PANJABUNIVERSITY CHANDIGARH- 160 014 (INDIA)

(Estted. under the Panjab University Act VII of 1947-enacted by the Govt. of India)

FACULTY OF SCIENCE

SYLLABI FOR

POSTGRADUATE DIPLOMA

IN

COMPUTER APPLICATIONS

FOR

EXAMINATIONS 2017–2018
(SEMESTER SYSTEM)

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Outline of the Syllabi and Courses for Post Graduate Diploma in Computer Applications for Examination – 2017 -2018 (Semester System).

FIRST YEAR (SEMESTER –I)

Paper Code	Paper Name	Lecture	Tutorial	Practicals/ Weeks	Exam. Marks	Int. Ass. Marks	Total Marks	Exam Hours
PGD-1101	Computer Fundamentals	**5**	**1**	**0**	**60**	**15**	**75**	**3**
PGD-1102	Computer Programming using C	**5**	**1**	**0**	**60**	**15**	**75**	**3**
PGD-1103	DataBase Management System	**5**	**1**	**0**	**60**	**15**	**75**	**3**
PGD-1104	Data Communications and Networks	**5**	**1**	**0**	**60**	**15**	**75**	**3**
PGD-PR-1105	Lab1 (Based on PGD-1101 & PGD-1102)	**0**	**0**	**9**	**60**	**15**	**75**	**3**
PGD-PR-1106	Lab2 (Based on PGD-1103)	**0**	**0**	**9**	**60**	**15**	**75**	**3**
TOTAL PERIODS =42						**TOTAL MARKS = 450**		

FIRST YEAR (SEMESTER –II)

Paper Code	Paper Name	Lecture	Tutorial	Practicals/weeks	Exam. Marks	Int. Ass. Marks	Total Marks	Exam Hours
PGD-2101	Object Oriented Concepts Using JAVA	**5**	**1**	**0**	**60**	**15**	**75**	**3**
PGD-2102	Web Technologies	**5**	**1**	**0**	**60**	**15**	**75**	**3**
PGD-2103	Software Engineering	**5**	**1**	**0**	**60**	**15**	**75**	**3**
PGD-2104	Computer Based Accounting	**5**	**1**	**0**	**60**	**15**	**75**	**3**
PGD-PR-2105	Lab3 (Practical based on PGD-2101)	**0**	**0**	**9**	**60**	**15**	**75**	**3**
PGD-PR-2106	Lab4 (Practical based on PGD-2102)	**0**	**0**	**9**	**60**	**15**	**75**	**3**
PGD-2107	**Project Work :** Project will involve Development of Business Application / Web Site	**0**	**0**	**6**	**0**	**--**	**100**	**--**
TOTAL PERIODS =48						**TOTAL MARKS = 550**		

Note: Pass Marks 40% marks in Theory, Internal Assessment, and Practical separately.
50% marks for Project Work.
50% marks in Aggregate to qualify the examinations.

SEMESTER –I

Paper Title : Computer Fundamentals
Paper Code : PGD - 1101 Time : 3 Hrs.
Max. Marks : 75
External : 60
Internal : 15

Course Duration: 60 Lectures

Objective : The objective of the course is to familiarize students with basic concepts related to Computers, DOS, Windows, Linux and application software's like Word-processing, Spreadsheet Software and Presentation Software.

Note:

i. The Question Paper will consist of Four units.
ii. Examiner will set total of **NINE** questions comprising **TWO** questions from each unit and **ONE** compulsory question of short answer type covering whole syllabi.
iii. The students are required to attempt ONE question from each unit and the Compulsory question.
iv. All questions carry equal marks unless specified.

UNIT - I

1. **Basics of Computers: C**haracteristics of computer; History of computers; classification of computers based on size, architecture, and chronology; Applications of computers; Hardware, Software, and Firmware. Types of software: System and Application software; Input, Process and Output, Block diagram of a computer.

2. **Representation of information:** BIT, BYTE, Memory, Memory size; RAM, ROM, PROM, EPROM, Magnetic tapes, Disks, Organization of data on disks: Tracks, sectors, cylinders, heads, access time, seek time and latency time.
ASCII and EBCDIC Codes, Binary, Octal, Decimal and Hexadecimal Number Systems and their Conversion, Integer and Floating Point Representation
Input/Output devices.

UNIT - II

3. **Disk Operating System:** Booting sequence; Warm and Cold Booting;Concept of File and directory, Types of DOS commands: Internal and External; Internal Commands: DIR, MD, CD, CLS, COPY, DATE, DEL, PATH, PROMPT, REN, RD, TIME, TYPE, VER, VOL; External Commands: XCOPY, ATTRIB, BACKUP, RESTORE,FORMAT, DISKCOPY, Introduction to CONFIG.SYS and AUTOEXEC.BAT files.

4. **Windows:** GUI, Icons, Toolbar, Control panel, Files and folder management under windows , Accessories, Network Neighborhood, System Tools, Recycle Bin

5. **LINUX**: Overview of LINUX structure, Basic Linux commands such as date, echo, cal, bc, passwd, File and Directory commands such as ls, mkdir, pwd, cd, rmdir, cat, cp, mv, rm Understanding File Access Permissions using chmod, chown, chgrp.
Comparison of main features of DOS, LINUX and Windows Operating Systems.

UNIT - III

6. **Word Processing Software**:
   Basics of Word Processing: creating, opening, saving, and printing document, Menu Toolbars.

   Editing Text: Copy, Paste, Delete, Move etc., Finding and Replacing Text, Spell Check, Autocorrect feature, language setting and thesaurus
   Formatting: Character, Paragraph and Page formatting, working with indents, Bulleted and numbered lists, adding Headers and Footers, setting up Multiple Columns
   Working with tables: Inserting/creating table using toolbar and drawing, formatting table, adding/deleting rows/columns, Applying borders to tables
   Clipart: Using clip art, Creating Word Art
   Mail merge: Creating merged envelops, creating merged mailing labels

UNIT - IV

7. **Spreadsheet Software:**
   Worksheet overview: Row, Column, Cells, Menus, creating, opening, saving, and printing worksheet; working with Range

   Editing information: Entering text, numbers and formulae, AutoSum, AutoFill, spell checking

   Working with Functions: Statistical, Mathematical and String functions, date and Time functions, Trigonometric functions

   Working with charts: Line graphs, Pie charts, Bar graphs, adding Titles, Legends etc. to charts, Printing Charts

8. **Presentation Software**:
   Basic features, selecting design templates, creating, saving and printing a simple presentation, various views, Adding pictures, shapes, clipart, audio and movie.

References :

1.	Basandra, S.K	Computers Todays by Galgotia Publications, N.Delhi
2.	Taxali, R.K	PC Software made simple by. - Tata McGraw Hill –New Delhi.
3.	Sinha, P.K,	Computer Fundamentals by. BPB Pubs, New Delhi
4.	Sanders, Donald M,	Computers Today by McGraw Hill, New York
5.	Rajaraman, V.	Fundamentals of Computers, PHI, New Delhi,
6.	Curtin	Information Technology TMH, New Delhi.
7.	Mansfield, Ron,	Compact Guide to Windows, Word and Excel BPB Publishers New Delhi
8.	Norton, P.	Complete guide to LINUX, Techmedia

Paper Title : Computer Programming Using C
Paper Code : PGD - 1102 Time : 3 Hrs.

Max. Marks : 75
External : 60
Internal : 15

Course Duration: 60 Lectures of one hour each.

Objective : The objective of the course is to familiarize students with programming concepts of 'C' including functions, Arrays, strings etc.

Note:

i. The Question Paper will consist of Four units.
ii. Examiner will set total of **NINE** questions comprising **TWO** questions from each unit and **ONE** compulsory question of short answer type covering whole syllabi.
iii. The students are required to attempt ONE question from each unit and the Compulsory question.
iv. All questions carry equal marks unless specified.

UNIT – I

1. **Problem Solving**: Problem Identification, Analysis, Flow charts, Decision Tables, Pseudo code and algorithms, Program Coding, Program Testing and Execution.
2. **C Language Fundamentals**: 'C' Language: History, Structure of a C program, Data types, Constants and variables, Operators and Expressions, Type casting, Type conversion, Scope Rules:Local and Global variables, I/O functions, Control constructs(Sequencing, alteration and iteration)
3. **Header files**: stdio.h, ctype.h, string.h, math.h, stdlib.h, time.h
4. **Storage classes**: automatic, external, static, register
5. **Preprocessor**: #define, #include, #undef, #conditional compilation directives (#if, #else, #elif, #endif, #ifdef and #ifndef)

UNIT – II

6. **Functions**: library functions, user defined functions, scope rule of functions, Parameter passing: call by value and call by reference, Recursion
7. **Arrays**: One dimensional and two dimensional arrays, declaring arrays, initializing arrays, processing of arrays, passing arrays as arguments to functions
8. **Pointer**s: Definition, Declaring pointers, accessing values via pointers, pointer arithmetic, pointer to strings, passing arguments using pointers, array of pointers

UNIT – III

9. **Strings:** Declaring String, built-in string functions-strlen(),strcpy(), strcat(), strcmp(), array of strings, two dimensional array of characters, Array of Pointers to Strings
10. **Structure:** Defining a structure type, declaring variables of structure type, initializing structures. Accessing Structure Elements, array of structures, Array in Structures, Difference between array and structure, nested structures
11. **Unions**: Declaring a Union, Accessing elements of a type union.

UNIT – IV

12. **Console Input/Output:** Console I/O Functions, Formatted Console I/O Functions, sprintf( ) and sscanf( ) Functions, Unformatted Console I/O Functions, gets(), puts()
13. **File Input/Output**: File Operations, Opening a File, File Opening Modes, Reading from a File, Trouble in Opening a File, Writing to a File, Closing the File.

References:		
1.	Kanetkar, Yashavant	Let us C, BPB Publications, New Delhi
2.	Gottfried, B.	Theory and problems of Programming in C, Schaum Series.N.D. TMH
3.	Sinha, P.K.	Computer Fundamentals, BPB Publications,
4.	Salaria, R. S.	Application Programming in C; Khanna Book Publishing Co. (P) Ltd., New Delhi.

Paper Title : Data Base Management System
Paper Code : PGD - 1103 Time : 3 Hrs.

Max. Marks : 75
External : 60
Internal : 15

Course Duration: 60 Lectures

Objective : The objective of the course is to make the students understand Database concepts and SQL.

Note:

i. The Question Paper will consist of Four units.
ii. Examiner will set total of **NINE** questions comprising **TWO** questions from each unit and **ONE** compulsory question of short answer type covering whole syllabi.
iii. The students are required to attempt ONE question from each unit and the Compulsory question.
iv. All questions carry equal marks unless specified.

UNIT - I

1. **Data Base Concept:** Data Base Vs File Oriented Approach, Basic DBMS terminology, Data Independence, General Architecture of a Data Base Management Software, Components of DBMS, Advantages and Disadvantages of DBMS. Distributed Databases, Structure and Design of Distributed Databases.

2. **Data Base Design:** Introduction to Data Models, Entity Relationship Model, Entities, Attributes, E-R Diagrams, Conceptual Design of a relational data base model.

UNIT – II

3. **Relational Model:** Storage organization for Relations, Relational Algebra, Relational Calculus, Functional dependencies, multivalued dependencies, Candidate Key and Primary Key in a Relation, Foreign Keys, Normalization - Introduction, 1NF, Partial Dependencies, 2N, data Anomalies in 2NF Relations, Transitive Dependencies 3NF

3. **Database Security:** Database Security and Integrity: Data security risks, Password-related threats, Protecting the data within the database- database privileges, system privileges and object privileges, granting and revoking privileges and Roles. Concurrency: locking techniques for concurrency control.
Recovery: Causes of failures, recovery from failures, Log based recovery, checkpoints

UNIT - III

4. **Understanding SQL-1:** Data Types, Creating Tables, Creating a Table with data from Another table, Inserting Values into a Table, Updating Column(s) of a Table, Deleting Row(s) from a Table, Dropping a Column, Querying database tables, Conditional retrieval of rows, Working with Null Values, Matching a pattern from a

table, Functions: Character Functions, Date Functions, Group Functions, Ordering the result of a Query Aggregate Functions, Grouping the Result of a Query.

UNIT - IV

5. **Understanding SQL-II:** Definition and Advantages of Views, Creating and Altering Views, Using Views, Querying Multiple Tables using Equi-Joins, Cartesian Joins, Outer Joins, Self-Joins, SET Operators: Union, Intersect, Minus; Introduction to Nested Queries, Define Transaction, COMMIT and ROLLBACK,

References:		
1.	Desai, B.C.	An Introduction to Database Systems, Galgotia Pub. New Delhi
2.	Date, C. J.	Database Systems Vol. I & II, Narosa Publ., New Delhi (Indian student ed.)
3.	Henry F. Korth, Abraham,	Database System Concepts, McGraw Hill Inc., New York International ed
4.	Mukhi, Vijay	Mastering Oracle, BPB Publication, NewDelhi
5.	James T. Perry	Understanding ORACLE, BPB Publications
6.	O'Reilly	Oracle PL/SQL Programming, Shroff Publications Mumbai
7.	Rowski, Bob	Oracle Client server Computing, BPB publications

Paper Title : Data Communications and Networks
Paper Code : PGD - 1104 Time : 3 Hrs.

Max. Marks : 75
External : 60
Internal : 15

Course Duration: 60 Lectures

Objective : The objective of the course is to make the students understand Layered structure of Networks and working of different Layered.

Note:

i. The Question Paper will consist of Four units.
ii. Examiner will set total of **NINE** questions comprising **TWO** questions from each unit and **ONE** compulsory question of short answer type covering whole syllabi.
iii. The students are required to attempt ONE question from each unit and the Compulsory question.
iv. All questions carry equal marks unless specified.

UNIT – I

1. **Introduction to Computer networks and applications:** Network Structure and Architecture, Network Hardware and Software (protocol hierarchies, design issues for layers, interfaces and services: connection oriented and connection less), Network structure and architecture-point to point, multicast, broadcast, Classification of networks on the basis of Geographical Span (PAN, LAN, MAN and WAN) , LAN topologies (Bus, Ring, Star, Mesh, Tree and Hybrid). Network Connecting Devices: Repeaters, Hubs, Bridges, Routers, Gateways and Switches, Network Reference models: OSI model, TCP / IP model. Comparison between OSI and TCP/IP.

UNIT – II

2. **Introduction to Data Communication**: Analog Signal, Digital Signal, Analog vs Digital Communication; Band Width Limitation, Data rate of a channel; Physical Layer: Transmission media: Guided (Twisted-pair, Coaxial and Optical fiber) and Unguided (Radio, Microwave and infrared), Switching: Circuit switching, Packet Switching, Message Switching, Telephone system, modems. Modulation techniques: AM, PM, FM; Multiplexing Techniques- FDM, WDM, and TDM

UNIT – III

3. **The Data Link Layer:** Design Issues, Error Detection and Correction: Nature of errors, Parity Check, CRC, Hamming Code, Elementary Data Link Protocols: Simplex. Stop and Wait Protocol, Sliding Windows Protocol: one Bit sliding windows protocol, go back n, selective repeat, HDLC: High Level Data Link Protocol.

UNIT – IV

4. **The Network Layer:** Design Issues, Routing Algorithms (Shortest Path, Flooding, Flow Based, Distance Vector, Link State, Broadcast, Hierarchical Routing),

Congestion Control Algorithms and their general principles (Leaky Bucket, Token Bucket); Internetworking: tunneling, Internet Routing, fragmentation.

References :		
1.	Tanenbaum, Andrew S.	Computer Networks, PHI.
2.	Behrouz A. Forouzan	Data Communication & Networking, TMH
3.	Stalling William Maxwell	Data and Computer Communication, Macmillan International edition.
4.	McGoven, Tom	Data Communication Concepts& Applications", (Prentice Hall)

Title : Lab1(Based on PGD - 1101 and PGD - 1102)

Paper Code : PGD-PR-1105

Time : 3 Hrs.
Max. Marks : 75
External : 60
Internal : 15

This laboratory course will be based on PGD- 1101 and PGD- 1102

Note: Paper will be set at the time of examination. Due weightage may be given to the practical note-book and Assignments in evaluation.

Paper Title : Lab2(Based on PGD -1103)

Paper Code : PGD-PR-1106

Time : 3 Hrs.
Max. Marks : 75
External : 60
Internal : 15

This laboratory course will be based on PGD- 1103.

Note: Paper will be set at the time of examination. Due weightage may be given to the practical note-book and Assignments in evaluation.

SEMESTER -II

Paper Title : Object Oriented Concepts Using JAVA
Paper Code : PGD - 2101 Time : 3 Hrs.
Max. Marks : 75
External : 60
Internal : 15

Course Duration: 60 Lectures of one hour each.

Objective : The objective of the course is to familiarize students with Object Oriented concepts including inheritance, visibility control etc. using JAVA programming language.

Note:

i. The Question Paper will consist of Four units.
ii. Examiner will set total of **NINE** questions comprising **TWO** questions from each unit and **ONE** compulsory question of short answer type covering whole syllabi.
iii. The students are required to attempt ONE question from each unit and the Compulsory question.
iv. All questions carry equal marks unless specified.

UNIT - I

1. **OOPs concepts**: Basic Concepts of Object-Oriented Programming (Objects and Classes, Data abstraction and encapsulation, Inheritance, Polymorphism, Dynamic binding, Message communication), difference between procedure oriented and object oriented approach, Benefits of OOP's; Applications of OOP's, Object-Oriented languages.

2. **Object oriented programming with JAVA**: Byte code, Java virtual machine, Java Development Kit, java tokens, constants, variables, data types, operators, expressions, control structures, defining class, creating objects, accessing class members, method overloading, static members

UNIT – II

3. **Inheritance:** Defining a subclass, subclass constructor, multilevel inheritance, Hirerchical inheritance.Overriding methods, Final variables, methods, and classes, Abstract Methods and Classes.
4. **Visibility Control**: Public access, friendly access, protected access, private access, private protected access.
5. **Arrays:** One dimensional array, declaration, creation and initialization of arrays, Array length, Two dimensional array

UNIT – III

6. **Strings**: String arrays, String methods, String Buffer class
7. **Interfaces:** Defining interfaces, Extending Interfaces, Implementing Interfaces. Accessing Interface variables
8. **Packages:** Java API packages, Defining a package, Creating and Accessing

packages, Adding class to a package, Hiding Classes.

9. **Multithreaded Programming**: Creating Thread, Extending the Thread class, Stopping and Blocking a Thread, Life cycle of a Thread.

UNIT – IV

10. **Errors and Exception Handling**: Fundamentals, error types, exception types, using Try and catch, finally statement, Built–in exceptions.
11. **Applet Programming**: Local and remote applets, Applet Life Cycle, Creating an executable Applet, Applet tag, Adding Applet to a HTML file, Passing parameters to Applets

References:		
1.	Balaguruswamy, E.	Fundamentals of Java
2.	Daniel Dang	An Introduction to Java Programming, PHI, New Delhi
3.	Deitel & Dietel	JAVA, How to Program, Pearson Education Asia
4.	Liang	An Introduction to Java Programming PHI

Paper Title : Web Technologies
Paper Code : PGD - 2102 Time : 3 Hrs.

Max. Marks : 75
External : 60
Internal : 15

Course Duration: 60 Lectures of one hour each.

Objective : This course familiarizes students with concepts of HTML, CSS, JAVA Scripts and PHP.

Note:

i. The Question Paper will consist of Four units.
ii. Examiner will set total of **NINE** questions comprising **TWO** questions from each unit and **ONE** compulsory question of short answer type covering whole syllabi.
iii. The students are required to attempt ONE question from each unit and the Compulsory question.
iv. All questions carry equal marks unless specified.

UNIT – I

1. **Introduction to HTML/DHTML:** Brief history of HTML, Building blocks of HTML, lists, links, images, image map, tables, frames, forms
2. **Introduction to cascading style sheets (CSS):** Introduction to Style Sheets, Types of style Sheets-Inline, embedded and external style sheets.

UNIT – II

3. **Fundamentals of Javascript:** Features, tokens, data types, variables, operations, control constructs, strings, arrays, functions, Document Object Model, event handling. Applications related to client side form validation.
4. **Javascript Objects**: Core language objects, The String Object, The Math Object, and The Date Object; User Defined Objects: Creating a User Defined Object, Instances, Objects within Objects

UNIT – III

5. **Introduction to PHP:** Embedding PHP code in a Web Page, Basic Syntax, Defining variable and constant, PHP Data types, Operators and Expressions
6. **Control Structures:** Making Decisions, Doing Repetitive task with looping, File inclusion statements.
7. **Functions**: Defining a function, Call by value and Call by reference, recursive function, Library functions
8. **String**s: Creating and accessing String, Searching & Replacing String, Formatting String, String Related Library function.

UNIT – IV

9. **Arrays:** Anatomy of an Array, Creating index based and Associative array, Accessing array Element, Looping with associative array using each() and foreach(), Some useful Library function: current(), next(), prev(), reset(), end(). **Working with Forms:** Super global variables, super global array, Importing and accessing user input, Combine HTML and PHP code.

10. **Working with files and Directories**: Opening, closing, Coping, renaming and deleting a file, working with directories, File Uploading & Downloading

References:		
1.	Phillips	Using HTML, PHI
2.	Bayross, Ivan	HTMLl,DHTML, Javascript by BPB
3.	Wanger & Wyke	Java Script Unleased, Techmedia, New Delhi.
4.	Steve Suehring	PHP6 and MYSQL Bible, Wiley India edition
5.	Steven Holzner	PHP:The complete Reference, Tata McGraw Hill
6	Kelvin Tetroi	Programming PHP

Paper Title : Software Engineering
Paper Code : PGD -2103 Time : 3 Hrs.

Max. Marks : 75
External : 60
Internal : 15

Course Duration: 60 Lectures

Objective : This course make students understand concepts related to Software Engineering including process model, project management, design and testing.

Note:

i. The Question Paper will consist of Four units.
ii. Examiner will set total of **NINE** questions comprising **TWO** questions from each unit and **ONE** compulsory question of short answer type covering whole syllabi.
iii. The students are required to attempt ONE question from each unit and the Compulsory question.
iv. All questions carry equal marks unless specified.

UNIT – I

1. **Software Engineering Fundamentals**: Characteristics, Components, Applications, principles of software engineering, skills of software engineer.
2. **Software Process Models**: Software Development Life Cycle, Waterfall Life Cycle Model, Boehm's Spiral Life Cycle Model, win Win Spiral Model

UNIT – II

3. **Software Project Management**: Software Project management Plan(SPMP), Project scheduling Techniques- Work Breakdown Structure(WBS), Project Evaluation Review Technique (PERT), Gantt Charts, Critical path method (CPM)
4. **Software Project Estimation and risk Management**: Problem-based estimation, Process based estimation, Cost Estimation Model- COCOMO Model, Software Risks, software Risk management, Risk Management activities- Risk Assessment and Risk Control, Benefits of Risk management, SRS

UNIT – III

5. **Software Design**: Software Design Process, Design Failures and Remedies
6. **Structured Analysis and Design tools:** Structured Analysis and Structured Design (SASD)-Goals and Benefits, Data Flow Diagrams (DFD), Data Dictionary(DD), Entity-Relationship diagram(ERD)

UNIT – IV

7. **Software Testing**: Objectives of software Testing, Principles of Software Testing, Software Testing Process, Black Box Testing, White Box Testing

8. **Software Quality and Maintenance**: Software quality attributes, Factors affecting Software Quality, Aims of Software Maintenance, Types of Software Maintenance, Software Maintenance Costs.

References:		
1.	Fairley	Software Engineering Concepts, McGraw Hill
2.	Lewis, T.G.	Software Engineering, McGraw Hill.
3.	Meyers, G.	The Art of Software Testing, Wiley-Inter-Science
4.	Hibbard, P.G	Constructing Quality Software, North Holland Publication
5.	Shere, Kenneth	Software Engineering & Management, Prentice Hall
6	Deutsch, Willis	Software Quality Engineering : A Total Technical and Management Approach, Prentice Hall.
7.	Doug Bell, Ian Murrey and John Pugh	Software Engineering: A Programming Approach, Prentice Hall
8.	Pressman:	Software Engineering, Tata McGraw Hill
9.	Ghazzi, Carlo	Fundamentals of Software Engineering, PHI

Paper Title : Computer Based Accounting
Paper Code : PGD - 2104 Time : 3 Hrs.

Max. Marks : 75
External : 60
Internal : 15

Course Duration : 60 Lectures of one hour each.

Objective : This course make students understand accounting principle and computerized accounting.

Note:

i. The Question Paper will consist of Four units.
ii. Examiner will set total of **NINE** questions comprising **TWO** questions from each unit and **ONE** compulsory question of short answer type covering whole syllabi.
iii. The students are required to attempt ONE question from each unit and the Compulsory question.
iv. All questions carry equal marks unless specified.

UNIT – I

Accounting: Principles, concepts and conventions, double entry system of accounting, introduction of basic books of accounts of sole proprietary concern, control accounts for debtors and creditors, closing of books of accounts and preparation of trial balance.

Final Accounts: Trading, profit and loss accounts and balance sheet of sole proprietary concern with normal closing entries.

UNIT – II

Introduction to Manufacturing Account, final accounts of partnership firms, limited company.

Introduction to Computerized Financial Accounting, coding logic and codes rquired,master files, Transaction files, Introduction to documents used data collection, processing of different files, outputs obtained

UNIT – III

Introduction to Computerized Inventory Control, types of inventory and associated documents, Inventory reports-nature and types, Inventory Control : ABC and Ageing analysis, Methods of Stock validation : LIFO, FIFO, actual bases, Interfacing Inventory with Financial Accounting, Purchasing Sub-Systems, Sales Order processing.

UNIT – IV

Introduction to Computerized Payroll & Invoicing Applications, Exposure to Structure, Processing and Reports, Interfacing these applications to financial Accounting.

Use of Accounting package Tally: Introduction to Tally, Groups, Ledgers, Vouchers, Orders, Cost Centers and Categories, Stock, Reports in Tally

References:	
Kellock, J., 1972	Elements of Accounting, Heinemann 1st ed., London
Rockley, L.E., 1970	Finance for the Non-Accountant 2nd. Edition, London : Business Book.
Levy and Sarnat, 1991	Principle of Financial Management, Prentice-Hall, International, PHI.
Arnold, 1984	Financial Accounting, Prentice-Hall, International (Paperback Edition).
Horngren and Sundem, 2010	Introduction to FinancialAccounting, Prentice-Hall International (Paperback Ediion) N.D: PHI
Murthy, U.S.	Management Finance, 2nd. Edition, Vakils Fefers & Simons Ltd
Van Home, James, C., 2004	Financial Management & Policy, Prentice Inc
Pandey, I.M., 1979	Financial Management, Vikas Publication, 6th Rev. ed., N. Delhi

Paper Title: Lab3 (Based on PGD- 2101)

Paper Code: PGD-PR-2105

Time: 3 Hrs.
Max. Marks : 75
External : 60
Internal : 15

This laboratory course will be based on PGD -2101.

Note: Paper will be set at the time of examination. Due weightage may be given to the practical note-book and Assignments in evaluation.

Paper Title: Lab4 (Based on PGD- 2102)

Paper Code: PGD-PR-2106

Time: 3 Hrs.
Max. Marks : 75
External : 60
Internal : 15

This laboratory course will be based on **PGD- 2102**

Note: Paper will be set at the time of examination. Due weightage may be given to the practical note-book and Assignments in evaluation.

Paper Title: Project Work.

Paper Code: PGD-2107 **Max. Marks: 100**

Major Project on any database application using any database development tool is to be developed/ Development of a Web Site using Database connectivity

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