## ALAGAPPA UNIVERSITY, KARAIKUDI

**NEW SYLLABUS (w.e.f.2017-18)**

## POST GRADUATE DIPLOMA IN COMPUTER APPLICATIONS (PGDCA)

**REGULATIONS**

**1. Qualifications for Admission**

Candidates for admission to the PGDCA programme shall be required to have passed with a minimum of 50% marks in part III (a pass marks in case of SC/ST candidates) in any Bachelor’s Degree of Alagappa University or an examination accepted by the syndicate of the Alagappa University as equivalent thereto.

**2. Duration of the Programme**

The programme shall extend over a period of One Year consisting of two semesters. Each semester consists of a minimum of 90 working days.

**3. Subjects of Study and Scheme of Examinations**

The subjects of study and the scheme of examination shall be as shown in the programme structure.

**4. Requirements of Examination and Attendance**

Examinations will be conducted by the University in November and April of every academic year in different subjects according to the programme structure given below. A candidate will be permitted to appear for the University Examination in a particular subject at the end of each semester provided that he/she secures not less than 75% of attendance in that subject in that semester.

**5. Award of Marks**

The evaluation of each subject is through the Internal Assessment and End Semester Examinations (ESE). The Evaluation is as follows:

|  |  |  |  |
| --- | --- | --- | --- |
|  | **IA** | **ESE** | **Total** |
| Theory | 25 | 75 | 100 |
| Practical | 40 | 60 | 100 |

 IA – Internal Assessment ESE – End Semester Examination

Internal Assessment – Test – 15 marks (Average of Two Tests)

Two Assignments – 10 marks

End Semester Examination carries 75 marks of 3 Hours duration.

**6. Declaration of Results**

A candidate will be declared as pass in a subject if he/she secures at least 50 marks in each subject with a **minimum of External – 30 marks and Internal – 10 marks in theory subjects** and in the case of **Practical External 24 marks and Internal – 16 marks and put together 50 marks.** (i.e 40% of ESE and 40% of IA and put together 50% of marks in total)

**7. Procedure for Completing the Programme**

A candidate shall be permitted to continue the second semester irrespective of the failure in the subjects of the first semester. A candidate may register for all the arrear subjects in the subsequent semesters. A candidate will qualify for the award of the diploma only if he/she passes all the prescribed subjects not exceeding 3 years from the date of admission.

**8. Results and Classification**

Results will be declared after the completion of the semester examination with the following gradings:

1. A candidate who has passed all the examinations in the prescribed subjects within one year of admission shall be declared to have passed in First Class with Distinction provided he/she secures 75% or more in the aggregate and passes every subject in the first attempt.
2. A candidate who has passed all the examinations in the prescribed subjects shall be declared to have passed in First Class provided he/she secures 60% or more in the aggregate.
3. All other candidates who have passed all the examinations in the prescribed subjects shall be declared to have passed in Second Class.

**9. Award of Diploma**

All the candidates who have passed the examinations in all the prescribed subjects shall be eligible for the award of the Degree of Post Graduate Diploma in Computer Applications (PGDCA).

♣♣♣♣♣♣♣♣♣♣

**P.G.D.C.A. PROGRAMME STRUCTURE**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Course Code** | **Title of the Course** | **Hrs./****week** | **\*ESE Duration (Hours)** | **Internal** | **External** | **Total** |
| **Max.** | **Passing****Min.** | **Max.** | **Passing****Min.** | **Max.** | **Passing****Min.** |
| **I Semester** |
| 7PCA11 | Principles of Information Technology | 4 | 3 | 25 | 10 | 75 | 30 | 100 | 50 |
| 7PCA12 | System Analysis and Design | 4 | 3 | 25 | 10 | 75 | 30 | 100 | 50 |
| 7PCA13 | Programming in C | 4 | 3 | 25 | 10 | 75 | 30 | 100 | 50 |
| 7PCA14 | Multimedia and its Applications | 4 | 3 | 25 | 10 | 75 | 30 | 100 | 50 |
| 7PCA15 | Computer Lab I - Operating Systems and C Programming Lab | 4 | 3 | 40 | 16 | 60 | 24 | 100 | 50 |
| 7PCA16 | Computer Lab – II Multimedia and Office Automation Lab | 4 | 3 | 40 | 16 | 60 | 24 | 100 | 50 |
| **II Semester** |
| 7PCA21 | JAVA Programming  | 4 | 3 | 25 | 10 | 75 | 30 | 100 | 50 |
| 7PCA22 | Web Technology | 4 | 3 | 25 | 10 | 75 | 30 | 100 | 50 |
| 7PCA23 | RDBMS | 4 | 3 | 25 | 10 | 75 | 30 | 100 | 50 |
| 7PCA24 | Ecommerce | 4 | 3 | 25 | 10 | 75 | 30 | 100 | 50 |
| 7PCA25 | Computer Lab III – Java and RDBMS Lab | 4 | 3 | 40 | 16 | 60 | 24 | 100 | 50 |
| 7PCA26 | Computer Lab IV – WebTechnology Lab | 4 | 3 | 40 | 16 | 60 | 24 | 100 | 50 |

\*ESE – End Semester Examination

♣♣♣♣♣♣♣♣♣♣

**I SEMESTER**

**COURSE CODE: 7PCA11**

**PAPER – I - PRINCIPLES OF INFORMATION TECHNOLOGY**

**Unit - I**

An overview of Revolution in computers and communications: From the analog to the digital age – The elements of a computer and communication system – Communication: Development in Computer Technology, Developments in communication technology – Computer and communications technology combined: Connectivity and interactivity – The ethics of information technology.

**Unit – II**

Application software: Tools for thinking and working – Ethics and intellectual property Rights: Types of application software – The user interface and other basic user features – Word Processing – Spreadsheets – Database software – Presentation Graphics software – Communication software – Desktop accessories and personal information managers integrated software and studies – Groupware – Internet Web browsers – Specialized software.

**Unit - III**

Communications: Stating along with the information highway: The practical uses of communications and connectivity – Telephone related communication services – Video Conferencing and picture phones – Online information services – Using a microcomputer to communicate: Analog and Digital signals – Modems and Datacomm software, ISDN lines and Cable modems.

**Unit - IV**

Network Communication: Computer Network – Definition – Advantages and limitations – Types of Computer Networks: LAN, WAN, MAN – Network Topologies – Bus, Star, Ring and Tree – Transmission Media – Twisted Wire pair, Optical fibre, Wireless – ISO/OSI Network model.

**Unit - V**

Internet: Introduction – Basics – Benefits and Limitations – Internet Services – Internet protocols, Internet addressing, www – Browsers – Search Engines – E-mail, telnet, ftp, electronic conferencing and teleconferencing. IT Trends : E-commerce, M-commerce, Geographic Information System (GIS), Data Mining – Role of IT in different area – Education, Industry, Banking, Marketing, Public Services and others.

**Books for Reference:**

1. Stacey C Sawyer, Brain K Williams, Sarah E Hutchincon Using Information Technology – Brief version A practical Introduction to Computer and Communications Second Edition, The McGraw Hill Companies.
2. Fundamentals of IT: Leon and Leon; Leon Tec World.
3. Fundamentals of Computers – Comdex computer course kit Wiley publication
4. J Hames O’Brien – Introduction to Information Systems.

♣♣♣♣♣♣♣♣♣♣

**I SEMESTER**

**COURSE CODE: 7PCA12**

**PAPER – II - SYSTEM ANALYSIS AND DESIGN**

**Unit - I Systems concepts and the information systems environment:**

Introduction - The Systems concept – Definition – Characters of System – Elements of a system – Types of systems - **The system development Life Cycle**: Introduction - The system development Life Cycle - Considerations for candidate systems.

**Unit – II The Role of the Systems Analyst:**

Introduction – Definition – Historical Perspective – The Multifaceted Role of the Analyst – The Analyst / User Interface – The Place of the Analyst in the MIS organization – Rising positions in System development.

**Unit – III System Analysis:** **System planning and initial investigation:**

Introduction – Bases for planning in systems analysis – Initial investigation – **Information gathering:** Introduction – Information gathering tools.

**Unit – IV The Tools of Structured analysis:**

Introduction – The tools of structured analysis - **Feasibility Study:** System performance definition – Feasibility study – **Cost / Benefit Analysis:** Introduction – Data analysis – Cost / Benefit Analysis.

**Unit – V System Design:** **The Process and stages of systems design:**

Introduction – The process of design – Design methodologies – Major development activities – **Input/Output and forms design:** Introduction – Input design – Output design – **File organization and data base design:** Introduction – File organization – Data base design – **System Implementation:** System testing and quality assurance – Introduction – Test plan – Quality assurance – Data processing auditor.

**Text Book:**

1. System Analysis and Design – Elias M. Awad – Galgotia publications.

**Books for Reference:**

1. Systems Analysis and Design (9th Edition) 9th Edition - [Kenneth E. Kendall](https://www.amazon.com/Kenneth-E.-Kendall/e/B001IGJX3K/ref%3Ddp_byline_cont_book_1)  (Author), [Julie E. Kendall](https://www.amazon.com/Julie-E.-Kendall/e/B00IA9ZZ6C/ref%3Ddp_byline_cont_book_2)  (Author)
2. System Analysis and Design, Fifth Edition - Roberta M. Roth, Barbara Haley Wixom, Alan Dennis
3. Systems Analysis and Design, 10th Edition - Harry J. Rosenblatt

♣♣♣♣♣♣♣♣♣♣

**II SEMESTER**

**COURSE CODE: 7PCA13**

**PAPER – III - PROGRAMMING IN C**

**Unit – I**

Language Fundamentals : Program Structure – Identifiers – Data types – Integer – float – double – char – Constants – variables – Operators and Expressions – Managing Input and Output Operations.

**Unit - II**

Control Structural : Decision making with IF statement – IF……..ELSE statement – Nester IF…LSE statement – SWITCH statement - FOR –WHILE - DO……..WHILE statement –– GOTO statement.

**Unit – III**

Functions : Mathematical functions – String functions User – defined functions: Introduction – need – form of C functions – return values and their types – calling a function– categories of functions – nesting of functions – recursion – functions with arrays – the scope and lifetime of variables.

**Unit - IV**

Arrays: Definition, Declaration, Entering values in Array – Manipulating arrays – examining and passing an array.

**Unit -V**

Structures : Definition – assigning structure variable – assigning initial values – using a structures – structure arrays – structures and functions– Unions.

**Text Book:**

1. “Programming in C” – E.Balagurusamy, Tata McGraw Hill, 2000

**Book for Reference:**

1. “Programming Using The C Language” - R.C. Hutchison & S.B. Just, McGraw Hill, 1988.

♣♣♣♣♣♣♣♣♣♣

**I SEMESTER**

**COURSE CODE: 7PCA14**

**PAPER – IV - MULTIMEDIA AND ITS APPLICATIONS**

**Unit – I**

**Multimedia Basics:**What is Multimedia-Multimedia and Hypermedia-Overview ofMu1timedia Software Tools

**Unit – II**

**MuItimedia Authoring and Tools:**Multimedia Authoring - l Editing and Authoring Tools – VRML

**Unit – III**

**Pagemaker** :Basics – Menus – – Toolbar options – Creating Publications – Text operations – Paragraph basics - Publication basics

**Unit – IV**

**CorelDraw** – Working with Text and Lines – Working with lines – shapes – objects – Outlines – Fills – Curves

**Unit – V**

**Photoshop** – Menu – Tools – Understanding colors – Working Models

**Text Books:**

1. Fundamentals of Multimedia Ze-Nian Li and Mark S. Drew SclJQ.ol ofComputing Science, Pearson Education International.

**Webresource:**https://users.dimi.uniud.it/~antonio.dangelo/MMS/.../Fundamentals\_ofMultimedia.pd

1. Learning Desk Top Publishing (DTP), Ramesh Bangia, Khana Book Publsing (P) ltd

**Books for Reference:**

1. Gupta, Vikas (2004).Comdex Desk Top Publishing Course List. Delhi : Dream tech Press. Jain, Satish. BPB's DTP Course. New Delhi : BPB Publications.
2. Dream Tech Press (2012). Photoshop CS6 in Simple Steps. Delhi : Dream tech Press.
3. Dayley, L D & Dayley, B.(2012). Adobe Photoshop CS6. Wiley.
4. BPB Adobe Photoshop (2009). New Delhi : BPB Publications.
5. Sharma, M.C.(2009). Corel Draw : Graphics Suite X4. New Delhi : BPB Publications.
6. Singh, Vishnupriya (2008). Corel Draw. Delhi : Asian Computech books.
7. Kogent Learning Solution Inc.(2013). Corel Draw X6 in Simple Steps. Delhi : Dream tech Press

♣♣♣♣♣♣♣♣♣♣

**I SEMESTER**

**COURSE CODE: 7PCA15**

**PAPER – V – COMPUTER LAB – I - OPERATING SYSTEMS AND C – PROGRAMMING LAB**

(For University practical examination, two experiments should be given – one from each section (A & B))

 **Section A: OS**

**DOS :**

Basic DOS commands for file creation, display, removal, displaying, contents of directories, navigating directories, creating & removing directories, copying and renaming files.

 **UNIX :**

1. How could you list all the files in /bin beginning with the letters g, h, and p? (Using only one command)
2. How could you list all files whose names begin with the letter g, —have any three characters following the g, —and end with “tly.txt”. (Without the quotes)? (Using only one command)
3. Which of the following filenames are matched by: [A-G]\*ing.?txt ?
4. Gagging.test
5. Bing.xt
6. Aging.ntxt
7. Ing.ext
8. Going.txt

**WINDOWS:**

1. To demonstrate how to
2. Arranging icons on the desktop
3. Creating a new folder –Copy and Move the files and Folder
4. Work with Windows explorer
5. Finding files or folders in window operating system
6. To demonstrate how to
7. Adding and removing programs
8. Taskbar properties
9. Create shortcuts

**Section B:**

**C – PROGRAMMING**

 1. Write a program to find the biggest of Two numbers.

 2. Write a mark list program to find the total, average, result and class.

 3. Write a program to calculate standard deviation

 4. Write a program to find whether a given number is prime number or Not.

 5. Write a program to find whether a given number is perfect or not.

 6. Write a program to find whether a given number is Armstrong or not

 7. Write a program to find whether the given String is palindrome or not

 8. Write a program to find sum of the digits and reverse the digits.

 9. Write a program to generate the Fibonacci series

10.Write a program to Check whether the element is present or not in the given list

 using Array.

11.Write a program to sort numbers in ascending order.

12.Write a program to multiply two matrices and print the result in matrix form

13.Write a program to sort names in Alphabetical order

14.Write a program to count the vowels in the given string

15.Write a program to Prepare the electricity bill using structure

♣♣♣♣♣♣♣♣♣♣

**I SEMESTER**

**COURSE CODE: 7PCA16**

**PAPER–VI–COMPUTER LAB–II-MULTIMEDIA AND OFFICE AUTOMATION LAB**

(For University practical examination, two experiments should be given – one from each section (A & B))

**SECTION- A: MULTIMEDIA LAB**

**ANIMATION (FLASH)**

1. Procedure to create an animation to represent the growing moon
2. Procedure to create an animation to indicate a ball bouncing on steps.
3. Procedure to simulate movement of a cloud.
4. Procedure to draw the fan blades and to give proper animation.
5. Design A Visiting Card Containing Atleast One Graphic And Text Information

**COREL DRAW**

1. Basic file operations
2. Text formatting
3. Cloning and shaping objects
4. Image coloring and Editing

**PAGE MAKER**

1. Basic file operations
2. Printing thumbnail proofs
3. Formatting Paragraphs
4. Graphics and Drawing

**PHOTOSHOP**

1. Reverse the meaning of an image.
2. change a selfportrait into a character from any video
3. create two animal merges
4. Photomerge to combine multiple photographs into one panoramic image.

**SECTION – B: OFFICE AUTOMATION LAB**

# MS-WORD

1. Working with Files – Creating and opening documents, Saving documents, Renaming

 documents, working on multiple documents.

1. Working with Text – Formatting, Moving, copying and pasting text
2. Lists – Bulleted and numbered lists, Nested lists, Formatting lists
3. Usage of Header and footers, page numbers in documents
4. Table Manipulations.
5. Letter Preparation and Mail Merge.

###### **MS-EXCEL**

1. Modifying a Worksheet – Moving through cells, Adding worksheets, rows and

 columns, Resizing rows and columns, Selecting cells, Moving and copying cells,

 Freezing panes

1. Formatting cells – Formatting toolbar, Dates and times, Auto formatting.
2. Formula and Functions.
3. Sorting and Filling – Basic ascending and descending sorted, Complex sorts,

 Alternating text and numbers with Auto fill, Autofilling functions.

1. Graphics – Adding clip art, add an image from a file
2. Charts – Using chart Wizard, Copy a chart to Microsoft Word

**MS-POWER POINT**

1. Create a Presentation from a template.
2. Working with Slides – Insert a new slide, Applying a design template, Changing slide

 layouts, Reordering slides, Hide slides, Create a Custom slide show.

1. Including Video and Audio effects in presentation.
2. Color Schemes & Backgrounds
3. Adding clip art, Adding an image from a file
4. Save as a web page.

**MS-ACCESS**

1. Using Access database wizard, pages and projects.
2. Usage of Access database wizard – Opening – Cloising – Saving databases
3. Screen Layouts – Database window, Design view, Datasheet view
4. Creating Tables – Create a Table in design view, Primary key, Indexes, Field

 validation rules.

1. Datasheet Records – Adding, Editing, Deleting records, Adding and deleting columns

 & Resizing rows and columns, Finding data in a table & replacing, Print a datasheet.

♣♣♣♣♣♣♣♣♣♣

**II SEMESTER**

**COURSE CODE: 7PCA21**

**PAPER – VII - JAVA PROGRAMMING**

**Unit - I**

Java Evolution: Java History – Java Features – How Java Differs from c and c++ - Java and Internet – Java and World Wide Web – Web Browsers – Hardware and Software Requirements – Java Support Systems – Java Environment - Overview of Java Language: Introduction – Simple Java Program – More of Java – An Application with Two Classes – Java Program Structure – Java Tokens – Java Statements.Implementing a java program – Java virtual machine – Command line arguments – Programming Style – Constants, Variables and Data types: Introduction – Constants – Variables – Data Types – Declaration of Variables – Giving values to variables – Scope of variables – Symbolic Constants – Type casting – Getting values of Variables – Standard default values.

**Unit - II**

Operators and Expressions: – Arithmetic operators – Relational Operators – Logical Operators – Assignment Operators – Increment and decrement operators – Conditional operators – Bitwise Operators – Special operators – Arithmetic Expressions – Evaluation of Expressions – Precedence of Arithmetic Operators – Type conversion in Expressions- Operator Precedence and Associativity – Mathematical Functions – Decision making and branching - Decision making and Looping.

**Unit - III**

Classes, Objects and Methods: Defining a class – Fields Declaration – Methods Declaration – Creating Objects – Accessing Class Members – Constructors – Methods Overloading – Static members – Nesting of methods – Inheritance: Extending a class – Overloading Methods – Final Variables and methods – Final Classes – Finalizer Methods

**Unit - IV**

Abstract methods and classes – Methods with Varargs – Visibility Control- Arrays, Strings and Vectors: Introduction – One Dimensional Arrays – Creating an Array – Two – dimensional Arrays – Strings – Vectors – Wrapper Classes – Enumerated Types – Annotations – Interfaces: Multiple Inheritance – Defining Interfaces – Extending Interfaces – Implementing Interfaces – Accessing Interface variables.

**Unit - V**

Applet Programming : How applets differ from Applications – Preparing to write applets – Building applet code – Applet life cycle – Creating an Executable applet – designing a web Page – Applet Tag – Adding Applet to Html File – Running the applet – More about Applet Tag – Passing parameters to applets – Aligning the display – More about Html tags - Displaying Numerical values – Getting input from the user – Graphics Programming: The Graphics Class – Lines and Rectangles – Circles and Ellipses – Drawing Arcs – Drawing Polygons – Line Graphs – Using Control loops in applets – Drawing bar charts.

 **Text Book:**

1. “Programming with Java” – E.Balagurusamy, Tata McGraw Hill Publishing Company Ltd, Third Edition.

 **Book for Reference:**

1. Java 2 Complete Reference”, Herbert Schildt,Tata Mc Graw HILL, 4th edition

♣♣♣♣♣♣♣♣♣♣

**II SEMESTER**

**COURSE CODE: 7PCA22**

**PAPER – VIII - WEB TECHNOLOGY**

**Unit - I**

 Introduction to HTML: Markup Languages – editing HTML – Common tags – header – text styling – linking images – Formatting text – Special characters, horizontal rules and line breaks – unordered list – Nested and ordered list – Tables and formatting – Forms – linking frames.

**Unit - II**

 Java Script: Introduction – Control structures – if structure – while structure – assignment operators – increment and decrement operators – for structure – switch structure – do/while structure – break and continue statement – logical operators Java Script Functions: Programmer defined functions – Function definitions – Duration of identifiers – Scope rules – Recursion – recursion vs. iteration – Global functions

**Unit - III**

 Java Script Arrays: Arrays – Declaring and allocating arrays – References and reference parameters – Passing arrays to functions – Sorting arrays – Searching arrays – Multiple –subscripted arrays Java Script Objects: Math object – String object – Date object – Boolean and Number Object. Java Script Events: on click, on load, onmousemove, onmouseover, on mouse out, onfocus, on blur, on submit, on reset.

**Unit - IV**

 Introduction to .NET, NET Framework features & architecture, CLR,IDE of VB.NET-Menu bar,Toolbar, Solution Explorer, Toolbox, Properties Window, Form Designer, Output Window, Object Browser The VB.NET Language- Variables -Declaring variables, Data Type of variables, Scope & lifetime of a variable, Constants, Arrays, types of array, control array, Collections, Subroutines, Functions, Passing variable, Number of Argument, Optional Argument, Returning value from function. Conditional statement, Loop statement. Msgbox & Inputbox.

**Unit - V**

 Working with Forms: Loading, showing and hiding forms.GUI Programming with Windows Form: Textbox, Label, Button, Listbox, Combobox, Checkbox, PictureBox, Radio Button, Panel, Scroll bar, Timer, List View, Tree View, Toolbar, Status Bar. Their Properties, Methods and Events. OpenFile Dilog,SaveFileDialog, FontDialog, ColorDialog, Print Dialog.Designing menus : Context Menu, access &shortcut keys. Database programming with ADO.NET - Overview of ADO, from ADO to ADO.NET, Creating Connection, Command, Data Adapter and Data Set.

**Text Books:**

1. “Internet and world wide web – How to program”, H.M.Deitel, P.J.Deital, T.R.Nieto,

Pearson Education Asia – Addison Wesley Longman Pte Ltd. (for Unit I, II,III)

2. VB.NET PROGRAMMING BLACK BOOK By Steven Holzner- Dreamtech Publications 3. MASTERING VB.NET By Evangelos Petroutsos - Bpb Publications

♣♣♣♣♣♣♣♣♣♣

**II SEMESTER**

**COURSE CODE: 7PCA23**

**PAPER – IX - RDBMS**

**Unit - I**

 Database Concepts: A Relational approach: Database – Relationships – DBMS – Relational Data Model – Integrity Rules – Theoretical Relational Languages. Database Design: Data Modeling and Normalization: Data Modeling – Dependency – Database Design – Normal forms – Dependency Diagrams – De -normalization – Another Example of Normalization.

 **Unit - II**

 Oracle9i: Overview: Personal Databases – Client/Server Databases – Oracle9i an introduction – SQL \*Plus Environment – SQL – Logging into SQL \*Plus - SQL \*Plus Commands – Errors & Help – Alternate Text Editors - SQL \*Plus Worksheet - iSQL \*Plus. Oracle Tables: DDL: Naming Rules and conventions – Data Types – Constraints – Creating Oracle Table – Displaying Table Information – Altering an Existing Table – Dropping, Renaming, Truncating Table – Table Types – Spooling – Error codes.

**Unit - III**

 Working with Table: Data Management and Retrieval: DML – adding a new Row/Record – Customized Prompts – Updating and Deleting an Existing Rows/Records – retrieving Data from Table – Arithmetic Operations – restricting Data with WHERE clause – Sorting – Revisiting Substitution Variables – DEFINE command – CASE structure. Functions and Grouping: Built-in functions –Grouping Data. Multiple Tables: Joins and Set operations: Join – Set operations.

**Unit - IV**

 PL/SQL: A Programming Language: History – Fundamentals – Block Structure – Comments – Data Types – Other Data Types – Declaration – Assignment operation – Bind variables – Substitution Variables – Printing – Arithmetic Operators. Control Structures and Embedded SQL: Control Structures – Nested Blocks – SQ L in PL/SQL – Data Manipulation – Transaction Control statements. PL/SQL Cursors and Exceptions: Cursors – Implicit & Explicit Cursors and Attributes – Cursor FOR loops – SELECT…FOR UPDATE – WHERE CURRENT OF clause – Cursor with Parameters – Cursor Variables – Exceptions – Types of Exceptions.

**Unit - IV**

 PL/SQL Composite Data Types: Records – Tables – arrays. Named Blocks: Procedures – Functions – Packages –Triggers –Data Dictionary Views.

**Text Book:**

1. Database Systems using Oracle, Nilesh Shah, 2nd edition, PHI.

**Books for Reference:**

1. Database Management Systems, Majumdar & Bhattacharya, 2007, TMH.

2. Database Management Systems, Gerald V. Post, 3rd edition, TMH.

♣♣♣♣♣♣♣♣♣♣

**II SEMESTER**

**COURSE CODE: 7PCA24**

**PAPER – X - E-COMMERCE**

**Unit I**

Electronic Commerce Framework – E-Commerce and Media convergence – The anatomy of E-Commerce applications – Electronic commerce consumer applications – Electronic commerce organization applications. Components of the I-Way – The Internet terminology – History of the Internet – Internet governance: The Internet society – Internet applications.

**Unit II**

Architectural framework of electronic commerce – WWW as architecture – Web background Hypertext publishing – Technology behind the web – Security and the Web – Types of Electronic Payment systems – Digital Token Based electronic payment systems – Smart cards and electronic payment systems – Credit card based electronic payment systems – Risks of Electronic payment systems – Designing Electronic payment systems.

**Unit III**

Electronic data Interchange – EDI applications in business – EDI: Legal, security and privacy issues – EDI and Electronic commerce – Standardization and EDI – EDI software implementation – EDI envelope and message transport – Value Added Networks (VANs) – Internet Based EDI – Internal information systems.

**Unit IV**

The new age of information based marketing – Advertising – Charting the On-line Marketing process – Market Research – Electronic Commerce catalogs or directories – Information filtering – consumer – Data interface: Emerging tools.

**Unit V**

Computer based education and training – Technological components of education on demand – Digital copyrights and electronic commerce. History of software agents – Characteristics and properties of agents.

**Text Book:**

1. Ravi Kalakota, Andrew Whinston “Frontiers of Electronic Commerce”.

**Books for Reference:**

1. Jeffrey F. Rayport & Bernard J. Jaworshi, “E-Commerce”, TMH.
2. Dhruv NATH, The nuts and bolts of E-Commerce, TMH.

♣♣♣♣♣♣♣♣♣♣

**II SEMESTER**

**COURSE CODE: 7CPA25**

**PAPER – XI – COMPUTER LAB – III - JAVA AND RDBMS LAB**

(For University practical examination, two experiments should be given – one from each section (A & B))

**SECTION A - JAVA**

1. Simple programs using For, While, Ternary and Switch
2. String handling using String and String Buffer.
3. Inheritance with Database
4. Polymorphism with Database
5. Interfaces and packages with Data base
6. Text files (Copy, Display, counting characters, words and lines)
7. Simple Programs Applet and AWT
8. Exercises using Predefined and User Defined Exception
9. Graphics Programs for drawing Lines, Rectangle, Oval, String using Applet.

**SECTION B - ORACLE**

1. Creating, modifying and dropping Tables.
2. Creating tables with referential and check constraints.
3. Inserting, modifying, deleting rows.
4. Dropping, disabling /enabling constraints
5. Retrieving rows with operators in where Clause.
6. Retrieving rows with Character functions.
7. Retrieving rows with Number and Date functions.
8. Retrieving rows with Group functions and HAVING.
9. Joining Tables. (Inner and Outer)
10. Retrieving rows with Sub Queries.
11. Simple PL/SQL Programs.
12. PL/SQL programs with control structures.
13. PL/SQL programs with Cursors.
14. PL/SQL programs with Exception Handling.

♣♣♣♣♣♣♣♣♣♣

**II SEMESTER**

**COURSE CODE: 7PCA26**

**PAPER – XII – COMPUTER LAB – IV - WEB TECHNOLOGY LAB**

(For University practical examination, two experiments should be given – one from each section (A & B))

**SECTION –A :HTML & JAVA SCRIPT**

 1. Write a HTML code that displays various formatting tags.

 2. Write a HTML code to create ordered list & unordered list.

 3. Write a HTML code to create unordered list.

 4. Write a HTML code to create table having 5 rows and 5 columns.

 5. Write a HTML code to create admission form.

 6. Write a HTML code to create hyperlink for multiple pages.

 7. Write a HTML code to create hyperlink to an image.

 8. Write a Program in JavaScript to implement for loop.

 9. Write a Program in JavaScript to implement while loop.

10.Write a Program in JavaScript to show the usage of if-else statement.

**SECTION –B: VB.NET**

11.Write a Program to create the Calculator (Simple)

12.Write a Program to create the number puzzle game using command button.

13.Write a Program to create the Personal Information System Using Ms.Access with

 Ado.Net

14.Write a Program to create the Railways Reservation System Using Ms.Access with

 Ado.Net

15.Write a Program to create the Library Information System Using Ms.Access with

 Ado.Net

 ♣♣♣♣♣♣♣♣♣♣