SHIVAJI UNIVERSITY, KOLHAPUR.

Faculty of Inter Disciplinary Studies

Accredited By NAAC with 'A' Grade

Syllabus For

Post Graduate Diploma In Computer Application (PGDCA).

(To be implemented from June 2020 onwards.)

(Subject to the modifications that will be made from time to time)

POST GRADUATE DIPLOMA IN COMPUTER APPLICATIONS(PGDCA)

1. TITLE : PGDCA
Syllabus (Semester Pattern)
Under Faculty of computer
science

2. YEAR OF IMPLEMENTATION : Syllabus will be implemented from 2020-2021

3. DURATION : PGDCA(One Year)

4. PATTERN OF EXAMINATION - Semester Pattern

- Theory Examination – At the end of semester as per Shivaji University Rules
- Practical Examination –

i) In the 2th semester of PGDCA. there will be internal assessment of practical record,related report submission and project reports.

5. MEDIUM OF INSTRUCTION : English / Marathi

6. STRUCTURE OF COURSE : PGDCA

Two Semester Per Year(part time)
Five papers Papers per Semester
One practical exam per year for five papers
One Project / Industry Visit/ Study Tour / Survey

7. SCHEME OF EXAMINATION – A) **THEORY** –

- The theory examination shall be at the end of the each semester.
- All the theory papers shall carry 50 (40+10) marks.
- Evaluation of the performance of the students in theory shall be on the basis of semester examination as mentioned above.

- Question paper will be set in the view of entire syllabus preferably covering each unit of the syllabus.

- Nature of question paper for Theory examination (excluding Business Communication paper)–

i. There will be seven questions carrying equal marks.

ii. Students will have to solve any five questions.

Q. No. 1 : Short answer type question withinternal choice (Two out of Three)
Q. No. 2 to Q. No. 6 : Long answer typequestions
Q. No. 7 : Short Notes with internal choice (Twoout of Three)

B) PRACTICAL

Evaluation of the performance of the students in practical shall be on the basis of semester examination (Internal assessment at the end of II Semester and external examination as mentioned separately in each paper.

STANDARD OF PASSING –

As per the guidelines and rules of PGDCA (Attached separately – Annexure I)

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8. STRUCTURE OF THE COURSE

PGDCA Semester – I

Paper No.	Name of the Paper	Total Credit	Marks		
			External	Internal	Total Marks
1. 1	English For Business Communications	03	40	10	50
1. 2	Algorithm and C++ Programming,	03	40	10	50
1. 3	Visual Programming Using C# Part-I	03	40	10	50
1. 4	Python Programming	03	40	10	50
1. 5	RDBMS with Oracle Part-I	03	40	10	50
	Total Credit	15	200	50	250

PGDCA Semester – II

Paper No.	Name of the Paper	Total Credit	Marks		
			External	Internal	Total Marks
2. 1	Web Designing with PHP and MySQL	03	40	10	50
2. 2	Object Oriented Programming using 'C++'	03	40	10	50
2. 3	Visual C# Programming Part-II	03	40	10	50
2. 4	Java Programming(Core Java)	03	40	10	50
2. 5	RDBMS with Oracle Part-II	03	40	10	50
	Total Credit	15	200	50	250

SCHEME OF TEACHING PRACTICALS:

PGDCA Semester – I

Paper No.	Name of the Practical Paper	Total Credit	Marks		
			External	Internal	Total Marks
1. 1	English For Business Communications	00	20	10	30
1. 2	Algorithm and C++ Programming,	04	20	10	30
1. 3	Visual Programming Using C# Part-I	04	20	10	30
1. 4	Python Programming	04	20	10	30
1. 5	RDBMS with Oracle Part-I	03	20	10	30
	Total Credit	15	100	50	150

PGDCA Semester – II

Paper No.	Name of the Practical Paper	Total Credit	Marks		
			External	Internal	Total Marks
2. 1	Web Designing with PHP and MySQL	03	20	10	30
2. 2	Object Oriented Programming using 'C++'	02	20	10	30
2. 3	Visual C# Programming Part-II	03	20	10	30
2. 4	Java Programming(Core Java)	03	20	10	30
2. 5	RDBMS with Oracle Part-II	02	20	10	30
2. 6	Project Work	02	70	30	100
	Total Credit	15	170	80	250

Eligibility for Admission : Graduate of any discipline (under 10+2+3) pattern of any recognized University.

Elligibility for Faculty : 1) Post graduate with NET / SET

Eligibility for Lab Assistant : Graduation with related field

Staffing Pattern

Teaching : In the 1st year of B. Voc. – One Full Time
one C. H. B. for Business Communication
Lab. Assistant : For 1st Year of B. Voc. – 1 Part Time
For 2nd and 3rd Year (Inclusive of 1st Year) of B. Voc. – 1 Full Time

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Semester – I

Paper- 1.1:English For Business Communication

Total Workload: 06 lectures per week of 60 mins.

Distribution of Workload:

Theory: 04 lectures per week
Practical: 02 lectures per week per batch of 20 students

Units Prescribed for Theory: 40 Marks.

Unit 1: Use of English in Business Environment

Topics:

Business Vocabulary: Vocabulary for banking, marketing and for maintaining public relations
What is a sentence?
Elements of a sentence
Types of sentence: Simple, compound, complex

Unit 2:Writing a Letter of Application and CV/ Resume

Topics:

Structure of a letter of application for various posts
CV/ Resume and its essentials

Unit 3:Presenting Information/Data

Topics:

Presenting information/data using graphics like tables, pie charts, tree diagrams, bar diagrams, graphs, flow charts

Unit 4:Interview Technique

Topics:

Dos and don'ts of an interview

Preparing for an interview
Presenting documents
Language used in an interview

Practical: **Based on the theory units** 10 Marks.

Reference Books:

Sethi,Anjanee&BhavanaAdhikari.*Business Communication*. New Delhi: Tata McGraw Hill
Tickoo, Champa& Jaya Sasikumar.*Writing with a Purpose*. New York: OUP, 1979.
Sonie, Subhash C. *Mastering the Art of Effective Business Communication*. New Delhi: Student Aid Publication, 2008.
Herekar, Praksh. *Business Communication.* Pune: Mehta Publications, 2007.
Herekar, Praksh. *Principals of Business Communication.* Pune: Mehta Publications, 2003.
Rai, Urmila& S. M. Rai.*BusinessCommunication.*Himalaya Publishing House, 2007.
Pradhan, N. S. *Business Communication.* Mumbai: Himalaya Publishing House, 2005.
Pardeshi, P. C. *Managerial Communication.* Pune: NiraliPrakashan, 2008.

Paper - 1.2: Algorithm and C++ Programming

UNIT-I Problem solving -(8)

Algorithm- concept, characteristics, steps to write algorithm, examples.

Flow chart- Concept, symbols used for flow charting, examples

UNIT-II Basics of 'C++' programming-(12)

Importance of 'C and C++' language, Basic structure of 'C++' program, compiling and running 'C++' program, Character set, key words and identifiers, constants, variables, data types, declaration of variables and assign values, symbolic constant, operators and expressions. input-output operations: Reading and writing characters- getchar(), putchar() Formatted input output- scanf(), printf()

UNIT-III Control statements-(10)

Branching statements- if, if---Else, nested if--- else, if ladder, switch--- case statement, Looping statements – while, do while, for, Breaking control statements- break, continue and goto statement.

UNIT-IV Array and strings(10)

Definition, One and two dimensional array, declaration and initializing one and two dimensional array, character strings handling, Reading and writing strings- gets(), puts(), String handling functions strcpy(), strlen(), strcat(), strcmp()

Reference Books-

1 Object Oriented Programming in C++ - Rajesh K. Shukla
2. Object Oriented Programming with C++ - Poonam Ponde
3. Object Oriented Programming with C++ - E Balagurusamy
4. Mastering C++ - K.R.Venugopal
5. C++ Programming - D. Ravichandran
6. A Tour of C++ (2nd Edition) - Bjarne Stroustrup.
7. The C++ Programming Language (4th Edition) - Bjarne Stroustrup.

List Of Practical Experiments:-

1. Writing the algorithms and developing flowcharts
2. Simple programs (Using scanf(), printf(), Use of various format specifiers and non graphic characters for formatted outputs).
3. Programs demonstrating conditional branching (Using if structures, switch)
4. Programs on loops (while, do while, for)
5. Programs based on breaking control statements and unconditional branching.(Use of break, continue and goto)
6. Programs based on one dimensional (Searching and sorting)
7. Programs on string handling (Use of gets(), puts(), strlen(), strcpv(), strcat(), strcmp())
8. Demonstration of declaration, initializing and use of pointers.
9. Programs on Pointer to array
10. Programs to demonstrate use of Two dimensional arrays (Matrix handling).

Paper- 1.3: Visual Programming Using C# Part-I

UNIT-I .NET Framework-(10)

Event Driven Programming, .NET as better Programming Platform, Introduction to framework, .NET Architecture, CLR, CTS, Just-In-Time Compiler, MSIL, .NET Framework class library.

UNIT-II Introduction to C#.NET- (10)

Data types, Operators-arithmetic, relational, logical, bitwise, Branching statements-if – Then Statement(s), Select case Statement, Looping statements-For–Next, While---End While, Do-----loop while, Do------loop until, Unconditional statement: Exit statement, and continue statement.

UNIT-III ActiveX controls-(10)

Label Control, TextBox Control, Button Control, ComboBox Control, ListBox Control, CheckBox Control, RadioButton, GroupBox Control, PictureBox, Timer Controls, Date Time Picker, Mouse and key board events.

UNIT-IV Arrays and Strings -(10)

Arrays- Concept, Dim, Redim, Preserve, types- one dimensional, two dimensional, jagged array, control array, collections, String handling functions.

Reference Books:

1. . C# 4.0 The Complete Reference Schildt Mc Graw Hill
2. Inside C# - By Tom Archer, Andrew Whitechapel (Microsoft Pub)
3. Programming in C#- E Balagurusamy
4. C# 2012 Programming Covers.Net 4.5 Black Book
5. Mastering C#.Net 4.0 Web Tech Solution Inc.
6. C# Step by Step – John Sharp

List Of Practical Experiments:-

1. Basic study of Visual Studio.NET IDE.
2. Compiling Visual C#.NET Program.
3. Control Structures: Conditional, Branching and Looping.
4. Based on simple console applications.
5. Write console application to accept number and check given number is prime or not.
6. Write console application to accept number and check given number is Armstrong or not.
7. Creating Forms using various Basic controls.
8. Simple console programs on Arrays- one dimensional, two dimensional and jagged array.
9. Simple application using string handling functions.
10. Create login form

Paper- 1.4: Python Programming

UNIT-I IntroductionTo Python **(8)**

History, Features , Setting up path ,Working with Python , Basic Syntax , Variable and Data Types .

UNIT-II Input/output and String Manipulation & Control statements- **(10)**

Input-Output - Printing on screen , Reading data from keyboard

String Manipulation - Accessing Strings , Basic Operations, String slices , Function and Methods

Branching statements- if, if---Else, nested if--- else, if ladder, switch--- case statement, Looping statements – while, do while, for, Breaking control statements- break, continue and **pass** statement.

UNIT-IV List, Touple and Dictionary **(10)**

Lists - Introduction , Accessing list , Operations , Working with lists , Function and Method

Tuple - Introduction , Accessing tuples , Operations , Working , Functions and Method

Dictionaries - Introduction , Accessing values in dictionaries , Working with dictionaries , Properties , Functions

UNIT-IV Modules and Programming **(10)**

Modules - Importing module , Math module , Random module , Packages , Composition

Object Oriented Programming -Concepts , Class and object , Attributes , Inheritance , Overloading , Overriding , Data hiding.

Reference Books-

1. Practical Programming: An introduction to Computer Science Using Python, second edition, Paul Gries, Jennifer Campbell, Jason Montojo, The Pragmatic Bookshelf.
2. Python for Informatics: Exploring Information, Charles Severance
3. Learning Python, Fourth Edition, Mark Lutz, O'Reilly publication
4. Introduction to Python for Computational Science and Engineering (A beginner's guide), Hans Fangohr
5. John V Guttag. "Introduction to Computation and Programming Using Python", Prentice Hall of India
6. R. Nageswara Rao, "Core Python Programming", Dreamtech

List Of Practical Experiments:-

1. Python program to add two numbers
2. Python program for factorial of a number
3. Python program for simple interest
4. Python program to check if a string is palindrome or not
5. Python program to reverse words in a given string in python
6. Python program to find out ways to remove i'th character from string in python
7. Python program to check if a substring is present in a given string
8. Python program to interchange first and last elements in a list
9. Python program to swap two elements in a list
10. Python program to find out different ways to clear a list in Python

Paper- 1.5: RDBMS with Oracle Part- I

UNIT-I Introduction to RDBMS **(10)**

Data, Database, Database Management System, RDBMS, Concept of Data Models- Network, Hierarchical, Relational, Concept of - relation, attribute, domain, tuple, entities, DBA and Responsibilities of DBA.

UNIT-II Structured Query Language (SQL)- **(10)**

Features of SQL, data types- fixed length, variable length, examples, Types of SQL commands- DDL, DML, DCL, TCL., Data Constraints : Primary Key, Foreign key, Unique, Null, Check, Default.

UNIT-III Operators and functions- **(10)**

Select statement with where, group by, order by clause, SQL Operators: Logical, Relational, Special operators - In, Between, Like, Dual table concept, SQL functions: Arithmetic, Conversion, Date and time, Aggregate Functions.

UNIT-IV- Queries and Joins- **(10)**

Virtual table creation (View), Indexes, Sequence, Sub Queries and Join - Sub queries and Nesting Sub queries, Join: Equi join, Simple, Two table Join, Outer join, Self join

Reference Books-

1. Database System Concepts- Korth & Silberschartz.
2. SQL – PL/SQL By Ivan Bayross BPB Publications
3. Structure Query Language- By Osborne.
4. Oracle SQL and PL/SQL – John Adolph Pallinski
5. Complete Reference SQL- James R Graff
6. Oracle in Natshell- Rich Greenwald

List Of Practical Experiments:

1. Demonstration and Use of simple SQL commands.
2. Create table and add record using SQL.
3. Alter Table for given Clauses
4. Use of different Function.
5. Use various operator, clause and constraints while creating table and manipulating data in the table.
6. Create emp table and dept table with appropriate field and apply following integrity constraint on appropriate fields.
   a. Primary key.
   b. Foreign key.
   c. not null
   d. default
   e. check
7. Create student table with appropriate field and do following things.
   a. Insert 10 appropriate records.
   b. Update record
   c. Delete records.
   d. Alter table
   e. Drop table.
8. Use any tables and do select operations using Operators, clauses and aggregate function.
9. Use any table and assign index , use sequence and fire sub queires.
10. Use any two tables and use joins on it.

Semester – II
Paper 2.1: Web Designing with PHP and MySQL

Unit-1:Fundamental of PHP **(10)**

Concept of PHP, Constants, variables declaration, Comments, Data types, Operators, Command line arguments

Unit-2: Branching and Looping statements **(10)**

Conditional statements, If-else, Switch, Ternary operators, looping statements- For loop, While loop, Do-while loop

Unit 3: Arrays in PHP **(8)**

Creating arrays, Inserting elements in arrays, Retrieving elements from array, Displaying arrays, Sorting array elements

Unit-4:Developing Applications in PHP using MySQL **(12)**

Introduction to Databases, Creating database, Creating tables, Inserting values in table, Displaying, changing, searching, deleting records from the table, Developing applications in PHP- Arithmetic operators through GUI, Web calculator, SQL queries- insert, select, delete, update, where, order by.

Reference Books:

1. PHP and MySQL By Andrea Tarr (Dreamtech Publications)
2. PHP 5.1 for Beginners – By Ivan Bayross and Sharanam Shah(Shroff Publishers & Distributors)
3. Beginning PHP 6, Apache, MySQL Web Development- By Timothy Boronczyk, Elizabeth Naramore, Jason Gerner, Yann Le Scouarnec, Zeremy Stolz, Michael K. Glass

List Of Practical Experiments:

1. Create a web page evenodd.php into root directory of your local web server. Here, write a script for finding out whether it is an odd number or even number and display on the screen.
2. Create a web page for displaying message based on current time: Good Morning, Good Afternoon, Good Evening.
3. Accept user name and password from user and navigate to home page with suitable message.
4. Write a PHP Script to declare 2 variables with specific numeric value of your choice and Perform the following operations: Addition, Subtraction, Multiplication and Division. Also display the Result on the screen.
5. Write a PHP Script to declare 2 variables with specific numeric value of your choice and find out the greater number between the two number
6. Simple programs using Loops.
7. Write PHP Script to Check Given Number is Even Or Odd
8. Write PHP Script to Check Given Number is Prime Or Not
9. Write PHP Script to Check Given Number is Armstrong Or Not
10. Write PHP Script to Check Given Number is Perfect Or Not

Paper- 2.2: Object Oriented Programming using 'C++'

UNIT-I C++ Class **(10)**

Difference between struct and class, class specification (class declaration with access modifiers/ visibility labels – private, public, protected members, member function definition inside as well as outside, object definition), Array (array as class member, array of objects), this pointer, static members (data members and member accessing function) and memory allocation of object, scope of a variable (local, local to class, global)

UNIT-II Constructor and Destructor and Operator Overloading- **(10)**

Friend Function: Characteristics, friend function and friend class Constructor: Definition, Characteristics, features, Types (Default, parameterized) Destructor: Definition, Dynamic constructor and need of destructor, exit(0) vs return(0) in main() with destructor Operator overloading: Concept, Rules, definition of operator function (member function, friend function) Overloading unary and binary operators..

UNIT-III Inheritance- **(10)**

Concept (reusability), Types(single, multilevel, multiple, hierarchical, hybrid), defining derived class, introducing protected members, visibility of derived members, Diamond problem with hybrid inheritance(virtual inheritance) and virtual base class

UNIT-IV Polymorphism: **(10)**

Polymorphism: Definition, types (Compile time/early binding/static binding, Run time/Late Binding/ dynamic binding), Pointer to object, Virtual and pure-virtual functions (abstract class), rules for virtual functions, virtual destructor.

Reference Books:

1. Object Oriented Programming in C++ - Rajesh K. Shukla
2. Object Oriented Programming with C++ - Poonam Ponde
3. Object Oriented Programming with C++ - E Balagurusamy
4. Mastering C++ - K.R.Venugopal
5. C++ Programming - D. Ravichandran
6. A Tour of C++ (2nd Edition) - Bjarne Stroustrup.
7. The C++ Programming Language (4th Edition) - Bjarne Stroustrup.

List Of Practical Experiments:

1. Function Default Argument: i) To calculate perimeter of square(4*r), rectangle(2*l+2*b), triangle (a+b+c) ii) To calculate area of square(r*r), rectangle(l*b), trapezium(1/2*h*(s1+s2)) Keeping other argument to default value zero.
2. Function Overloading: i) To calculate perimeter of square(4*r), rectangle(2*l+2*b),

triangle (a+b+c) ii) To calculate area of square(r*r), rectangle(l*b), trapezium(1/2*h*(s1+s2))

3. Constructor And Destructor: Demonstrate working of constructor (default, parameterised, copy) and destructor to allocate and de-allocate memory to or from an array of integers using DMA operators new and delete.

4. Static Members: Display counter which counts numbers of objects of class, counter is incremented in constructor and decremented in destructor.

5. Friend Function: Create two classes Celsius and Fahrenheit and define friend functions to add and to compare two temperatures.

6. Operator Overloading: To overload addition, multiplication, unary minus operator on class Integer

7. Operator Overloading: To overload TypeCast operator to convert temperature in Degree Celsius To Degree Fahrenheit and Degree Fahrenheit To Degree Celsius using classes Celsius and Fahrenheit. F=9/5*c+32

8. Pure Virtual Function And Inheritance: To specify base class Shape with pure virtual methods

9. Input(), Perimeter() and Area(). Inherit three classes Square, Rectangle and Triangle from class

10. Shape with appropriate data members and override methods Input(), Perimeter() and Area().

Paper 2.3: Visual Programming Using C# Part-II

UNIT – I Exception Handling **(10)**

Exception Handling, Importance of Exception Handling, Exception Handling in C#.NET, User defined exception.

UNIT-II Windows Applications in C#.NET **(10)**

Windows Forms, Properties: name, IsMDIcontainer, size, window state, location, autosize, Adding controls to a form, Setting properties at run time, Working with input box and message box, Creating MDI form

UNIT-III Database connectivity in C# .NET **(10)**

Database: Connections, command, Data adapters, and datasets, name spaces, Connection to database using MS-Access, SQL Server, Data binding with controls like Text Boxes, List Boxes, Data grid etc., Data form wizard, Data validation

UNIT-IV Using Crystal Report **(10)**

Connection to Database, Table, Queries, Create and Modify Report, Formatting Fields and inserting Header, Footer, Details, Working with formula fields, Parameter fields, Group, Working with Multiple Tables

Reference Books:

1. C# 4.0 The Complete Reference Schildt Mc Graw Hill
2. Inside C# - By Tom Archer, Andrew Whitechapel (Microsoft Pub)
3. Programming in C#- E Balagurusamy
4. Mastering Crystal Report - BPB Publication
5. Crystal Report – The Complete Reference: - Tata McGraw Hill

List Of Practical Experiments:

1. Programs on Exception handling
2. Windows applications using Input and Message box
3. Creation of MDI form application
4. Simple Applications using database
5. Demonstrate use of data grid.
6. Demonstrate Use of Login Form Using Database
7. Insert, Update, Delete records from database using Forms.
8. Program to demonstrate ADO.Net Connected Architecture
9. Program to demonstrate ADO.Net DisConnected Architecture
10. Crystal Report creation on Database

Paper- 2. 4 : Java Programming (Core Java)

UNIT-I Introduction to java **(10)**

Introduction to java • History of java • Features of Java • Comparison between C++ and java • Java Virtual Machine(JVM) • Tokens • Java Keywords • Data Types-integer(byte,short,int ,long),floating point(float, double),char, boolean • Operators-arithemetic,relational,logical,unary,ternary,bitwise • Branching and looping statement • Typecasting-Implicit and Explicit • Command line arguments • Writing simple java program • Compiling and executing Java program

UNIT-II Object Oriented Programming using Java **(10)**

• Introduction- Class, Object and method • staticKeywords,Constructors,and destructor • super and thisKey Word • Encapsulation and Abstraction • Inheritance-Definition and its typessingle,multilevel,hierarchical • Polymorphism-Definition and concepts of overloading and overriding • Difference between Overloading and overriding • Abstract Classes and Interfaces • String- String and String Buffer class • Defining package • System Packages –java, lang, awt, javax, swing, net, io, util.
user defined packages-creating and accessing the package

UNIT – III Multithreading, Exception Handling **(10)**

• Creating threads, extending a thread class- declaring the class, run() method • Stopping and blocking threads • Life cycle of thread • Using thread method • Thread priority • Definition of exception • Syntax of exception handling code • Multiple catch statement • Using finally statement

UNIT -IV Applets and AWT **(10)**

• Applets Definition • Building applet code • Applet life cycle • Adding applet code to HTML file • Introduction to Abstract Window Toolkit (AWT)

Reference Books-

1. Programming with JAVA, A Primer by E Balaguruswamy
2. Herbert Schildt, Java2: The Complete Reference, Tata McGraw-Hill
3. Java Programming- Rajendra Salokhe (Aruta Pub)
4. The Java Tutorials: http://docs.oracle.com/javase/tutorial/)
5. The Java Tutorials of Sun Microsystems In

List Of Practical Experiments:

1. Java programs based on branching and looping statements.
2. Java programs based Type Casting
3. Java programs based on command line arguments
4. Java programs based on constructors
5. Java programs based on inheritance
6. Java programs based on method overloading
7. Java programs based on method overriding.
8. Java programs based on interfaces
9. Java programs based on packages
10. Java programs based on multithreading

Paper- 2.5: RDBMS with Oracle Part-II

Unit-I Introduction To PL-SQL- **(10)**

Features of PL-SQL, Block concept and types, structure of PL-SQL block, Writing and executing PL-SQL block, Comparison between SQL & PL-SQL, Data types in PL-SQL, IF-ELSE Construct, Loop Statement- Simple loop , For Loop, While Loop.

Unit-II Control structures- **(10)**

Branching statements- if---then ---end if, if --then--else--end if, if-- then elsif--end if, switch case

Iterative statements- simple loop, while loop, for loop

Unconditional branching statement- goto, continue, break statements.

Unit-III Working with Cursors- **(10)**

Cursor- concept, types- implicit, explicit, steps to create explicit cursors, Attributes of implicit and explicit cursors.

Unit-IV Triggers- **(10)**

Triggers- Concept, syntax, types- row-level, statement-level

Reference Books-

1. Structured Query Language - Osborne.
2. Structured Query Language - Martin Gruber.
3. SQL,PL/SQL Programming language of ORACLE- Ivan Bayross
4. Structure Query Language- By Osborne.
5. Oracle SQL and PL/SQL – John Adolph Pallinski
6. Complete Reference S QL- James R Graff
7. Oracle in Natshell- Rich Greenwald

List Of Practical Experiments:

1. Use any tables and do sub query and Join operations.
2. Simple programs of PL/SQL using IF structures
3. Simple programs of PL/SQL using loop structures
4. Illustrative Examples on cursors.
5. Illustrative Examples on Triggers
6. Write PLSQL Program to Check Given Number is Even Or Odd
7. Write PLSQL Program to Check Given Number is Prime Or Not
8. Write PLSQL Program to Check Given Number is Armstrong Or Not
9. Write PLSQL Program to Check Given Number is Perfect Or Not
10. Write PLSQL Program to Calculate Sum of Digits of given number.

PG-DCA Semester - II
Paper- 2.7: Project Work

Project Work :-

The project report can be prepared by group of 2 students. The project report will be assessed by internal guide for 50 marks and there will be Viva for 50 marks conducted by two external panel examiners appointed by University

Project Marks are Distributed as Follows-

Project Documentation	:-	30 Marks
Online Presentation	:-	20 Marks
Project Based Viva	:-	30 Marks
Industrial Visit Report	:-	20 Marks
Total Marks	**:-**	**100 Marks**

Nature of Examination –

University theory examination shall be 2 hours duration for 40 marks paper. The nature of theory question paper will be as follows.

Instructions: 1. Solve any Five questions.

2. Figures to right indicate full marks.

Q. 1 Attempt any two from the following. 8 Marks.

a) Short answer type question.

b) Short answer type question.

c) Short answer type question.

Q. 2 Long answer type question. 8 Marks.

Q. 3 Long answer type question. 8 Marks.

Q. 4 Long answer type question. 8 Marks.

Q. 5 Long answer type question. 8 Marks.

Q. 6 Long answer type question. 8 Marks.

Q. 7 Attempt any two from the following. 8 Marks.

a) Short answer type question.

b) Short answer type question.

c) Short answer type question.

Internal Marks

For the internal marks of theory paper conduct 10 marks objective type test with respective paper individually by subject teacher at the end of each semester

Annexure- 1

Standard of Passing :-

To pass the examination in Post Graduate Diploma in Computer Applications, a candidate must obtain a minimum of 35% of marks in each head of passing and also in Aggregate.

Letter Grades and Grade Points- It is recommended to adopt 10 point grading system with the letter grades as given below:

Award Of Diploma:

a) PGDCA is a two semester integrated course spread over the period of 1 year. The course of PGDCA will be 1 year integrated course commensing from the years as mentioned below:
   - PGDCA - SEMESTER I AND II – Diploma

b) The candidate may take exit after one year of successful completion of the course. After successful completion of one year (Semester I to II) the candidate will get Diploma.

Grading Chart of 100 Point

Sr. No	Marks Obtained	Numerical Grade (Grade Points)		CGPA	Letter Grade
1	Absent	00(Zero)		---	--
2	0 – 34	00(Zero)		0.0 – 4.99	F (Fail)
3	35 – 44	05		5.00 – 5.49	C (Satisfactory)
4	45 – 54	06		5.50 – 6.49	B (Average)
5	55 – 64	07		6.50 – 7.49	B+ (Good)
6	65 – 74	08		7.50 – 8.49	A (Very Good)
7	75 – 84	09		8.50- 9.49	A+ (Excellent)
8	85 – 100	10		9.50- 10	O (Outstanding)

Grading Chart of 50 Point

Sr. No	Marks Obtained	Numerical Grade (Grade Points)	CGPA	Letter Grade
1	Absent	00(Zero)	---	--
2	0 TO 17	00(Zero)	0.0 – 4.99	F (Fail)
3	18 TO 22	05	5.00 – 5.49	C (Satisfactory)
4	23 TO 27	06	5.50 – 6.49	B (Average)
5	28 TO 32	07	6.50 – 7.49	B+ (Good)
6	33 TO 37	08	7.50 – 8.49	A (Very Good)
7	38 TO 42	09	8.50- 9.49	A+ (Excellent)
8	43 TO 50	10	9.50- 10	O (Outstanding)

Note:

i. Marks obtained >= 0.5 shall be rounded off to next higher digit.
ii. The SGPA & CGPA shall be rounded off to 2 decimal points.
iii. Marks obtained in 50 marks or 200 marks paper shall be converted to 100 marks.

Calculation of SGPA & CGPA

1. Semester Grade Point Average (SGPA)

$$SGPA = \frac{\sum(Course\ Credits\ x\ Grade\ points\ obtained)of\ a\ semester}{\sum(Course\ Credits)of\ respective\ semester}$$

2. Semester Grade Point Average (SGPA)

$$CGPA = \frac{\sum(Total\ Credits\ of\ semester\ X\ SGPA\ of\ respective\ semester)of\ all\ semester}{\sum(Total\ Course\ Credits)of\ all\ semesters}$$