry F. Korth, S.Sudarshan, Tata McGraw Hill.
4. Principles of Database Management by James Martin.
5. Database Management Systems by Bipin Desai.

# PDCA202- Object oriented Programming Concepts

Max Marks: 100 (ESE: 70 CIA: 30)

Passing marks: 40

## COURSE OUTCOMES:

- CO1: Understand the concepts of OOPs
- CO2: Understand the use of constructors, destructors and functions
- CO3: Create programs based on arrays, and Strings
- CO4: Implementation of polymorphism, inheritance, exception handling
- CO5: Understand the concept of file management

## UNIT- I

Introduction to Object Oriented Concepts: Evolution of OOP, OOP Paradigm, advantages of OOP, comparison between functional programming and OOP approach, characteristics of object oriented language – objects, classes, inheritance, reusability, user defined data types, polymorphism, overloading.  
Introduction to C++: C++ tokens, data types, C++ operators, type conversion, variable declaration, arrays, statements, expressions, conditional statements, Jumping statements, loops, functions, pointers, structures.

## UNIT-II

Classes and Objects: Classes, objects, defining member functions, arrays of class objects, pointers and classes, passing objects, constructors, types of constructors, destructors, this pointer, access specifiers, friend functions.

## UNIT-III

Inheritance: Introduction, types of inheritance, Importance of Inheritance, Constructor and Destructor in derived classes, types of base classes, multiple inheritances.  
Polymorphism: Function overloading, operator overloading, virtual functions, pure virtual functions

## UNIT-IV

File Management: Handling Data files (sequential and random), Opening and closing of files, stream state member functions.  
Templates, Exception Handling

## Reference Books:

1. Robert Lafore; Object Oriented Programming in C++; 4th Edition; Techmedia.
2. Balagurusamy E.; Object Oriented Programming C++; 4th Edition; TMH, 2009.
3. Venugopal, Rajkumar; Mastering C++; Tata Mcgrow Hill, 2006.
4. Kanetkar Y.; LET US C++; BPB; 2009.
5. Deitel and Deitel: How to Program C++, addison Wesley, Pearson Education Asia.
6. John R. Hubbard, Programming with C++, McGraw Hill International.

# PDCA203- Desktop Publishing (DTP)

Max Marks: 100 (ESE: 70      CIA: 30)

Passing marks: 40

## **COURSE OUTCOMES:**

CO1: Understand the fundamentals & concepts of Adobe Photoshop

CO2: Get a hands-on experience on PageMaker

CO3: Able to work with multiple layers

CO4: Understand the basic tools of Coral Draw

## **UNIT I**

### **Page Maker-**

Creating a New Document: - Setting the Margins, Setting the Page Size, Changing the Page Orientation, Setting the Page Numbers, Changing the Page size view, Displaying Rulers, Changing the Rulers Measurement System, Using Rulers, Using Guides, Adding Guide lines to Master Pages, Aligning to Guidelines, Displaying Guidelines, Locking Guidelines.

Entering Text: - Changing the font Families, Changing font size, Changing typeface styles, Changing Character Specifications, Changing type leading, Changing character width, Changing tracking.

Saving your document: - Saving a new document, Saving Existing Document, Saving a document as another document, Reverting to a previously saved version.

Developing a Paragraph: - Typing a text, Adding special character to text, Aligning text.

Formatting Paragraph:- Changing Indents, Changing the Space around paragraph, Changing Paragraph Alignment, Controlling How paragraphs break between pages and columns, Adding lines above or below your paragraph.

Creating a Frame: - Converting other objects to Frames, Selecting text & Dragging Text, Editing Text, Cutting, copying and Pasting Text, Using Undo & revert.

Inserting & removing pages

Adjusting Hyphenation

Adjusting Indents and Tabs:- Setting and Changing Tabs, Setting and Changing Indents, Settings the Leader Style, Resetting the Tab Ruler.

## **UNIT II**

### **Page Maker-**

Adding Shapes

Changing lines and fill specifications, Changing Round Corner, Creating Header & Footer

Defining Style:- Creating a new style, Editing a style, Removing Style, Copying style, Applying style to text, Changing style.

Developing a long Document:- Using Story Editor, Switch between story editor and layout editor, Closing the story editor and placing the story, Checking your spelling, Using find feature.

Using Color: - Opening a color palette, Adding color to text, Defining a custom colors.

Printing:- Printing your document, Printing a proof copies, Setting paper options.

## **UNIT III**

### **Photoshop-**

Introduction of Photoshop

Creating a New File:- Main Selections, Picking color, Filling a selection with color, More ways to choose colors and fill selections, Painting with paintbrush tool, Using the magic wand tool and applying a filter, Saving your document.

Color Mode:- Gray Scale Color Mode, RGB Color Mode, CMYK Color Mode, Bitmap Mode, Open a file, Preference.

Foreground & background:- Changing Foreground and Background colors, Using the Large color selection Boxes and small color swatches, Using the Eyedropper tool to sample Image color, Changing the Foreground Color While using a Painting Tool.

Using Brushes:- Millions of Brushes in One, Selecting the Brush Shape, Drawing a vertical and Horizontal Straight lines with any brush, Drawing connecting Straight Lines ( at any angle) with any brush, Creating a New Brush, Saving Brushes, Loading Brushes, Creating a Custom Brushes, Using the Painting Modes, Fade, Airbrush Options, Pencil Options.

Rubber Stamp Options: - Rubber stamps an Aligned Clone, Rubber Stamping, Impressionist Style, Using line tool.

Using the Editing Tool: - The Smudge Tool, The Blur and Sharpen Tool, The Dodge / Burn Tool, Shadows, Mid-tones and Highlights.

Selection Tools:- Making Rectangular and Square Selections, Feathering a Selections, Lasso Features, Lasso Options, Making selections by color or Gray Scale value using the Magic Wand, Moving an anchor point or Direction point to change the shape of curve, Adding and Removing Anchor points, Moving Path, Saving, Loading and Creating New Path, Filling & Stroking Path.

## **UNIT IV**

### **Photoshop-**

Introduction of layers: - Creating & editing new layers, adding a background.

Creating Layer Mask: - Layer Masks, Adjustment Layers.

Adding Fills and Gradients: - Filling with paint bucket tools, filling type with grading fills.

Applying Filters: - Blur Filters, Render Filters, Sharpen Filters, Sketch Filters, Texture Filters, Other Special Filters

Printing your document, save your file:- Save file as a JPEG, TIFF, GIF, PNG.

### **Coral draw-**

Introduction to coral draw, use and importance in designing, various graphic file and file extension, vector image and raster images, introduction to screen and work area.

Introduction to tool of coral draw, managing palettes, working with images, patterns and textures, working with shapes, colors and fills, image rasterization and editing, transformation menu.

Coral draw files and supporting documents, import and export of files and file formats, page setup and designing, using styles and templates, working with text, formatting text, text attributes.

Designing different page layouts, column layout, working with layers, special effect to objects and texts, contour tool, layout for news paper and magazines.

Preparation of visiting card and invitation cards, Shaping Dockers and logo design, introduction brochure and books, introduction to magazine designing.

### **Reference Books**

1. Complete Reference of Page Maker- Tata McGraw Hill
2. DTP Publishing Mint Page Maker – Springer Publication.
3. Photoshop in Easy Steps- Tata McGraw Hill
4. Coral Draw an Official Guide- Tata McGraw Hill
5. Cavigage Learning- Bring it Home with Coral Draw
6. Coral Draw in Simple Steps- Wiley Publication

# PDCA204-TALLY

Max Marks: 100 (ESE: 70      CIA: 30)

Passing marks: 40

## **Course Outcomes:**

CO1: Understating of Digital Accounting

CO2: Creation of Balance sheet and P&L statements

CO3: Understanding of cloud based accounting systems

## **UNIT I**

Introduction about Key Strokes, Students Tally Versions, Faculty

Business Organization: Service org., Trading org., Manufacturing org.

Accounting Principles, Concepts & Convention, Definition, Types of concepts

Types of Conventions

Transactions: Types of accounts, golden rules. Types of Journal Book, Accounting voucher in Tally.

Compound Journal Entry

Mode of Accounting: Posting, Trial balance

Financial Statement: Trading & P/L A/C. Balance Sheet, Processing Transaction in Tally

## **UNIT II**

Accounting with Tally

Accounting Basics, Understanding Ledgers & Groups, Understanding Voucher Types, Entering: Sales & Purchase, Payments & Receipts, Contra & Adjustments, Debit & Credit Notes. Reports: Printing - Exporting – Mailing, Bank Reconciliation & Printing Cheque.

## **UNIT III**

Inventory Management with Tally

Entering Inventory Details, Items with Groups & Categories, Multi Location Stock, Stock Transfer & Manufacturing, Purchase & Sales Order, Costing: Cost Centers & Categories, Job Costing, Item Costing, Purchase Costing, Job Work, Using Batch wise Details Batch/Lot Number, Manufacturing & Expiry Dates. Multiple Price Levels.

## **UNIT IV**

Taxation with Tally

Value Added Tax (VAT), Central Sales TAX, Manufacturer Excise, Dealer Excise, Service TAX, TDS, Payroll, Special Features: Multi Currency, Interest Calculation, Budgets & Controls.

## **Reference Books**

1. Tally ERP9 Series A reference Manual
2. Tally ERP9 – Dematech Press Easy & Simple



# PDCA205-System Analysis and Design

*Max Marks: 100 (ESE: 70*

*CIA: 30)*

*Passing marks: 40*

## **COURSE OUTCOMES:**

CO1: Understand the principles and tools of systems analysis and design

CO2: Understand the professional and ethical responsibilities of practicing the computer professional including understanding the need for quality

CO3: Solve a wide range of problems related to the analysis, design and construction of information systems

CO4: Analysis and Design of systems of small sizes.

## **UNIT I**

System Concept: Definition, Characteristics of System, Elements of System, Types of System (Physical and Abstract System, Open and Closed System), System Development Life Cycle, Considerations for System Planning and Control for System Success.

## **UNIT II**

Initial Investigation: Determining Users Requirements and Analysis, Fact Finding Process and Techniques.

Feasibility Study: Determination of Feasibility Study, Technical, Operational & Economic Feasibilities, Cost and Benefit Analysis.

## **UNIT III**

Information Gathering: need, Information about the firms, Information gathering tools, Interviewing, Arranging the Interview, Types of Interviews and Questionnaires, The Structured and Unstructured Alternatives.

Tools of Structured Analysis: Data Dictionary, Gantt Charts, System Model, Pseudo Codes, Flow Chart, Data Flow Diagram, Decision Tree, Decision Tables.

## **UNIT IV**

System Testing: Testing Strategies (Unit Testing, Integration Testing, Validation Testing, System Testing), Testing Techniques (Black-Box, White-Box), Quality Assurance. System Security: Data Security, Disaster/ Recovery, Threat and Risk Analysis.

Organization of EDP: Introduction, Job Responsibilities & duties of EDP Personnel's- EDP manager, Programmers, and Operators etc. Essential features in EDP.

## **Reference Books**

1. Igor Hawryszkiewycz, Introduction to System Analysis and Design, 4th edition, Prentice-Hall.
2. Jeffrey L. Whitten, and Lonnie D. Bentley, Systems analysis and Design Methods 4th edition, Tata McGraw-Hill.
3. Philip L Weaver, Practical SSADM ver 4+A Complete Tutorial Guider, Pitman publishing, 1995.
4. Mark Lejk, and David Deeks, an Introduction to System Analysis Techniques Prentice Hall.
5. Don Yeates, Maura Shields and David Helmy, System Analysis and Design Longman group limited, 1994.

### **PDCA251: SQL Lab.**

#### **COURSE OUTCOMES:**

CO1: Write both simple and complex SQL queries to retrieve information from databases with many tables to support business decision making.

CO2: Write SQL DDL to create, modify and drop objects within a relational database.

CO3: Retrieve and store information in a relational database using SQL in a multi-user environment.

Examination: Practical

Exercises to be framed so as to cover the topics and tools covered in theory paper.

### **PDCA252: C++ Programming Lab.**

#### **COURSE OUTCOMES:**

CO1: Implement various programming constructs of C++

CO2: Create classes and objects

CO3: Implement polymorphism and inheritance with classes and objects

CO4: Understand concept of virtual classes and exception handling

Examination: Practical

Exercises to be framed so as to cover the topics and tools covered in theory paper.

### **PDCA253: Desktop Publishing Lab.**

#### **COURSE OUTCOMES:**

CO1: Acquiring a new perspective on Printing

CO2: Improving and extending the range of Publishing

CO3: To give students the skills to create book works, building booklets

CO4: Building skills to create business cards, pamphlets, banners, calendars, logos etc.

Examination: Practical

Exercises to be framed so as to cover the topics and tools covered in theory paper.

### **PDCA254: Tally Lab.**

CO1: Creation of multiple companies in tally

CO2: Creation of Balance sheet and P&L statements

CO3: Digitization of receipts and vouchers

Examination: Practical

Exercises to be framed so as to cover the topics and tools covered in theory paper.