SWAMI VIVEKANAND UNIVERSITY SAGAR

SEMESTER – 1

SCHEME OF EXAMINATION

Sub Code	Paper	Subject Name	Maximum Marks	Minimum Marks
PGDCA 101	Paper I	Introduction to Information Technology	50	17
PGDCA 102	Paper II	Operating System	50	17
PGDCA 103	Paper III	P.C. Software	50	17
PGDCA 104	Paper IV	Object Oriented Programming In C++	50	17
PGDCA 105	Paper V	Practical & VivaVoce	100	33
		Sassional	50	17
		Total	350	118

SEMESTER – 11
SCHEME OF EXAMINATION

Sub Code	Paper	Subject Name	Maximum Marks	Minimum Marks
PGDCA 201	Paper I	Internet Engineering	50	17
PGDCA 202	Paper II	Visual Basic & Oracle	50	17
PGDCA 203	Paper III	Software Engineering	50	17
PGDCA 204	Paper IV	Project Report & Viva - voce	100	33
PGDCA 205	Paper V	Practical & VivaVoce	70	24
		Sassional	30	10
		Total	350	118

PAPER-I INTRODUCTION TO INFORMATION TECHNOLOGY M.M.: 50

UNIT-I

The World Wide Web, How it Happens, Connecting to Web, Browsing, Locating Information Web Multimedia, Information System, Software and Data, IT In Business and Industry Home and At Play, Education and Training, Entertainment and Arts, Sciences, Engg., Computer In Hiding, GPS, Types of Computer Systems and Central Processing Unit.

UNIT-II

Input and Output Devices, Keyboard Graphics, Inputting Text, Pointing Devices, Pixels and Resolutions, Laser Printers, Colors Printers, Other Printers, How Data Is Store , Characteristics, Floppy Disks, Hard Disk Drives, Optical Disk, Increasing Data Storage, Backing Up Your Data, The Smart Card.

Software What Is It, User Interface, Application Program, Operating System, Types

UNIT-III

Entering and Editing Documents, Other Word Processing Features, Formatting Documents Desktop Publishing For Print, Screen, Spread Sheet Applications, Introduction, Entering Data, Chart and Graphs, Database Application Introduction, Principles of Data Storage, Working With a Database, Queries, Internet Connectivity. Network Application-Fax, Voice And Information Services, Person To Person Communication, Group Communication, Exchanging Lines. LAN – Introduction Architecture, The Exe System, WAN-Introduction. Devices and Media, Protocols, High Bandwidth Personal Connections.

UNTI-IV

Multimedia-Introduction, Paint and Draw Application, Graphics Effect & Tech, Sound & Music, Video, Multimedia Authoring Tools, Presentation Devices, Sound & Motion, Video & Television.

Corporate Computing Introduction, Transaction Processing, Information Tools For Management Control, Marketing, Advertising, Sales, Design, Production Manufacturing Business On Internet, Virtual Office, Career, Recent Trends.

UNIT-V

Programs-Introduction, First and Second Generation Languages, Programming Languages Procedural, Methods, How Programs are Developed, Programming Tech., Introduction, Branching & Looping, Function & Decomposition, Corporate Development, Personal Social Issues.

Text Book:

1. Lambert: Internet 101.

2. Alter: Information Systems.

3. Information Technology : The Breaking Wave Curtain (TMH)

4. Fundamentals of I.T. By Chetan Shrivastava, Kalyani Comp, Apply. Is Business T.D.

5. Malhotra Dictionary of Computers By Sanjeev Sharma.

Computer Magazines

1.	C & C	2.	Comp. Today
3.	PC Quest	4.	Express Computers
5.	PC Magazine	6.	PC World
7.	News Papers	8.	Central Computer Mai

PAPER - II OPERATIG SYSTEM

M.M.: 50

UNIT-I

History of Operating System : Generation, First, Second, Third, Fourth Generation, Computer Architecture : Introduction, 4 GL Program, 3 GL Program, 2 GL Program, 1GL, OGL, The Context of a Program, Interrupts.

Operating System: Introduction Difference Services, Uses of System Call, The Issue of Probability, User's View, The Micro Facility, GUI, The Kernel, Booting.

UNIT-II

Information Management : Introduction, File System, Device Driver, Terminal I/O. Process Management : Introduction, Process, Evolution of Multiprogramming, Context Switching, Process States, Transition, PCB, Process Hierarchy, Operations On a Process, Create Process, Kill Process, Dispatch Process, Change The Priority of a Process, Block Dispatch, Time Up, Wake Up, Suspend/Resume Operation, Multitasking. Inter-Process Communication: The Producer Consumer Problems, Solution.

UNIT-III

Deadlocks: Introduction, Graphical Representation, Prerequisites, Strategies. Memory Management: Introduction, Single Contiguous Mgt., Fixed Portioned MM, Variables Portions, Non Contiguous Allocation-General Concepts, Paging, Segmentation, Combined System, Virtual Memory Mgt System.

Operating Systems: Security And Protection.

UNIT-IV

Parallel Processing: Introduction, What Is It, Difference Between Distributed and Parallel, Advantages, Writing Programs, Classification, Machine Architecture.

Issues Case Study- Mach DG/UX.

Operating System In Distributed Processing: Introduction, Distributed Processing. LAN Environment and Protocols.

Graphical User Interface and The O/S: Various Concepts.

UNIT-V

UNIX – a Case Study: Introduction, History & Overview of UNIX, File System, Data St., For Processing/MM, Process States & Transactions, Execution and Terminating a Programming In UNIX, Using The System, Process Scheduling Memory Management.

Netware-A CASE STUDY – Various Concepts.

Text Book: Nutt/ operating Systems (AVL).

PAPER-III PC SOFTWARE

M.M.: 50

UNIT-I

1. Computer Application and Dos:
2. Computer Application
3. Disk Operating System (Dos)
4. Additional Dos Commands
5. Configuring Dos and Batch Files

UNIT-II

1. Window:
2. Windows Basics
3. Windows Accessories
4. Using File Manager and Program Manager

UNIT-III

1. Word
2. Introduction to Word
3. Editing a Document
4. Move and Copy Text and Help System
5. Formatting Text and Paragraph
6. Finding and Replacing Text and Spelling Checking
7. Using Tabs
8. Enhancing Documents
9. Columns, Tables and Other Features
10. Using Graphics, Templates and Wizards
11. Using Mail Merge
12. Miscellaneous Features of Word.

UNIT-IV

Excel: Introduction to Worksheet and Excel, Getting Started With Excel, Editing Cells and Using Commands and Functions, Moving and Coping, Inserting and Deleting Rows and Columns, Getting Help and Formatting a Worksheet, Printing The Worksheet, Creating Charts, Using Date and Time and Addressing Modes, Naming Ranges and Using Statistical, Math and Financial Functions, Database In A Worksheet, Additional Formatting Commands and Drawing Toolbar, Miscellaneous Commands and Function. Multiple Worksheet and Macros.

UNIT-V

Introduction to Desktop Publishing.

Overview Power Point.

Computer Viruses and E-Mic

Text Book:

1. Sangam – Microsoft Office 2000 Ptr.
2. Pc Software For Windows Made Simple By R.K. Taxali.
   Computer Awareness and Made Simple By R.K. Taxali.

PAPER - IV OBJECT-ORIENTED PROGRAMMING IN C++

M.M.: 50

UNIT-I

A. Introduction To Programming In C++.

1. Simple Programs.
2. The Output Operator.
3. Characters and String Literals.
4. String Length.
5. Comments.
6. Variables, Objects, and Their Declaration.
7. Keywords and Identifiers.
8. Initializing In The Declaration.
9. Chained Assignments.
10. The Semicolon.
11. Program Style.
12. Integer Types.
13. Simple Arithmetic Operators.
14. Operator Precedence and Associatively.
15. The Increment and Decrement Operators.
16. Compound Assignment Expressions.
17. The Char Type.

B. Conditional Statement and Integer Types

1. Input
2. The If Statement.
3. The IF….ELSE Statement
4. Relational Operations.
5. Compound Statements.
6. Keywords.\
7. Compound Conditions.
8. Boolean Expressions.
9. Nested Conditionals.
10. The SWITCH Statement.
11. The Conditional Expression Operator.
12. Scope.
13. Enumeration Types

UNIT-II

A. Integration And Floating Types:-

1. The While Statement
2. The Do…..While Statement.
3. The For Statement.
4. The Break Statement
5. The Continue Statement
6. Real Number Types.
7. Type Conversions.
8. Constants, Variables, and Objects.

B. Functions:-

1. Standards C Library Functions.
2. User-Define Functions.
3. Test Drivers.
4. Function Declaration and Definitions.
5. Local Variables and Function.
6. Void Functions.
7. Boolean Function.
8. I/O Functions.
9. Passing By Reference.
10. Passing By Constant Reference.
11. Inline Function.
12. Function Scope.
13. Overloading.
14. The Main () and Exit () Functions.

PAPER - IV OBJECT-ORIENTED PROGRAMMING IN C++

M.M.: 50

UNIT-III

Arrays :-

1. Introduction.
2. Processing Array.
3. Initialization an Array.
4. Passing An Array To a Function
5. Type Definition.
6. Multidimensional Arrays.

B. Pointers And References:-

1. Introduction.
2. References.
3. Pointers.
4. Derived Types.
5. Objects and Pointers.
6. Returning a Reference.
7. Array and Pointers.
8. The New Operator.
9. The Delete Operator.
10. Dynamics Array.
11. Using Const With Pointers Arrays.\
12. Array Of Pointers and Pointers to

UNIT-IV

A. Strings :-

1. Introduction.
2. Review of Pointers.
3. Strings.
4. Strings I/O
5. Some CIN Members Functions.
6. Character Function Defined In <CTYPE H>
7. Array of Strings.
8. The C-String Handling Library.

B. Classes :-

1. Introduction.
2. Class Declarations.
3. Constructions.
4. Constructor Initialization Lists.
5. Access Functions.
6. Private Member Function.
7. The Copy Constructor
8. The Class Destructor.
9. Constant Objects.
10. Structures.
11. Pointers to Objects.
12. Static Data Members.
13. STATIC Function Members.

UNIT-V

A. Overloading Operators:-

1. Introduction.
2. Overloading The Assignment Operator.
3. Overloading The Arithmetic Operator
4. Overloading The Relational Operators
5. Overloading The Increment and Decrement Operators.

B. Composition and Inheritance:-

1. Introduction
2. Composition.
3. Inheritance.
4. Virtual Functions and Polymorphous.

REFERENCE:

1. C++ Primer – Lip Man (AWL.)
2. Hubbard J. Programming With C+ By Mc Graw Hill.
3. Turbo C++ Techniques and Application By Ladd, BPB Publications.
4. Programming In C++ By Robert Lafore, BPB Publications.

PRACTICALS:-

LABORATORY (C++)

1. Write a Program To Swap The Contents of Two Variables With & Without Using Temporal Variable.
2. Write a Program To Print The Fibonacci Series Up To a Given No. of Terms.
3. Write a Program To Invert a 3 X 3 Matrix.
4. Write a Program To Multiply Two Matrixes.
5. Write a Program To Create an Odd Magic Square.
6. Write a Program To Find all Capital Letters In a String.
7. Write a Program To Convert Upend Case Letters To Lower Case & Vice Versa In a Sentence Mixed Cases.
8. Write a Program To Search a No In Any Array Using The Algorithms Like Sequential Search Etc.
9. Write a Program To Check Whether a String Is a Palindrome Or Not.
10. Write a Program To Find Area & Volume of a Box With & Without Using Constructors.
11. Design a Class Which Has Length & Breadths Data Members. Use Members Function To
    i. Set Value For The Sides From Program J.E. Length & Breadth.
    ii. Read Values From The Key Board.
    iii. Display The Area of The Rectangle.
12. Write a Max Function Which Accepts 2 Numbers & Find The Maximum of Two Numbers The No Given As The Argument Can Be Integer Float of Double. Overload The Max Function So That Main () Calls The Max Function With Different Types of Arguments.
13. Overload The Volume Function To Find Volume of
14. (A) Cube (B) Cylinder (C) Rectangle
15. Write a Program To Calculate Area & Volume of a Triangular & Circle Suing Overloading.
16. Overload Binary Operator To Add 2 Complex Nos.
17. Write a Program To Calculate Factorial of a No. Through a Recursion.
18. Write a Program To Calculate Roots of Quadratic Equation.
19. Write a Program To Create a Data File To Store Enroll No., Roll-On and Narks.
20. Write a Program To Print a Mark Sheet Using Above Data File.
21. Write a Program To Print The Following O/P.

(PC-SOFT)

1. Create a Document Using MS Word To Write a Letter To Your For Living Him For Your Birthday Party.
2. Use MS-Word To Insert a Table Into The Document.
3. Mail Merge Using MS-Word.
4. Create a Document Using MS Word For Making a Banner of Your Institute.
5. Create a Document Using Excel For Creating & Saving a Spreadsheet.
6. Creation & Printing a Pipe, Bar Chart & Ling Graph Using Excel.
7. Use Suitable Formulas To Sum & Derive Averages Using Excel.
8. Printing a Spreadsheet &Also Printing Any Part of It.
9. Create a Document To Generate An Ordered List and Unrecorded List.
10. Create a Document For Adding Fonts To Text, Heading Titles & Addition of Graphics, Formatting of Text.
11. Create a Document To Printing Various Graphs & Presentation Methods.
12. Create a Document To Import Word Document In Power Point & Modification.
13. Create a Your CV Using MS-Word.
14. Design Student Database.
15. Design Mark Sheet To Your Graduation.
16. Create a Document To Generate Following Output:
17. Create a Document For Generating Header & Footer.
18. Create a Document Using Power Point To Make Auto Content Wizard.
19. Create a Document Using Power Point To Add Animation Effect To Your Slide.

SWAMI VIVEKANAND UNIVERSITY SAGAR

Post Graduate Diploma in Computer Science & Application (PGDCA)

Semester Second

SEMESTER – 11

Sub Code	Paper	Subject Name	Maximum Marks	Minimum Marks
PGDCA 201	Paper I	Internet Engineering	50	17
PGDCA 202	Paper II	Visual Basic & Oracle	50	17
PGDCA 203	Paper III	Software Engineering	50	17
PGDCA 204	Paper IV	Project Report & Viva - voce	100	33
PGDCA 205	Paper V	Practical & VivaVoce	70	24
		Sassional	30	10
		Total	350	118

PAPER – I INTERNET ENGINEERING

Maximum Marks: 50

UNIT-I

Internet Structure, Protocols and Access With an Eye To Intranets – Overview, Internet Protocol Model Overview, Internet Address, Internet Protocol, Transport Layer, Upper Layer Protocols, Internet Access Internet Applications, Future.

Router Technology – Introduction Network Fundamentals Internet Routing New Development Router Market.

UNIT-II

Internet and Internet Web Server Technology, Access and Protocols. HTML Technology, Application and Examples.

UNIT-III

Browsing Systems for The Web, The Internet, and The Internets. Building a Corporate Web Site: Practical Issues On Servers and Application Software.

UNIT-IV

On –Line Services Technology Application and Vendors.

UNIT-V

Virtual Reality Application On The Internet and Intranets – Virtual Reality Technology

Synopsis, Evolving Virtual Reality Applications. Opportunities For Corporate Education Training, Opportunities For Marketing and Business Applications Internets Next Killer Application.

Text Book:

Internet & Internet Engineering: Technologies, Protocols and Applications By

MINOLI (TMH) Principles & Internet Marketing By Vard Hanson

PAPER –II: VISUAL BASIC & ORACLE

Maximum Marks: 50

UNIT-I **RDBMS** Concepts: Introduction To Network: Hierarchical Relational Models DBMS Terminology's DBMS Components (Overview) Normalization (1, 2,3rd) ER Diagrams.

INTERACTIVE SQL: Invoking SQL Plus, The Oracle Data Type, Two Dimension Matrix Creation, Insertion Of Data Into Tables, Updating The Contents of Table Deletion Operations The Many Faces of The Select Command, Modifying The Structure of Tables, Removing Deleting Dropping Table's Data Constraints Computation Expression.

UNIT –II Lists Used to Select Data, Logical Operators, Range Searching, Pattern Match Oracle Function, Grouping Data From Tables In SQL, Manipulating Dates In Constructing English Sentence With Data From Table Columns, Subque Using The Union , Intersect and Minus Clause Indexes, Views, Sequences, Grant Permission , Revoking The Permission Given, Creation of Reports In SQL Plus.**PL/SQL:** Introduction, The PL/SQL Execution Environment, The PL/SQL Syntax, Understanding The PL/SQL Block Structure, Oracle Transaction, Concurrent Control In Oracle, Looks, Cursors, Error Handling In PL/SQL.

UNIT – III **Visual Basic:** Visual Basic Programming Environment: Menu Bar**,** Toolbars, Project Explorer, Toolbox, Properties Window, From Layout Window, Object Browser, Control of VB Project, Visual Development and Event-Driven Programming.

UNIT-V **Programming Fundamentals:** Modules, Data Types, Variables, Constants, Array Procedures, Control Structure, Built-In Functions.

UNIT-V **Working With Form And Controls:** Using Form Template : Creating and Using Controls, Classification of Controls, Properties of Control, Method, Control Array, Menu Interface, Menu Editor, Pop-Up Menu, Mouse Events, Dialog Boxes, Model And Modeless, Debugging Tolls, Handing Runtime Errors, Graphical Control, Multiple Document Interface (MDI), Creating a Toolbar, Creating Sttusbar, Active-X Controls In VB, Calling API Functions Form VB.

Reference:

1. Oracle – The Complete Reference (Tmh).
2. Oracle & D2k By Ivan Byross (Bpb).
3. Oracle: Performance Tuning & Optimization By Edward Whalen (Sams).
4. Visual Basic From The Ground Up, By Gray Cornell (Thm).
5. Programming With Vb 6.0 Mohammed Azam.

PAPER –III SOFTWARE ENGINEERING

Maximum Marks: 50

UNIT-I

Introduction To Software Engineering: Software Characteristics & Components, Software Paradigms, Software Consideration, Software Project Planning, Matrices For Software Productivity & Equality, Various Project Estimation Techniques & Software Project Scheduling.

UNIT-II

Requirement Analysis: Analysis Principles, Complexity Measures, Object Oriented Analysis Methods, Storage & Processing Time Analysis, Database Requirements.

UNIT-III

Software Design Process: Design Fundamentals, Top Down Bottom Up Design, Design Representations, Modular Design, Architectural Design, Procedural Design, Data Directed Design, Data Structure Oriented Design, Object Oriented Design, Real-Time Design, Software Tools.

UNIT-IV

Software Implementation Language & Coding, Language Classes, Coding Style, Coding Efficiency, Software Quality Assurance. Software Testing Techniques, Software Testing Strategies, Comparison of Test Methods, Choice of Test Data, Classification of Tests.

UNIT-V

Software Maintenance & Management: Maintenance Characteristics, Software Maintain Ability, Maintenance & Task, Maintenance Organization, Maintenance Side-Effect & Issue, Software Configuration Management (SCM), SCM Process & Standards.

Reference:

1. Software Engineering- By Roger S. Pressman (TMH)
2. Software Engineering Fundamentals – By Behforroz.
3. Software Engineering – By Ian Somerville (AWL).

Note: - Paper Setters Are Requested To Set Two Questions From Each Unit.

PAPER –IV: PROJECT REPORT & VIVA - VOCE **M. M.:100**

PRACTICAL VIVA VOCE –

Practical based on theory papers. **M.M.: 70**