

GANPAT UNIVERSITY									
FACULTY OF COMPUTER APPLICATIONS									
Programme	MCA				Branch/Spec.	Computer Applications			
Semester	II				Version	1.0.0.0			
Effective from Academic Year	2015-16				Effective for the batch Admitted in	June 2015			
Subject code	P12A1DS		Subject Name		Data Structure				
Teaching scheme					Examination scheme (Marks)				
(Per week)	Lecture(DT)		Practical(Lab.)		Total	CE	SEE	Total	
	L	TU	P	TW					
Credit	2	0	1	0	3	Theory	40	60	100
Hours	2	0	2	4	7	Practical	20	30	50
Pre-requisites:									
Must require basic knowledge of Programming Language.									
Learning Outcome:									
To select appropriate method to sort, search and store data using data structure concepts									
Theory syllabus									
Sect ion	Content								Hrs
1	Overview of Data Structure (03) Introduction to data structure, (01) Classification of Data Structure – Primitive data Structure, Non Primitive Data Structure, (01) Linear Data Structure, Non Linear Data Structure(01) Linear Data Structures (17) Introduction to Stack, Operations of Stack(3), Applications of Stack – Polish Notation (Prefix, Infix, Postfix)(5), Introduction to Queue, Simple Queue, Circular Queue, Double Ended Queue, Priority Queue (5) Introduction to Linked List, Singly Linked List, Doubly Linked List, Circular Linked List, Doubly Circular Linked List (4)								20
2	Non Linear Data Structures (08) Terminologies of Tree, General Tree, Binary Tree and its Representation, Binary Search Tree, (04) Operations of Binary Search Tree – Insert, Delete, Search, Traversal – PreOrder, InOrder, PostOrder,(04) Searching & Sorting (08) Introduction, Types of Searching – Sequential Search, Binary Search (04) Introduction, Types of Sorting – Selection, Bubble, Insertion, Shell (04)								16
Practical content									
List of programs specified by the subject teacher based on above mentioned topics									
Text Books									
1	Classic Data Structures by Debasis Samanta, PHI Publications								
Reference Books									
1	Data Management and File Structures By Mary E. S. Loomis-PHI Publications								
2	An Introduction to Data Structure with Applications by Tremblay J. and Sorenson,Publisher- Tata McGraw-Hill international Edition, 1087								
3	Expert Data Structures with C by R.B.Patel, Khanna Publications, Delhi, India								
4	Data Structure Using C & C++ By Langsam, Yedidyah and Augenstein-PHI Publication								
Question Paper Scheme:									

	<p>University Examination Duration: 3 Hours</p> <p>Note for Examiner: -</p> <p>(I) Questions 1 and 4 are compulsory with no options.</p> <p>(II) Internal options should be given in questions 2, 3, 5 and 6.</p> <p>SECTION - I Q.1 –8 Marks Q.2 –11 Marks Q.3 –11 Marks</p> <p>SECTION - II Q.4 –8 Marks Q.5 –11 Marks Q.6 –11 Marks</p>
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Semester		II				Version		1.0.0.0	
Effective from Academic Year			2015-16			Effective for the batch Admitted in			June 2015
Subject code		P12A2OOP		Subject Name		Object Oriented Programming Concept			
Teaching scheme					Examination scheme (Marks)				
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	3	0	2	0	5	Theory	40	60	100
Hours	3	0	4	0	7	Practical	20	30	50
Pre-requisites:									
Basic concepts of Programming Language									
Learning Outcome:									
Able to implement the OOPS concepts									
Theory syllabus									
Sect ion	Content								Hrs
1	Introduction to Java and Basic Concepts: (13) Introduction to Java(6) Object-Oriented Paradigm (2) Basic Concepts: Data Abstraction, Encapsulation, Inheritance, Polymorphism, Dynamic Binding (1)								

	<p>What is Java, JDK and JRE ? (1) The main() method, A First Java Program, Compiling and Interpreting Applications (2) Data types and Variables: (4) Primitive Datatypes, Declarations and scope (1) Variables and constants (1) Numeric Literals, Character Literals, String, String Literals (1) Arrays, Non-Primitive Datatypes (1) Operators and Expressions: (3) Expressions, Assignment Operator, Arithmetic Operators, Relational Operators, Logical Operators, Increment and Decrement Operators, Operate-Assign Operators (+=, etc.), The Conditional Operator, Operator Precedence. (2) Implicit Type Conversions , The Cast Operator , Generic type casting (1) Decision Making, Branching and Looping (4) If..Else statements, Nesting of IF.. Else statements, Else..if ladder. Switch, break and continue Statement (2) While loop, do-while, for loop (1) Enhanced for loop (1) Introduction to Class, Method and Object: (8) Creating class and Methods (1) Calling Methods, Defining Methods, Method Parameters, Creating objects, new keyword, Scope (2) Constructors, destructors and garbage collector (1) Accessing class members and member functions, method overloading, method overriding (1) Static, final, abstract methods and classes, interface (1) Public, private, protected, default, friend access (1) Inheritance : Extending classes, Subclass, Multilevel inheritance, Hierarchical inheritance (1)</p>	
2	<p>Array, String, Vectors, Interfaces (11)</p> <ul style="list-style-type: none"> • Arrays, Strings, Vectors: (7) Creating and initializing array, Two-dimensional array, Variable size array (3) String, String array, String methods, StringBuffer class (2) Vectors (1) ,Wrapper classes , autoboxing and Unboxing (1) • Interfaces : (4) Introduction, Defining and extending interfaces Implementing interfaces (2) Accessing interface variables, Concept of multiple inheritance (2) • Packages (3) Using system package, Naming conventions, creating packages, accessing package (2) Static import (1) • Managing errors and Exceptions: (5) 	

	Types of error, Compile time and run time errors (1) Exceptions, Exception handling code and syntax (1) Try-catch blocks, multiple catch statements. Finally block (2) User-defined exceptions, difference between throw and throws (1)	
Practical content		
List of programs specified by the subject teacher based on above mentioned topics		
Text Books		
1	Programming with Java by E. Balagurusamy, Tata McGraw Hill Publication	
Reference Books		
1	Programming java by Sachin Malhotra & Saurabh Chaudhary, Oxford Publication	
2	Head first java by Kathy Sierra & Bert Bates, O'Reilly	
3	Complete reference Java by Herbert Schildt, Tata McGraw Hill	
4	The Unified Modeling Language User Guide By Booch, Rumbaugh, Jacobson Low Price Edition Publication	
Question Paper Scheme:		
University Examination Duration: 3 Hours		
Note for Examiner: -		
(I) Questions 1 and 4 are compulsory with no options.		
(II) Internal options should be given in questions 2, 3, 5 and 6.		
SECTION - I		
Q.1 –8 Marks		
Q.2 –11 Marks		
Q.3 –11 Marks		
SECTION - II		
Q.4 –8 Marks		
Q.5 –11 Marks		
Q.6 –11 Marks		

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Effective from Academic Year			2015-16			Effective for the batch Admitted in			June 2015
Subject code		P12A3IWDT		Subject Name		Introduction to web development tool			
Teaching scheme					Examination scheme (Marks)				
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	3	0	1	0	4	Theory	40	60	100
Hours	3	0	2	0	5	Practical	20	30	50
Pre-requisites:									
Basic Knowledge of XHTML, CSS2.0 and Java Script.									
Learning Outcome:									
Students will be crafted as a Web Designer (HTML & CSS developer). As well as they'll get huge environment to work with jQuery.									
Theory syllabus									
Sect ion	Content								Hrs
1	HTML5 Basic: (14) What is HTML5?, New features of HTML5, Browser support(1) New Elements in HTML5, (3)The New <canvas> Element(1), New Media Elements(1), New Form Elements(1), New Semantic/Structural Elements(3), Removed Elements, HTML5 Semantic Elements(2) HTML5 New Input Types, HTML5 form elements, HTML 5 form attributes(2) HTML5 Advanced (11) HTML5 canvas(2), HTML5 SVG (Scalable Vector Graphics)(2), HTML5 media: embedding video on web(2), embedding Audio(1) HTML5 API: Geolocation, handling errors and rejections, Drag and Drop elements, HTML5 web storage object, local storage object, sessionStorage object, Application cache, updating cache, cache manifest file (4)								25
2	CSS3 (10) CSS3 introduction (1), Styling tables with Pseudoclassess(2), Making Links Printable with: after and content(2), Creating multi column Layouts(2), Building mobile interface with media queries(2), 2D transforms, 3D transforms(1) jQuery (12) Loading jquery to web pages(1), Jquery basic syntax(1), methods to modify content (1), creating elements(2), jquery selectors(2), event methods(2), effects: hide/show, fade, slide, animate, callback, , stop() (3)								22
Practical content									
List of programs specified by the subject teacher based on above mentioned topics									
Text Books									
1	HTML5 & CSS3 by Brian P. Hogan								
Reference Books									
1									

Question Paper Scheme:

University Examination Duration: 3 Hours

Note for Examiner: -

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(II) Internal options should be given in questions 2, 3, 5 and 6.

SECTION - I

Q.1 –8 Marks

Q.2 –11 Marks

Q.3 –11 Marks

SECTION - II

Q.4 –8 Marks

Q.5 –11 Marks

Q.6 –11 Marks

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Semester		II			Version		1.0.0.0		
Effective from Academic Year			2015-16		Effective for the batch Admitted in			June 2015	
Subject code		P12A4NT	Subject Name		Networks Technology				
Teaching scheme					Examination scheme (Marks)				
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	3	0	-	-	3	Theory	40	60	100
Hours	3	0	-	-	3	Practical	-	-	-
Pre-requisites:									
Require basic knowledge of computer.									
Learning Outcome:									
Getting the knowledge of how data is sent from one device through different layers and protocols.									
Theory syllabus									
Sect ion	Content								Hrs
1	<p>Introduction To Computer Network (3) Need of Computer Network, Advantages of Computer Network, Uses of Computer Network(1), Network Models, Categories of Networks and Internetworks(1), Line Configurations, Network Topologies (Bus, Star, Ring, Star Bus, Star Ring and Physical Mesh) (1)</p> <p>Study of Reference Models (6) Study of Reference Models, Need of Layers, Design Issues of Layers, ISO/OSI Model(3), TCP/IP Model(1), A Comparison of OSI and TCP Reference Model(1), Asynchronous Transfer Mode (ATM) (1)</p> <p>Network Concepts And Components (5) Network Concepts : Wireless Networks, Layered Approach, Interfaces, Services, Protocols(1), Brief Study of X.25 Protocol(1), Intranet and Extranet, Network Components : Cabling and Connector Standards(1), Network Interface Card, Concentrators, Hubs, Repeaters, Gateways(1),SDN,ridges/Switches,Routers(1)</p>								14
2	<p>TCP/IP protocols (10) IP Addressing, sub netting (2), ARP, IARP, ICMP, IGMP, UDP, TCP, Client- server model, BOOTP, DHCP, DNS, Telnet, FTP, TFTP, SMTP, SNMP, HTTP, WWW. (08)</p> <p>Practical Approaches (11) 1. How to make a LAN Cable with RJ45 connector and crimping tool (Straight cabling and Cross cabling). (1) 2. How to configure an IP address of LAN computers. (1) 3. How to use a LAN computer for sharing a printer and file sharing.(2) 4. How to configure a Wireless Access Point to broadcast Internet(2)</p>								21

	<p>5. How to configure a server operating system with DNS & DHCP. (2)</p> <p>6. How to give a remote support to another computer a. For LAN "Remote desktop connection" b. Internet connected pc "Team Viewer", "VNC", etc.(2)</p> <p>7. Firewall configuration. (1)</p>	
Practical content		
N. A.		
Text Books		
1	Computer Network, S.S.Shinde, New Age International (P) Limited, Publishers	
Reference Books		
1	B.A. Forouzan: Data Communication and Networking, Tata McGraw Hill. Web	
	<p>Question Paper Scheme:</p> <p>University Examination Duration: 3 Hours</p> <p>Note for Examiner: -</p> <p>(I) Questions 1 and 4 are compulsory with no options.</p> <p>(II) Internal options should be given in questions 2, 3, 5 and 6.</p> <p>SECTION - I</p> <p>Q.1 –8 Marks</p> <p>Q.2 –11 Marks</p> <p>Q.3 –11 Marks</p> <p>SECTION - II</p> <p>Q.4 –8 Marks</p> <p>Q.5 –11 Marks</p> <p>Q.6 –11 Marks</p>	

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Effective from Academic Year			2015-16		Effective for the batch Admitted in			June 2015	
Subject code		P12A5DB1	Subject Name		Database Management System-I				
Teaching scheme					Examination scheme (Marks)				
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	3	0	2	0	5	Theory	40	60	100
Hours	3	0	4	0	7	Practical	20	30	50
Pre-requisites:									
Basic knowledge of computer									
Learning Outcome:									
To design the database according to its principles									
Theory syllabus									
Sect ion	Content								Hrs
1	Database Concepts and Architecture (7 sessions) <ul style="list-style-type: none"> • Introduction of Database, Benefits of Database Approach(01) • Structure of the Database System, Types of Database Users and Roles of Database Administrator(01) • Introduction to RDBMS?, Codd's rules for RDBMS, DBMS Vs. RDBMS (02) • Overview of Database System Architecture, Introduction to Distributed Database(02) • Database terms: Relation, Entity, Attribute, Attribute Value, Primary key, Candidate key, Alternate key (01) Normalization & Transaction Control (15 sessions) Normalization(4) <ul style="list-style-type: none"> • First, second and third normal forms (2) • Boyce / Codd normal form(1) • multi-valued dependencies and fourth normal form (1) • Join dependencies and fifth normal form Transaction Control(11) <ul style="list-style-type: none"> • Transaction concepts, properties of transactions(02) 								33

	<ul style="list-style-type: none"> • serializability of transactions, testing for serializability(02) • System recovery, Two- Phase Commit protocol (02) • Recovery and Atomicity, Log-based recovery, concurrent executions of transactions and related problems(03) 	
2	<ul style="list-style-type: none"> ➤ Interactive SQL Part – I (24 Sessions) <ul style="list-style-type: none"> • Introduction to SQL, Logging into SQL * Plus, Naming Rules and Conventions, Data Types (03) • Creating a Table, Viewing data in the tables, Sorting data in a table, Delete operations, Updating contents of a table, Modifying the structure of tables, Renaming, Truncating and Destroying tables (10) • Examining objects created by a user (01) • Constraints (I/O and Business rule constraints) (04) • DDL, DML, DCL/TCL, DQL(Select Clause) (01) • Computations on table data(Range Searching Pattern Matching) (02) ➤ User Management : Creating a new user in Oracle, Assigning rights to the user & changing the password of an existing user(01) ➤ Security Management using SQL <ul style="list-style-type: none"> • Security using Grant and Revoke Statements (02) ➤ Interactive SQL Part – II (14 sessions) (Book 3 and Book 4) <ul style="list-style-type: none"> • Oracle Built-in Functions (Single row Functions and Group Functions) (03) • Set Operators, Sub query(03) • Group by Clause, Having Clause, Group by using ROLLUP and CUBE operator, EXISTS/ NOT EXISTS operator (03) • Different Types of Joins(02) • Index, View, Sequence(03) • Setting environment using SET command(01) ➤ Advance features in SQL * Plus (02) <ul style="list-style-type: none"> • Code a tree structured Query, Code a Matrix Report in SQL , Dump function(02) 	24
Practical content		
List of programs specified by the subject teacher based on above mentioned topics		
Text Books		
1	Database System Concepts- Silberschatz, Korth, Sudarshan, Fifth Edition, McGraw Hill An	
Reference Books		
1	Introduction to Database Systems by C.J.Date (Eighth Edition)	
2	Database Systems Using ORACLE by Nilesh Shah (Second Edition), Prentice Hall of India SQL	
3	PL/SQL The Programming Language of Oracle by Ivan bayross(4 th Edition), BPB Publications	
Question Paper Scheme:		

University Examination Duration: 3 Hours

Note for Examiner: -

(I) Questions 1 and 4 are compulsory with no options.

(II) Internal options should be given in questions 2, 3, 5 and 6.

SECTION - I

Q.1 –8 Marks

Q.2 –11 Marks

Q.3 –11 Marks

SECTION - II

Q.4 –8 Marks

Q.5 –11 Marks

Q.6 –11 Marks

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Semester	II				Version	1.0.0.0			
Effective from Academic Year	2015-16				Effective for the batch Admitted in	June 2015			
Subject code	P12B6CS2		Subject Name		Communication Skill-II				
Teaching scheme					Examination scheme (Marks)				
(Per week)	Lecture(DT)		Practical(Lab.)		Total	CE	SEE	Total	
	L	TU	P	TW					
Credit	4	0	-	-	4	Theory	40	60	100
Hours	4	0	-	-	4	Practical	-	-	-
Pre-requisites:									
Completion of intermediate level which includes overall comfort level in communication skills-I									
Learning Outcome:									
<ul style="list-style-type: none"> • Demonstrate complex knowledge of vocabulary unique to academic, personal and professional realms. • Enable to comprehend complex listening and reading structures • Enable to employ strategies such as clarification and explanation to facilitate written correspondence, oral presentation and discussion in a group. • Make student confident in all areas of English communication: Listening, Speaking, Reading and Writing. 									
Theory syllabus									
Sect ion	Content								Hrs
1	<p>Reading Skills:</p> <p>-Reading as a skill and the process: information---interpretation-----analysis---logical correlation----comprehension and response</p> <p>-Reading books/novels/magazines/articles as per one's interest and improving general understanding of English language, vocabulary building, understanding of correct sentence structure etc.</p> <p>-Reading English Newspaper, understanding the headlines /articles and improving formal understanding of English language, vocabulary building, understanding of correct sentence structure etc.</p> <p>-Exercises on reading comprehension</p> <p>Pronouns; Prepositions; Conjunctions and Interjections</p> <p>Writing Skills:</p> <p>-Understanding business communication, types and it's nuances</p> <p>-The golden rules of business communication</p> <p>-Paragraph writing; Essay writing and Précis writing</p> <p>-Note making; Notice ; Memos and Circulars</p> <p>-How to write formal letters/cover letters effectively (Do's and Don'ts) and practice exercises on various situations</p>								9
									3
									9

(II) Internal options should be given in questions 2, 3, 5 and 6.

SECTION - I

Q.1 –8 Marks

Q.2 –11 Marks

Q.3 –11 Marks

SECTION - II

Q.4 –8 Marks

Q.5 –11 Marks

Q.6 –11 Marks