VIKRAM UNIVERSITY, UJJAIN

INSTITUTE OF COMPUTER SCIENCE

PROGRAMME TITLE: POST GRADUATE DIPLOMA IN COMPUTER SCIENCE & APPLICATIONS IN WEB DEVELOPMENT AND SOFTWARE TESTING

[PGDCSA (WEB DEVELOPMENT AND SOFTWARE TESTING)

PROGRAMME OBJECTIVES:

The objective of the PGDCSA (Web Development and Software Testing) programme is to prepare graduate students for productive careers in the software industry and academia by providing an outstanding environment for teaching and research in the core areas of the discipline.

PGDCSA programme is aimed towards building prospective career in the field of Computer Applications. The programme is designed with the objective to provide knowledge and skills in the various aspects of Computer Applications and Programming. Students will also be trained in the latest trends of Information Technology.

This Post Graduate Diploma Program has been designed with a Two semester approach in mind. The first semester courses are aimed at skills development in computers using various technologies, the second semester, provides the specialization and the project work.

- Develop problem solving skills in interdisciplinary domains.
- Learn various programming languages Web Development and Software Testing to solve real world problems.
- Also learn RDBMS with SQL and ASP.NET with C#, Python domain for development of advance project.
- Focus on development of advanced knowledge and specific skills required for IT industry working in the domain of Web Design and Development with PHP

PROGRAMME OUTCOMES (POs)

At the end of this programme, PGDCSA (Web Development and Software Testing) student will be able to:

- Explore software, hardware, application systems and their interplay in Software Testing .
- Employ tools and technologies to implement Web Design and Development.
- Understanding the key concepts of Information Technology to improvise IT performance.

After Completion of the programme students are able to work as-

- Computer Programmer & Analyst.
- Interface Engineer.
- Java Developer.
- Testing Analyst.
- IT Consultant.
- Language Programmer
- Software Testing
- Web Application Developer

Vikram University, Ujjain

Board of studies in Computer science (Faculty of Engineering Science)

SYLLABUS of

PGDCSA (WEB DEVELOPMENT AND SOFTWARE TESTING) Programme

[Choice Based Credit System & Grading System (CBCS& GS)]

Exclusively for University Teaching Department (ICS, VUU)

ONE YEAR PGDCSA (WEB DEVELOPMENT AND SOFTWARE TESTING)

(FULL TIME) PROGRAMME of UTD (ICS,VUU)

(Effective from Academic Session 2020-2021)

VIKRAM UNIVERSITY,UJJAIN

Vikram University, Ujjain

PGDCSA (Web Development and Software Testing) - First Semester

Paper Code	Paper Name	Max. Marks
PGD-11	Fundamentals of Information Technology and PC Packages	100
PGD-12	Software Engineering and Project Management	100
PGD-13	Web Designing and Development	100
PGD-14	Data base Management System	100
PGD-15	Internetwork Applications	100
PGD-16	Practical based on PGD-11	50
PGD-17	Practical based on PGD-14	50
	Total	600

PGDCSA (Web Development and Software Testing) - Second Semester

Paper Code	Paper Name	Max. Marks
PGD-21	Operating System and System Software	100
PGD-22	Software Testing	100
PGD-23	RDBMS using SQL	100
PGD-24	ASP.NET using C#	100
PGD-25	Programming with Python	100
PGD-26	Major Project	100
	Total	600

PGDCSA

(Web Development and Software Testing)

First Semester

PAPER CODE	PAPER NAME	MAX. MARKS
PGD-11	Fundamentals of Information Technology and PC Packages	100

UNIT-1

Computer Fundamental: Characteristics of Computers, History of Computer, Evolution of Computers, Computer Generations and Types of Computer. **Components of a Computer:** Registers, instruction Set, Bus Architecture. **Computer Hardware:** Input Devices, Output Devices. **Storage Devices:** Primary Storage capacity, Memory Types, Memory Measuring Units, Secondary Storage. Software & Software Types, Computer Languages, Compiler, Interpreter. **Introduction of Programming:** Procedure Oriented Programming, Object oriented programming, Concepts used in OOP, Benefits of OOP, Main advantages and disadvantage of OOP, Applications of OOP, OOP vs. POP.

UNIT-2

Operating System Overview: Computer System Startup, Computer System Structure, computer system components, operating System classifications, operating System Services, Major Functions of operating system, Process Management. **Memory and File Management:** Memory Management Requirements, Swapping, Memory Management Techniques.

Introduction to DBMS: File System, Traditional File Oriented Approach, DBMS Advantages and Disadvantage, Role of DBMS, Three views of data, DBMS Architecture. Data Models, Data Independence.

UNIT-3

Introduction to computer Networks: computer Network Definition, Importance of Networking, Types of Networks, Network Topology, Advantages and Disadvantage of computer Networks, Applications of computer networks, Reference Model, Internet, introduction to Internet Technology.

MS windows: Introduction to MS windows; Features of windows; working with windows; My computer & Recycle bin; Desktop, Icons and windows Explorer; Screen description & working styles of windows; Dialog Boxes & Toolbar; working with files & Folders, Simple operations like copy, delete, moving of files and folders from one drive to another; Accessories and. windows settings using control panel-setting common devices using control panel, modem, printers, audio, network, fonts, creating users, internet settings, Start button & program lists ;Installing and uninstalling new Hardware & software program on your computer.

UNIT-4

MS word Basics - Introduction to MS office; introduction to MS- word; Features & area of use, working with MS- word; Menus & commands; Toolbars & Buttons; shortcut Menus, wizards & Templates, creating a New Document; Different page views and Layouts; Applying various Text Enhancements; working with - Styles, Text .Attributes; paragraph and Page.

Advanced Features of MS- word- Spell check, Thesaurus, Find & Replace; Headers & Footers: Inserting- Page Number, Pictures, Files, Auto texts, Symbols etc.; working with columns, Creation and working with Tables including conversion to and from text; Margins and Space management in Documents.

UNIT- 5

MS Excel: Introduction and area of use; working with MS Excel: concept of workbook and worksheet; Using Wizards; Various Data Types; Using different features with Data, Cell and Texts; Inserting, Removing & Resizing of Columns & Rows; Working with Data & Ranges; Different views of Worksheet; Column Freezing, Labels, Hiding, Splitting etc.

MS PowerPoint: Introduction and area of use; Working with MS PowerPoint; Creating a New Presentation; Working with Presentation; Using Wizards; Slides & its Different Views; Inserting, Deleting and Copying of Slides; Working with Notes, Handouts; Columns and Lists; Adding Graphics, Sounds and Movies to a slide; Working with PowerPoint Objects.

References:

1. Operating Systems Concepts, A. Silbrschaz, P.Galvin, G.Gagne, John Wiley & Sons
2. Object Oriented Programming in C++, Robert Lafore, Galgotia Publication.
3. Data base management systems vol. 1., Date C.J.
4. Fundamental of Computer Science & IT, Singh Umesh Kumar, Jain S., Maheshwari A., SSDN publications New Delhi,
5. Data Communications and Networks, Godbole A, Tata Mccraw-Hill Publications.
6. Windows XP Complete Reference. BPB publications
7. MS Office XP complete BPB Publication.

PGD-16
Practical based on PGD-l1

Windows:

l. Creating folder, cut copy, paste, managing file and folder in windows.
2. Arrange icons, set display properties.
3. Adding and removing software and hardware.
4. Setting date and time, screen saver and appearance.
5. Using windows accessories.
6. Settings of all control panel items.
7. Search file.
8. Desktop setting - new folder, rename, recycle bin operation, briefcase, control panel utility, Display properties, screen saver, background setting.

MS-Word

1. Creating & Editing Document.
2. Formatting Document.
3, Use of Auto-text, Autocorrect, Spelling and Grammar Tool,
4. Page Formatting, Page Border, Background.
5. Creation of MS-Word-Mail Merge, Macros, Tables.
6. Practice of Printing, page setup etc.

MS- PowerPoint

1. Creating, Manipulating & Enhancing Slides.
2. Inserting Organizational Charts, Excel Charts.
3. Using Word Art.
4. Putting Animations and Sounds.
5. Inserting Animated Pictures.
6. Inserting Recorded Sound Effect.

MS. Excel

1. Creating & Editing Worksheet.
2. Use Formulas and Functions,
3. Chart creation.

PAPER CODE	PAPER NAME	MAX. MARKS
PGD-12	Software Engineering and Project Management	PGD-12

UNIT-1

The Software Product and Software Process: Software Product and Process Characteristics, Software Process Models: Linear Sequential Model, Prototyping Model, RAD Model, Evolutionary Process Models like Incremental Model, Spiral Model, Component Assembly Model, RUP and Agile processes. Software Process customization and improvement, CMM, Product and Process Metrics.

UNIT-2

Requirement Elicitation, Analysis, and Specification Functional and Non-functional requirements, Requirement Sources and Elicitation Techniques, Analysis Modeling for Function-oriented and Object-oriented software development, Use case Modeling, System and Software Requirement Specifications, Requirement Validation, Traceability

UNIT-3

Software Design The Software Design Process, Design Concepts and Principles, Software Modeling and UML, Architectural Design, Architectural Views and Styles, User Interface Design, Function-oriented Design, SA/SD Component Based Design, Design Metrics

UNIT-4

Software Analysis and Testing Software Static and Dynamic analysis, Code inspections, Software Testing Fundamentals, Software Test Process, Testing Levels, Test Criteria, Test Case Design, Test Oracles, Test Techniques, Black-Box Testing, White-Box Unit Testing and Unit Testing Frameworks, Integration Testing, System Testing and other Specialized Testing, Test Plan, Test Metrics, Testing Tools. , Introduction to Object-oriented analysis.

UNIT-5

Software Maintenance & Software Project Measurement Need and Types of Maintenance, Software Configuration Management (SCM), Software Change Management, Version Control, Change control and Reporting, Program Comprehension Techniques, Re-engineering, Reverse Engineering, Tool Support. Project Management Concepts, Feasilibility Analysis, Project and Process Planning, Resources Allocations, Software efforts, Schedule, and Cost estimations, Project Scheduling and Tracking, Risk Assessment and Mitigation, Software Quality Assurance (SQA). Project Plan, Project Metrics.

References:

1. Pankaj Jalote ,"An Integrated Approach to Software Engineering", Narosa Pub, 2005
2. Rajib Mall, "Fundamentals of Software Engineering" Second Edition, PHI Learning
3. R S. Pressman ,"Software Engineering: A Practitioner's Approach", Sixth edition 2006, McGraw-Hill. 4. Sommerville,"Software Enginerring",Pearson Education.
4. Richard H.Thayer,"Software Enginerring & Project Managements",Willey India

PAPER CODE	PAPER NAME	MAX. MARKS
PGD-13	Web Designing and Development	100

UNIT-1

HTML and Graphics : HTML Tag Reference, Global Attributes, Event Handlers, Document Structure Tags, Formatting Tags, Text Level formatting, Block Level formatting, List Tags, Hyperlink tags, Image and Image maps, Table tags, Form Tags, Frame Tags, Executable content tags. **Imagemaps :** What are Imagemaps? Client-side Imagemaps, Server-side Imagemaps, Using Server-side and Client-side Imagempas together, alternative text for Imagemaps.

UNIT-2

Tables : Introduction to HTML tables and their structure, The table tags, Alignment, Aligning Entire Table, Alignment within a row, Alignment within a cell, Attributes, Content Summary, Background color, Adding a Caption, Setting the width, Adding a border, Spacing within a cell, Spacing between the cells, spanning multiple rows or columns, Elements that can be placed in a table, Table Sections and column properties, Tables as a design tool.

Frames : Introduction to Frames, Applications, Frames document, The <FRAMESET> tag, Nesting<FRAMESET> tag, Placing content in frames with the <FRAM> tag, Targeting named frames, Creating floating frames, Using Hidden frames,

UNIT-3

Forms: Creating Forms, The <FORM> tag ,Named Input fields, the input <INPUT> tag, Multiple lines text windows, Drop down and list boxes, Hidden, Text, Text Area, Password, File Upload, Button, Submit, Reset, Radio, Checkbox, Select, Option, Forms and Scripting, Action Buttons, Labelling input files, Grouping related fields, Disabled and read-only fields, Form field event handlers, Passing form data.

UNIT-4

PHP : Why PHP and MySQL?, Server-side web scripting, Installing PHP, Adding PHP to HTML, Syntax and Variables, Passing information between pages, Strings, Arrays and Array Functions, Numbers, Basic PHP errors / problems.

UNIT-5

Advanced PHP and MySQL : PHP/MySQL Functions, Displaying queries in tables, Building Forms from queries, String and Regular Expressions, Sessions, Cookies and HTTP, Type and Type Conversions, E-Mail.

XML : Introduction to XML, Anatomy of an XML, document, Creating XML Documents, Creating XML DTDs, XML Schemas, XSL.

References:

1. Web Design The complete Reference, Thomas Powell, Tata McGrawHill
2. HTML and XHTML The complete Reference, Thomas Powell, Tata McGrawHill
3. JavaScript 2.0 : The Complete Reference, Second Edition by Thomas Powell and Fritz Schneider
4. PHP : The Complete Reference By Steven Holzner, Tata McGrawHill

PAPER CODE	PAPER NAME	MAX. MARKS
PGD-14	Data base Management System	100

UNIT-1

DBMS Concepts and architecture Introduction, Database approach v/s Traditional file accessing approach, Advantages, of database systems, Data models, Schemas and instances, Data independence, Data Base Language and interfaces, Overall Database Structure, Functions of DBA and designer, ER data model:Entitles and attributes, Entity types, Defining the E-R diagram,Concept of Generalization, Aggregation and Specialization. transforming ER diagram into the tables. Various other data models object oriented data Model, Network data model, and Relational data model, Comparison between the three types of models.

UNIT-2

Relational Data models: Domains, Tuples, Attributes, Relations, Characteristics of relations, Keys, Key attributes of relation, Relational database, Schemas, Integrity constraints. Referential integrity, Intension and Extension, Relational Query languages:SQL-DDL, DML, integrity constraints, Complex queries, various joins, indexing, triggers, ssertions,Relational algebra and relational calculus, Relational algebra operations like select, Project,Join, Division, outer union. Types of relational calculus i.e. Tuple oriented and domain oriented relational calculus and its operations.

UNIT-3

Data Base Design: Introduction to normalization, Normal forms, Functional dependency, Decomposition, Dependency preservation and losless join, problems with null valued and dangling tuples, multivalued dependencies.Query Optimization: Introduction, steps of optimization, various algorithms to implement select, project and join operations of relational algebra, optimization methods: heuristic based, cost estimation based.

UNIT-4

Transaction Processing Concepts: - Transaction System, Testing of Serilizability, Serializability of schedules, conflict & view serializable schedule, recoverability, Recovery from transaction failures. Log based recovery. Checkpoints deadlock handling.Concurrency Control Techniques: - Concurrency Control, locking Techniques for concurrency control, time stamping protocols for concurrency control, validation based protocol, multiple granularity. Multi version schemes, Recovery with concurrent transaction.

UNIT-5

Study of Relational Database Management Systems through Oracle/Postgres SQL/MySQL: Architecture, physical files, memory structures, background process. Concept of table spaces, segments, extents and block. Dedicated server, multi threaded server. SQL queries, Data extraction from single, multiple tables equi-join, non equi-join, self-join, outer join. Usage of like, any, all, exists, in Special operators. Hierarchical queries, inline queries, flashback queries. Introduction of ANSI SQL, anonymous block, nested anonymous block, branching and looping constructs in ANSI SQL. Cursor management: nested and parameterized cursors, Oracle exception handling mechanism. Stored procedures, in, out, in out type parameters,usage of parameters in procedures. User defined functions their limitations. Triggers, mutating errors, instead of triggers.

References:

1. Date C J, “An Introduction To Database System”, Pearson Educations
2. Korth, Silbertz,Sudarshan, “Fundamental of Database System”, McGraw Hill
3. Rob, “ Data Base System:Design Implementation & Management”, Cengage Learninig
4. Elmasri, Navathe, “Fundamentals Of Database Systems”, Pearson Educations

5 . Atul Kahate , “ Introduction to Database Management System”, Pearson Educations

Lab Assignments: PGD-14

1. Delete duplicate row from the table.
2. Display the alternate row from table.
3. Delete alternate row from table.
4. Update multiple rows in using single update statement. 5. Find the third highest paid and third lowest paid salary.
5. Display the 3rd, 4th, 9th rows from table.
6. Display the ename, which is start with j, k, l or m.
7. Show all employees who were hired the first half of the month.
8. Display the three record in the first row and two records in the second row and one record in the third row in a single sql statements.
9. Write a sql statements for rollback commit and save points.
10. Write a pl/sql for select, insert, update and delete statements.
11. Write a pl/sql block to delete a record. If delete operation is successful return 1 else return 0. 13. Display name, hire date of all employees using cursors.
14. Display details of first 5 highly paid employees using cursors.
15. Write a database trigger which fires if you try to insert, update, or delete after 7'o' clock.

PAPER CODE	PAPER NAME	MAX. MARKS
PGD-15	**Internetwork Applications**	**100**

UNIT 1

TCP/IP Model: Comparison with ISO -OSI reference model. TCP/IP Protocol Family : Transport : Transmission Control Protocol, TCP Header Format, UDP Routing : IP Addressing, limitations , Brief overview of IPV6 i.e. the next generation IP, IP header format. Network Addresses: ARP, Domain Name System (DNS), RARP.

UNIT 2

User Services /Applications : File Transfer Protocol (FTP) : Channel Connection, Command : internal & Users, Connections, debugging option with FTP, third party transfer, anonymous FTP, FTP Servers, TFTP, Telnet, BOOTP, Gateway Protocols : brief overview of EGP, CGP & IGP, Other protocols : NFS, NIS, RPC, SMTP, SNMP.

UNIT 3

Internet : Uses, Goals/advantages, WWW, Intranet : Goals, benefits, how TCP/IP, bridges, routers, E-mail works in an intranet, Intranet and WWW : IP Networks, HTTP, Commands.

UNIT 4

Overview of an intranet security system : Security and access policies, Server Security, Firewalls, General Security. WAN : overview of DDS, T-1, T-3 , Frame Relay, Sonet, SMDS, ATM Services, WAN implementation, Connecting the LANs : Bridges, routers.

UNIT 5

Intranet applications: Overview of Web-Servers: essential & desirable features of a web server: authentication, authorization and encryption; proxy services; Sub-netting an intranet.

References:

1. Douglas J. Comer : Internetworking with TCP/IP (Vol I)
2. Richard Stevens : Unix Networking

PGDCSA

(Web Development and Software Testing)

Second Semester

PAPER CODE	PAPER NAME	MAX. MARKS
PGD-21	Operating System and System Software	100

UNIT – 1:

System Software: Machine, Assembly and High-Level Languages; Compilers and Interpreters; Loading, Linking and Relocation; Macros, Debuggers.

Basics of Operating Systems: Operating System Structure, Operations and Services; System Calls, Operating-System Design and Implementation; System Boot.

UNIT – 2:

Process Management: Process Scheduling and Operations; Interprocess Communication, Communication in Client–Server Systems, Process Synchronization, Critical-Section Problem, Peterson's Solution, Semaphores, Synchronization.

Threads: Multicore Programming, Multithreading Models, Thread Libraries, Implicit Threading, Threading Issues.

UNIT – 3:

CPU Scheduling: Scheduling Criteria and Algorithms; Thread Scheduling, Multiple-Processor Scheduling, Real-Time CPU Scheduling.

Deadlocks: Deadlock Characterization, Methods for Handling Deadlocks, Deadlock Prevention, Avoidance and Detection; Recovery from Deadlock.

UNIT – 4:

Memory Management: Contiguous Memory Allocation, Swapping, Paging, Segmentation, Demand Paging, Page Replacement, Allocation of Frames, Thrashing, Memory-Mapped Files.

UNIT – 5:

Storage Management: Mass-Storage Structure, Disk Structure, Scheduling and Management, RAID Structure.

References:

1. Silberschatz ,"Operating system", Willey Pub.
2. Stuart,"Operating System Principles, Design & Applications",Cengage Learning
3. Tannanbaum, "Modern operating system",PHI Learning
4. Dhamdhere, "Operating System",TMH.
5. Achyut S Godbole,"Operating System", TMH.

PAPER CODE	PAPER NAME	MAX. MARKS
PGD-22	Software Testing	100

UNIT- 1

Testing as an Activity ,Testing as a Process ,Testing axioms , Basic definitions , Software Testing Principles ,The Tester‟s Role in a Software Development Organization , Origins of Defects – Cost of defects , Defect Classes – The Defect Repository and Test Design,Defect Examples , Developer/Tester Support of Developing a Defect Repository , Defect Prevention strategies.

UNIT- 2

Concepts, issues and techniques- test activities, management and automation. Coverage and usage testing based on checklist, input domain portioning and boundary testing, **object oriented testing:** testing OOA and OOD models, object oriented testing strategies, test case design for OO software, testing methods applicable at the class level, interclass test case design. Web application testing, debugging, security & reliability.

UNIT-3

Software Testing: Verification and Validation; Error, Fault, Bug and Failure; Unit and Integration Tesing; White-box and Black-box Testing; Basis Path Testing, Control Structure Testing, Deriving Test Cases, Alpha and Beta Testing; Regression Testing, Performance Testing, Stress Testing.

UNIT-4

Software Testing Methods: Software Testing Fundamentals, Test Case Design, Software Testing strategies: Strategic issue, Validation Testing, System Testing.
software Process and Project Metrics: Measures, Metrics and indicators. Metric in the Process and Project Domains, Software Measurement Metrics of Software equality.

UNIT-5

Programming style and program quality: simple style rules, comment statements, program quality, quantifying program quality, **Software quality and quality Assurance:** Principle of Software Quality Assurance (SQA), Applying SQA to software project, proven factors for SQA success, SQA during software requirements, SQA during software design phase, SQA during software code and test, Advance quality engineering topics.
Human factors in software engineering: Human factors history, HCL requirements and design process, HCL testing.

References:

1. Ali Behforooz and Frederick J. Hudson, Software Engineering Fundamentals, Oxford University Press
2. JeffTain, Software Quality Engineering: Testing, Quality Assurance and Quantifiable improvement, Willy Pub.
3. Aditya Mathur, Foundation of Software Testing 1/e, Pearson Education
4. Paul C. Jorgensen, Software Testing, A Craftsman’s Approach, Second Edition, CRC Press

PAPER CODE	PAPER NAME	MAX. MARKS
PGD-23	RDBMS using SQL	100

UNIT-1

Structured Query Language : Writing Basic SQL Select Statements, Restricting and Sorting Data, Single-Row Functions, Joins (Displaying Data from Multiple Tables), Aggregating Data using Group Functions, Sub-queries, Manipulating Data, Creating and Managing Tables, Including Constraints, Creating Views, Creating other Database Objects (Sequences, Indexes and Synonyms)

UNIT-2

Advanced SQL : Controlling user Access, using SET operators, Data Time Functions, Enhancements to Group by clause (cube, Rollup and Grouping), Advanced Sub-queries (Multiple column Sub-queries, Sub-queries in FROM clause, Scalar and correlated Sub queries), WITH Clause, Hierarchical retrieval.

UNIT-3

PLSQL : Introduction, Overview and benefits of PL/SQL, Subprograms, types of PL/SQL blocks, Simple Anonymous Block, Identifiers, types of identifiers, Declarative Section, variables, Scalar Data Types, The % Type attribute, bind variables, sequences in PL/SQL expressions, Executable statements, PL/SQL block syntax, comment the code, deployment of SQL functions in PL/SQL, Convert Data Types, operators. Interaction with the oracle server, Invoke SELECT Statements in PL/SQL, SQL cursor concept, Data Manipulation in the Server using PL/SQL, SQL Cursor Attributes to obtain Feedback on DML, Save and discard transactions.

UNIT-3

Control Structures : Conditional processing using IF statements and CASE statements, Loop Statement, while loop statement, for loop statement, the continue statement composite data types : PL/SQL records, The % ROWTYPE attribute, insert and update with PL/SQL records, INDEX by tables, INDEX BY Table Methods, Use INDEX BY Table of Records, Explicit Cursors, Declare the Cursor, Open the Cursor, Fetch data from the Cursor, Close the Cursor, Cursor FOR loop, The % NOTFOUND and % ROWCOUNT Attributes, the FOR UPDATE Clause and WHERE CURRENT Clause, Exception Handling, Handle Exceptions with PL/SQL.

UNIT-4

Dynamic SQL : The Execution Flow of SQL, Declare Cursor Variables, Dynamically Executing a PL/SQL Block, Configure Native Dynamic SQL to Compile PL/SQL Code, invoke DBMS_SQL Package, Implement DBMS_SQL with a Parameterized DML Statement, Dynamic SQL Functional Completeness, Triggers, the Triggers, Create DML Triggers using the CREATE TRIGGER Statement and SQL Developer, Identify the Trigger Event Types, Body, and Firing (Timing), Statement Level Triggers and Row Level Triggers, Create Instead of and Disabled Triggers, Manage, Test and Remove Triggers.

References:-

1. Murach's Oracle SQL and PLSQL by Joel Murach, Murach and Associates.
2. Oracle Database 11g PL/SQL Programming Workbook, ISBN : 9780070702264, By : Michael 3. McLaughlin, John Harper, Tata McGrawHill.
3. Oracle PL/SQL Programming, Fifth Edition By Steven Feuerstein, Bill Pribyl

PAPER CODE	PAPER NAME	MAX. MARKS
PGD-24	ASP.NET using C#	100

UNIT-1

Overview of ASP.NET framework, Understanding ASP. NET Controls, Applications, Web servers, installation of IIS. web forms, web form controls server controls, client controls. web forms & HTML, Adding controls to a web form, Buttons, Text Box, Labels, Checkbox, Radio Buttons, List Box, etc. Running a web Applications, creating a multiform web project.

UNIT-2

Form Validation: client side validation, server Side validation, validation controls: Required Field, Comparison, Range, Calendar control, Ad rotator Control, internet Explorer Control. State management-View state, Session state, Application state.

UNIT-3

Architecture of ADo.NET, connected and Disconnected Database, create connection using ADO.NET Object Model, Connection Class, Command Class, Data Adapter Class, Dataset Class. Display data on data bound Controls and Data Grid. Database Accessing on web applications: Data Binding concept with web, creating data grid, Binding standard web server controls. Display data on web form using Data bound control.

UNIT-4

Writing datasets to XML, Reading datasets with XML. Web services: Introduction, Remote method call using SOAP, web service description language, building & consuming web service, Web Application deployment.

UNIT-5

Overview of C#, C# and .NET, similarities & differences from JAVA, Structure of C# program Language features: Type system, boxing and un-boxing, flow controls, classes, interfaces, Serialization, Delegates, Reflection.

References:

1. VB.NET Black Book by stevenholzner - dreamtech
2. ASP.NET Unleashed
3. C# programming- wrox publication
4. C# programming Black Book by Mata telles

PAPER CODE	PAPER NAME	MAX. MARKS
PGD-25	Programming with Python	100

UNIT 1

Introduction: check icon History, Features, Setting up path, Variable and Data Types, Operator. **Conditional Statements:** if, if-else, if-elif, nested if-else and Looping: for, while, nested loops with break, continue and pass keyword.

String Manipulation: Accessing Strings, Basic Operations, String slices, Function and Methods. **Functions:** Defining and Calling of a function, Types of functions, Function Arguments, Anonymous functions, Global and local variables.

UNIT-2

Collection: list, tuple , Dictionaries. Introduction, Accessing values, Working, Properties, Functions and Methods.

Modules: Importing module, Math module, Random module, os module, date-time module, calendar module, Packages, user defined module, introduction of pip. **IO:**Printing on screen and Reading data from keyboard, Opening and closing file, Reading and writing files, Functions.

UNIT-3

Exception Handling: Except, Try, else, finally clause, User Defined Exceptions, raise user- defined exception, nested try-except.

OOPs concept: Class and object, Attributes, Inheritance, Overloading, Overriding, Data hiding, final and abstract class.

Database: Introduction, Connections with MYSQL, Executing queries, Transactions) web-designing: HTML, CSS and JAVA SCRIPT.

UNIT-4

CGI: Introduction, Architecture, CGI environment variable, GET and POST methods. Application using CGI: signup, login and session tracking with server side programming.

UNIT-5

DJANGO: working of MVT, Environment setting and installation, creating a Project, Apps Life Cycle, Admin Interface, Views, URL Mapping,

Template System: DTL and JINJA. Models, Page Redirection, Form Processing, project with signup and login.

References:

1. Programming and Problem Solving with Python (Ashok Namdev Kamthane and Amit Ashok Kamthane) McGraw Hill publication
2. Let Us Python (Kanetkar Yashavant) BPB Publication
3. Python Complete Refernce (Brown Martin C.) McGraw Hill publication
4. Python Programming A Modular Approach (Naveen and Kumar and Taneja Sheetal) PEARSON
5. Beginning Django (Rubio Daniel) Apress