

GANPAT UNIVERSITY																			
FACULTY OF COMPUTER APPLICATION																			
TEACHING AND EXAMINATION SCHEME																			
Programme	Bachelor of Computer Application					Branch/Spec.													
Semester	III																		
Effective from Academic Year			2018-2019		Effective for the batch Admitted in									June 2017					
Subject Code	Subject Name	Teaching scheme												Examination scheme (Marks)					
		Credit						Hours (per week)						Theory			Practical		
		Lecture(DT)			Practical(Lab.)			Lecture(DT)			Practical(Lab.)			CE	SEE	Total	CE	SEE	Total
		L	TU	Total	P	TW	Total	L	TU	Total	P	TW	Total						
U33A1OOP	OBJECT ORIENTED CONCEPTS AND PROGRAMMING	3		3	2		2	3		3	4		4	40	60	100	20	30	50
U33A2DFS	DATA AND FILE STRUCTURE	3		3	2		2	3		3	4		4	40	60	100	20	30	50
U33A3DBM	DATABASE MANAGEMENT SYSTEM	3		3	2		2	3		3	4		4	40	60	100	20	30	50
U33A4SAD	SYSTEM ANALYSIS AND DESIGN	3		3				3		3				40	60	100			
U33A5NT1	NETWORKING-I	3		3				3		3				40	60	100			
U33B6EDM	ENVIRONMENT AND DISASTER MANAGEMENT	3		3				3		3				40	60	100			
<b>Total</b>		18		18	6		6	18		18	12		12	240	360	600	60	90	150

GANPAT UNIVERSITY									
FACULTY OF COMPUTER APPLICATIONS									
Programme		Bachelor of Computer Application			Branch/Spec.		Computer Application		
Semester		III			Version		1.0.0.0		
Effective from Academic Year			2015-16		Effective for the batch Admitted in			June 2015	
Subject code		U33A10OP		Subject Name		OBJECT ORIENTED CONCEPTS AND PROGRAMMING USING JAVA			
Teaching scheme					Examination scheme (Marks)				
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	3		2		5	Theory	40	60	100
Hours	3		4		7	Practical	20	30	50
Pre-requisites:									
Student should know the concepts of programming language to understand OOP using JAVA. It will be comfortable and easy to implement java with OOP fundamental.									
Learning Outcome:									
By the completion of this course, students will be able to build applications and platforms for a number of devices, including computers, laptops, gaming consoles and many more. Student will be aware with basic understanding of programming structure of Java. Student will be in position to implement Encapsulation, Abstraction, Data hiding, Inheritance, Polymorphism, Dynamic Binding, and Message Communication.									
Theory syllabus									
Unit	Content								Hrs
1	<b>Fundamentals of Object-Oriented Programming (04)</b> <ul style="list-style-type: none"> <li>▪ Introduction, Object-Oriented Paradigm</li> <li>▪ Basic Concept of OOP(Encapsulation, Abstraction, Data hiding, Inheritance, Polymorphism, Dynamic Binding, Message Communication)</li> <li>▪ Benefits of OOP, Application of OOP</li> </ul> <b>Java Language (05)</b> <ul style="list-style-type: none"> <li>▪ Introduction, Java Program Structure, Simple Java Program, Java Tokens</li> <li>▪ Java is Strongly Typed Language</li> <li>▪ Constants, Variables and Data Types, Scope of Variable, Type Casting</li> <li>▪ Operators and Expression</li> <li>▪ Decision Making, Branching and Looping</li> </ul>								(9)
2	<b>About JAVA (03)</b> <ul style="list-style-type: none"> <li>▪ Java History, Java Features</li> <li>▪ How Java differs from C and C++</li> <li>▪ Java Environment</li> <li>▪ Java Byte-Code</li> </ul> <b>Defining Classes, Objects and Methods (06)</b> <ul style="list-style-type: none"> <li>▪ Introduction to a Class, Defining Classes Defining Methods</li> <li>▪ Creating Objects of a Class, Assigning Class Members Constructors</li> <li>▪ Method Overloading, Static Members, Nesting of Methods, Use of 'this' keyword</li> </ul>								(9)
3	<b>Arrays, String and Vectors (06)</b> <ul style="list-style-type: none"> <li>▪ Arrays, Arrays of Characters</li> <li>▪ String Handling Using String Class and StringBuffer Class</li> <li>▪ Operations on Immutable Strings and Mutable Strings</li> <li>▪ Vectors, Wrapper Classes, Enumerated Types</li> </ul> <b>Exception Handling (03)</b> <ul style="list-style-type: none"> <li>▪ The Idea Behind Exceptions, Types of Error, Types of Exceptions,</li> <li>▪ Dealing with Exceptions</li> <li>▪ Defining Your Own Exceptions</li> </ul>								(9)

4	<b>Extending Classes and Inheritance (08)</b> <ul style="list-style-type: none"> <li>▪ Extending Class, Simple Inheritance, Multiple Levels of Inheritance, Subclass Constructor(use of 'Super' Keyword), Method Overriding</li> <li>▪ Final Variables, Methods and Classes, Finalizer Methods and Automatic Garbage Collection</li> <li>▪ Abstraction through Abstract Classes and Methods, Final Modifier</li> <li>▪ Visibility Access Control, The Universal Super Class – Object Class</li> </ul> <b>I/O Basics (01)</b> Command Line Arguments, Reading Console Input, Writing Console Output	(9)
5	<b>Interfaces : Multiple Inheritance (03)</b> <ul style="list-style-type: none"> <li>▪ Defining an Interface, Extending Interface</li> <li>▪ Implementing Interface, Applying Interface</li> <li>▪ Multiple Inheritance using Interface</li> </ul> <b>Package (06)</b> <ul style="list-style-type: none"> <li>▪ Understanding Packages, Defining a Package,</li> <li>▪ Understanding CLASSPATH, Use Classes from a Package to Your Program,</li> <li>▪ Standard Packages, Access Protection in Packages</li> <li>▪ Java.util Package: Random Class, Date Class, Calendar Classes, Stack Class, HashTable Class</li> </ul>	(9)
<b>Practical content</b>		
<ol style="list-style-type: none"> <li>1. Write a Java Program find the Area of circle using command-line arguments.</li> <li>2. Write a Java Program that will display Factorial of the given number.</li> <li>3. Write a Java Program that will display 25 Prime nos.</li> <li>4. Write a Java Program to sort the elements of an array in ascending order.</li> <li>5. Write a Java Program which will read a word and count all occurrences of a particular character.</li> <li>6. Write a Java Program which will read a string and rewrite it in the alphabetical order eg.The word "STRING" should be written a "GINRST".</li> <li>7. Write a java program which shows the application of constructors and constructors overloading.</li> <li>8. Write a java program which shows the use of methods overloading.</li> <li>9. Write a java program which shows the use of static members and methods.</li> <li>10. Write a java program which shows the nesting of methods.</li> <li>11. Write a java program which shows use of String &amp; StringBuffer class.</li> <li>12. Write a java program which shows use of Vector class.</li> <li>13. Write a java program for DataInputStream which use try and catch for exception handling.</li> <li>14. Write a java program which use multiple catch blocks and also define finally block.</li> <li>15. Write a java program which shows throwing our own exception.</li> <li>16. Write a java program to explain the concept of single inheritance.</li> <li>17. Write a java program which explains the concept of multilevel inheritance.</li> <li>18. Write a java program to shows the use of 'super' keyword.</li> <li>19. Write a java program which show the method overriding.</li> <li>20. Write a java program which demonstrates the use of final variable, method and class.</li> <li>21. Write a java program which shows the concept of abstraction using abstraction class.</li> <li>22. Write a java program to implement interface.</li> <li>23. Write a java program for implements multiple inheritance using interface.</li> <li>24. Write a java program which shows importing of classes from other packages.</li> <li>25. Write a java program which shows the use of Stack and HashTable class.</li> <li>26. Write a java program which shows the use Date and Calendar Classes.</li> <li>27. Write a java program to demonstrate Random class.</li> </ol>		
<b>Text Books</b>		
1	Programming with Java Primer - Second Edition by Balagurusamy – TMH	

Reference Books	
1	Teach Yourself JAVA by Joseph O'Neil & Herb Schildt - McGraw-Hill Edition
2	JAVA: The Complete Reference by Naughton & Schildt - Tata McGraw Hill, 1999
3	An Introduction to Java Programming by Daniel Liang Y - , Prentice-Hall India, 1999
Examination Scheme :	
<p><b>Note for Examiner:</b>  Q-1 Must be common from any topics from syllabus.  Q-2 And onwards must be from specific topics and internal choice or option can be given.</p> <p><b>Paper Structure:</b>  Q-1 Attempt any Six Out of Nine: each question must be 5 marks: (30 Marks)  Questions must be covered all possible section.  Q-2 Must from topics: Funda. of Object-Oriented Programming, Java Language : (06 Marks)  Q-3 Must from topics: About JAVA, Defining Classes, Objects and Methods: (06 Marks)  Q-4 Must from topics: Extending Classes and Inheritance, I/O Basics: (06 Marks)  Q-5 Must from topics: Arrays, String and Vectors, Exception Handling: (06 Marks)  Q-6 Must from topics: Interfaces: Multiple Inheritance, Package: (06 Marks)</p>	

# GANPAT UNIVERSITY

## FACULTY OF COMPUTER APPLICATIONS

Programme	Bachelor of Computer Application			Branch/Spec.	Computer Application				
Semester	III			Version	1.0.0.0				
Effective from Academic Year	2015-16			Effective for the batch Admitted in	June 2015				
Subject code	U33A2DFS	Subject Name		DATA AND FILE STRUCTURE					
Teaching scheme				Examination scheme (Marks)					
(Per week)	Lecture(DT)		Practical(Lab.)		Total	CE	SEE	Total	
	L	TU	P	TW					
Credit	3		2		5	Theory	40	60	100
Hours	3		4		7	Practical	20	30	50
Pre-requisites:									
Understanding of data structures is essential and this facilitates the understanding of the language. The practice and assimilation of data structure techniques is essential for programming. The knowledge of "C" language and data structures will be reinforced by practical exercises during the course of study.									
Learning Outcome:									
Objective of this subject is to teach students how to store data in different types of data structure like array, stack, queue, linked-list, graph, tree etc. Subjects also cover Types of Data structures, Sorting, Searching, File Structure, Methods of Data Access and Organization, Hashing Function									
Theory syllabus									
Unit	Content							Hrs	
1	<b>Introduction to Data Structure: (08)</b> <ul style="list-style-type: none"> <li>▪ Data, Data Organization, Data Access methods (02)</li> <li>▪ Types of Data structure (02)                             <ul style="list-style-type: none"> <li>• Primitive and Non-Primitive Data Structure (01)</li> <li>• Linear and Non Linear Data Structure (01)</li> </ul> </li> <li>▪ String Manipulation (04)                             <ul style="list-style-type: none"> <li>String Length (01)    String Copy (01)</li> <li>String Compare (01)    String Concatenation (01)</li> </ul> </li> </ul>							(08)	
2	<b>Linear Data Structure: (16)</b> <ul style="list-style-type: none"> <li>▪ Array and its representation (1.5)</li> <li>▪ Stack and its application (3.5)                             <ul style="list-style-type: none"> <li>Polish Notation, Subroutine Invoking</li> </ul> </li> <li>▪ Queues (05)                             <ul style="list-style-type: none"> <li>Simple Queue, Circular Queue, De queue</li> </ul> </li> <li>▪ Linked List (05)                             <ul style="list-style-type: none"> <li>Singly Linked List, Circular Linked List, Doubly Linked List, Application of Linked List</li> </ul> </li> <li>▪ Reverse a List (0.5)</li> <li>▪ Merge a List (0.5)</li> </ul>							(16)	
3	<b>Non Linear Data Structure: (11)</b> <ul style="list-style-type: none"> <li>▪ Tree Structure, General Tree, Binary Tree, Tree Traversal Algorithms (04)</li> <li>▪ Insert and Delete node in Binary tree, Searching a node (03)</li> <li>▪ Graph and Networks: Concept, BFS Algorithm, DFS Algorithm (04)</li> </ul>							(11)	

4	<b>Sorting, Searching and File Structure: (10)</b> <ul style="list-style-type: none"> <li>▪ Sorting Algorithms: Selection, Bubble, Insertion, Quick (03)</li> <li>▪ Searching Algorithms: Sequential and Binary Search (03)</li> <li>▪ File Organization: Introduction, Sequential, Index, Direct (02)</li> <li>▪ Hashing Function and methods (02)</li> </ul>	(10)
<b>Practical content</b>		
<ol style="list-style-type: none"> <li>1. Write a Program for String manipulation functions.</li> <li>2. Write a Program for Array Insert operation</li> <li>3. Write a Program for Array Delete operation</li> <li>4. Write a Program for all stack operation</li> <li>5. Write a Program for Simple Queue operations.</li> <li>6. Write a Program for all Circular Queue operations.</li> <li>7. Write a Program for all operations of Singly Link list.</li> <li>8. Write a Program for all operations of Circular Link List.</li> <li>9. Write a Program for all operations of Double Link List.</li> <li>10. Write a program for Tree Traversal.</li> <li>11. Write a Program for Sequential Search.</li> <li>12. Write a Program for Binary Search.</li> <li>13. Write a Program for Selection Sort.</li> <li>14. Write a Program for Bubble Sort.</li> <li>15. Write a Program for Quick Sort.</li> <li>16. Write a Program for Insertion Sort.</li> </ol>		
<b>Text Books</b>		
1	Programming in ANSI-C By E. Balaguruswami, TMH Publication	
<b>Reference Books</b>		
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	
4	Classic Data Structures by Debasis Samanta, PHI Publications	
<b>Examination Scheme :</b>		
<p><b>Note for Examiner:</b>  Q-1 Must be common from any topics from syllabus.  Q-2 And onwards must be from specific topics and internal choice or option can be given.</p> <p><b>Paper Structure:</b>  Q-1 Attempt any Six Out of Nine: each question must be 5 marks: (30 Marks)  Questions must be covered all possible section.  Q-2 Must from topics: Introduction to Data Structure (06 marks)  Q-3 Must from topics: Linear Data Structure (12 marks)  Q-4 Must from topics: Non Linear Data Structure (06 marks)  Q-5 Must from topics: Sorting, Searching and File Structure (06 marks)</p>		

# GANPAT UNIVERSITY

## FACULTY OF COMPUTER APPLICATIONS

Programme	Bachelor of Computer Application	Branch/Spec.	Computer Application			
Semester	III	Version	1.0.0.0			
Effective from Academic Year	2015-16	Effective for the batch Admitted in	June 2015			
Subject code	U33A3DBM	Subject Name	DATABASE MANAGEMENT SYSTEM			
Teaching scheme			Examination scheme (Marks)			
(Per week)	Lecture(DT)	Practical(Lab.)	Total	CE	SEE	Total
	L	TU	P	TW		
Credit	3		2		5	Theory 40 60 100
Hours	3		4		7	Practical 20 30 50
<b>Pre-requisites:</b>						
Student should aware with basics of programming concepts.						
<b>Learning Outcome:</b>						
After learning this subjects students aware with query language in terms of SQL. Students also got Knowledge about different database concepts like architecture and many more.						
<b>Theory syllabus</b>						
Unit	Content					Hrs
1	<ul style="list-style-type: none"> <li>• <b>Database Concepts and Architecture</b> <ul style="list-style-type: none"> <li>○ Introduction of Database (01)</li> <li>○ Benefits of Database Approach (01)</li> <li>○ What is a RDBMS?, Codd's rules for RDBMS (01)</li> <li>○ DBMS Vs. RDBMS (01)</li> <li>○ Three levels of the architecture (the external level, the conceptual level, the internal level ) and mappings between them (02)</li> <li>○ Roles of Database Administrator (01)</li> <li>○ Introduction to Client/Server Architecture (01)</li> </ul> </li> </ul>					(8)
2	<ul style="list-style-type: none"> <li>• <b>Designing of Database</b> <ul style="list-style-type: none"> <li>○ Normalization: functional dependencies Trivial and nontrivial dependencies (1.5)</li> <li>○ non-loss decomposition (01)</li> <li>○ First, second and third normal forms (2.5)</li> <li>○ multi-valued dependencies and fourth normal form (2)</li> <li>○ join dependency and fifth normal form(1)</li> </ul> </li> </ul>					(8)
3	<ul style="list-style-type: none"> <li>• <b>Interactive SQL Part – I</b> <ul style="list-style-type: none"> <li>○ Introduction to SQL, Logging into SQL * Plus, Naming rules and Conventions, Data Types (01)</li> <li>○ Creating a Table, Inserting, Viewing data in the tables (01)</li> <li>○ Sorting data in a table, Delete operations, Updating contents of a table (01)</li> <li>○ Modifying the structure of tables, Renaming, Truncating and Destroying tables, Dropping a column from a table(03)</li> <li>○ Constraints (I/O and Business rule constraints) , Computations on table data. (05)</li> </ul> </li> </ul>					(11)

4	<ul style="list-style-type: none"> <li>• <b>Interactive SQL Part – II</b> <ul style="list-style-type: none"> <li>○ <b>Functions (06)</b> <ul style="list-style-type: none"> <li>▪ <b>Aggregate</b> : AVG, MIN, COUNT, COUNT(*), MAX, SUM</li> <li>▪ <b>Numeric</b> : ABS, POWER, ROUND, SQRT, EXP, GREATEST, LEAST, MOD, TRUNC, FLOOR, CEIL</li> <li>▪ <b>String</b>: LOWER, INITCAP, UPPER, SUBSTR, ASCII, INSTR, TRANSLATE, LENGTH, LTRIM, RTRIM, TRIM, LPAD, RPAD</li> <li>▪ <b>Conversion</b>: TO_NUMBER, TO_CHAR(NUMBER CONVERSION), TO_CHAR( DATE CONVERSION) ,TO_DATE</li> <li>▪ <b>Date function</b>: ADD_MONTHS, LAST_DAY, MONTHS_BETWEEN, NEXT_DAY</li> </ul> </li> <li>○ <b>Advance Queries (08)</b> <ul style="list-style-type: none"> <li>▪ Group by Clause, Having Clause, EXISTS/ NOT EXISTS operator, Sub query, Different Types of Joins, Set Operators</li> </ul> </li> <li>○ <b>Sql Performance Tuning (03)</b> <ul style="list-style-type: none"> <li>▪ Index, View, Sequence, Setting environment using SET command</li> </ul> </li> <li>○ <b>Security Management using SQL (01)</b> <ul style="list-style-type: none"> <li>▪ creating user in Oracle &amp; changing the password</li> <li>▪ Granting and revoking permissions, revoking privileges given</li> </ul> </li> </ul> </li> </ul>	(18)
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<b>Practical content</b>																																																																																																	
<ul style="list-style-type: none"> <li>○ Create following Three Tables.</li> </ul>	<p>1. Salesman</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">SNUM</th> <th style="text-align: left;">SNAME</th> <th style="text-align: left;">CITY</th> <th style="text-align: left;">COMMISSION</th> </tr> </thead> <tbody> <tr><td colspan="4">-----</td></tr> <tr><td>1001</td><td>PIYUSH</td><td>LONDON</td><td>12%</td></tr> <tr><td>1002</td><td>NIRAJ</td><td>SURAT</td><td>13%</td></tr> <tr><td>1003</td><td>MITI</td><td>LONDON</td><td>11%</td></tr> <tr><td>1004</td><td>RAJESH</td><td>BARODA</td><td>15%</td></tr> <tr><td>1005</td><td>ANAND</td><td>NEW DELHI</td><td>10%</td></tr> <tr><td>1006</td><td>RAM</td><td>PATAN</td><td>10%</td></tr> <tr><td>1007</td><td>LAXMAN</td><td>BOMBAY</td><td>09%</td></tr> </tbody> </table> <ul style="list-style-type: none"> <li>○ SNUM: A Unique number assign to each salesman.</li> <li>SNAME: The name of salesman.</li> <li>CITY: The location of salesman.</li> <li>COMMISSION: The salesman commission on order.</li> </ul> <p>2. Customer</p> <ul style="list-style-type: none"> <li>○</li> </ul> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">CNUM</th> <th style="text-align: left;">CNAME</th> <th style="text-align: left;">CITY</th> <th style="text-align: left;">RATING</th> <th style="text-align: left;">SNUM</th> </tr> </thead> <tbody> <tr><td colspan="5">-----</td></tr> <tr><td>2001</td><td>HARDIK</td><td>LONDON</td><td>100</td><td>1001</td></tr> <tr><td>2002</td><td>GITA</td><td>ROME</td><td>200</td><td>1003</td></tr> <tr><td>2003</td><td>LAXIT</td><td>SURAT</td><td>200</td><td>1002</td></tr> <tr><td>2004</td><td>GOVIND</td><td>BOMBAY</td><td>300</td><td>1002</td></tr> <tr><td>2005</td><td>CHANDU</td><td>LONDON</td><td>100</td><td>1001</td></tr> <tr><td>2006</td><td>CHAMPAK</td><td>SURAT</td><td>300</td><td>1007</td></tr> <tr><td>2007</td><td>PRATIK</td><td>ROME</td><td>100</td><td>1004</td></tr> </tbody> </table> <ul style="list-style-type: none"> <li>○ CNUM: A Unique number assign to each customer.</li> <li>CNAME: The name of customer.</li> <li>CITY: The location of customer.</li> <li>RATING: A level of preference indicator given to this customer.</li> <li>SNUM: A salesman number assign to this customer.</li> </ul> <p>3. Order</p> <ul style="list-style-type: none"> <li>○</li> </ul> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">ONUM</th> <th style="text-align: left;">AMOUNT</th> <th style="text-align: left;">ODATE</th> <th style="text-align: left;">CNUM</th> <th style="text-align: left;">SNUM</th> </tr> </thead> <tbody> <tr><td colspan="5">-----</td></tr> <tr><td>3001</td><td>18.69</td><td>10/03/99</td><td>2008</td><td>1007</td></tr> </tbody> </table>	SNUM	SNAME	CITY	COMMISSION	-----				1001	PIYUSH	LONDON	12%	1002	NIRAJ	SURAT	13%	1003	MITI	LONDON	11%	1004	RAJESH	BARODA	15%	1005	ANAND	NEW DELHI	10%	1006	RAM	PATAN	10%	1007	LAXMAN	BOMBAY	09%	CNUM	CNAME	CITY	RATING	SNUM	-----					2001	HARDIK	LONDON	100	1001	2002	GITA	ROME	200	1003	2003	LAXIT	SURAT	200	1002	2004	GOVIND	BOMBAY	300	1002	2005	CHANDU	LONDON	100	1001	2006	CHAMPAK	SURAT	300	1007	2007	PRATIK	ROME	100	1004	ONUM	AMOUNT	ODATE	CNUM	SNUM	-----					3001	18.69	10/03/99	2008	1007
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3002	767.19	10/03/99	2001	1001
3003	1900.10	10/03/99	2007	1004
3004	5160.45	10/03/99	2003	1002
3005	1098.25	10/04/99	2008	1007
3006	1713.12	10/04/99	2002	1003
3007	75.75	10/05/99	2004	1002
3008	4723.00	10/05/99	2006	1001
3009	1309.95	10/05/99	2004	1002
3010	9898.87	10/06/99	2006	1001

- o ONUM: A Unique number assign to each Order.

AMOUNT: Amount of order in Rs.

ODATE: The date of order.

CNUM: The number of customer making the order.

SNUM: The number of salesman credited with the sale.

Solve following request with the help of SQL query.

- o 1. Produce the order no, a mount and date of all orders.
- 2. Give all the information about all the customers with salesman number 1001.
- 3. Display the information in the sequence of city, sname, snum, and Commission.
- 4. List of rating followed by the name of each customer in Surat.
- 5. List of snum of all salesmen with orders in order table without any duplicates.
- 6. List of all orders for more than Rs. 1000.
- 7. List out names and cities of all salesmen in London with commission above 10%
- 8. List all customers excluding those with rating  $\leq 100$  or they are located in Rome.
- 9. List all order for more than Rs. 1000 except the orders of snum, 1006 of 10/03/97
- 10. List all orders taken on October 3rd or 4th or 6th 1997.
- 11. List all customers whose names begin with a letter 'C'.
- 12. List all customers whose names begins with letter 'A' to 'G'
- 13. List all orders with zero or NULL amount.
- 14. Find out the largest orders of salesman 1002 and 1007.
- 15. Count all orders of 10-Mar-97.
- 16. Calculate the total amount ordered.
- 17. Calculate the average amount ordered.
- 18. Count the no. of salesmen currently having orders.
- 19. Find the largest order taken by each salesman on each date.
- 20. Find the largest order taken by each salesman on 10/03/1997.
- 21. Count the no. of different non NULL cities in the Customer table.
- 22. Find out each customer's smallest order.
- 23. Find out the customer in alphabetical order whose name begins with 'G'
- 24. Count the no. of salesmen registering orders for each day.
- 25. List all salesmen with their % of commission.
- 26. Display the no. of order for each day in the following format.  
dd-mon-yy.
- 27. Assume each salesperson has a 12% commission. Write a query on the order table that will produce the order number, salesman no and amount of commission for that order.
- 28. Find the highest rating in each city in the following format:
- 29. List all customers in descending order of rating.
- 30. Calculate the total of orders for each day.
- 31. Show the name of all customers with their salesman's name.
- 32. List all customers and salesmen who shared a same city.
- 33. List all orders with the names of their customer and salesman.
- 34. List all orders by the customers not located in the same city as their salesman.
- 35. List all customers serviced by salesman with commission above 12%.
- 36. Calculate the amount of the salesman commission on each order by customer with rating above 100.
- 37. Find all pairs of customers having the same rating with our duplication.
- 38. List all customers located in cities where salesman Niraj has customers.
- 39. Find all pairs of customers served by a single salesman with the salesman's name and no.
- 40. List all salesmen who are living in the same city with out duplicate rows.

41. Produce the name and city of all the customers with the same rating as Hardik'.
42. Extract all orders of Miti.
43. Extract all orders of Baroda's salesmen.
44. Find all orders of the salesman who services 'Hardik'
45. List all orders that are greater than the average of April 10, 1997
46. Find all orders attributed to salesmen in 'London'.
47. List the commission of all salesmen serving customers in 'London'.
48. Find all customers whose cnum is 1000 above than the snum of Niraj.
49. Count the no. of customers with the rating above than the average of 'Surat'.
50. List all orders of the customer 'Chandresh'.
51. Produce the name and rating of all customers who have above average orders.
52. Find all customers with orders on 3rd Oct. 1997 using correlate sub query.
53. List the name and number of all salesmen who has more than Zero customers.
54. Calculate the total amount ordered on each day eliminating the days where the total amount was not at least Rs. 2000 above the maximum amount of that day.
55. Using correlated sub query find the name and number of all customers with rating equal to maximum for their city.
56. Select the name and number of all salesmen who have customers their cities.
57. Find all salesmen who have customers with rating > 300
58. List all salesmen with customers located in their cities.
59. Find all salesmen for whom there are customers that follow them alphabetical order.
60. Find all customers having rating greater than any customer in 'Rome'.
61. List all order that has amount greater than at least one of the orders from 6th October 1997.
62. Find all orders with amounts smaller than any amount for a customer in 'Rome'.
63. Find all the customers who have greater rating than every customer in 'Rome'.
64. Select all customers whose rating doesn't match with any rating customer of 'Surat'.
65. List all customers whose ratings are equal to or greater than ANY 'Niraj'
66. Find out which salesman produce largest and smallest orders on each date.
67. Create a union of two queries that shows the names, cities and ratings of all customers. Those with rating of  $\geq 200$  should display 'HIGH RATING' and those with  $< 200$  should display 'LOW RATING'
68. Insert a row into salesman table with the value snum is 100-salesman name is Rakesh, city is unknown and commission is 14%.
69. Insert a row in to customer table with values London, Pratik a 2005 for the ColumnsCity, name and number.
70. Create another table London staff having same structure as salesman table.
71. Insert all the rows of salesman table with city London in the London staff table.
72. Create another table Day totals with two-attribute date and total and insert rows into this table from order table.
73. Create a duplicate of the salesman table with a name Multicust. Now delete all the rows from the salesman table.
74. Get back all the rows of salesman table from its duplicate table.
75. Remove all orders from customer Chandresh from the orders table.
76. Set the ratings of all the customers of Piyush to 400.
77. Increase the rating of all customers in Rome by 100.
78. Salesman Miti has resigned. Reassign her number to a new salesman Gopal whose city is Bombay and commission is 10%.
79. Double the commission of all salesmen of London.
80. Set ratings for all customers in London to NULL.
81. Suppose we have a table called sales Manager with the same definition as Salesmen table. Company decides to promote salesmen having total order more than 5000 to Sales Manager. Fill up the Sales Manager table.
82. Assume that we have a table called smcity. Store the information of all salesmen with the customers in their home cities into smcity.
83. Create a table Bonus that contains date wise maximum amount of order for all salesmen.
84. Create a table Multicust containing the salesmen with more than one customer.
85. New Delhi office has closed. Remove all customers assigned to salesmen in New Delhi.
86. Delete all salesmen who have at least one customer with a rating of 100 from

salesmen table.

87. Delete the salesmen who produce the lowest order for each day.
88. Find the smallest order for each day. Reduce the commission of all salesmen by 2% who produce this order.
89. Delete all customers with no current orders.
90. Write a command to find out the orders by date.
91. Write a command to add the item-name column to the order table.
92. Create a copy of your order table. Drop the original order table.
93. Write a command to create the order table so that all onum values as well as all combinations of cnum and snum are different from one another and so that NULL values are excluded from the date field.
94. Write a command to create the salesmen table so that the default commission is 10% with no NULL permitted, snum is the primary key and all names contain alphabets only.
95. Give the commands to create our sample tables (salesmen, customer, orders) with all the necessary constraints like PRIMARY KEY, NOT NULL UNIQUE, FOREIGN KEY.
96. Create a view called Big orders which stores all orders larger than Rs.4000.
97. Create a view Rate count that gives the count of no. of customers at each rating.
98. Create a view that shows all the customers who have the highest ratings.
99. Create a view that shows all the number of salesman in each city.
100. Create a view that shows all the number of salesmen in each city.
101. Create a view that shows the average and total orders for each salesman after his name and number.
102. Create a view that shows all the salesmen with multiple customers.
103. Create a view to keep track of the total no of customers ordering, no of salesmen taking orders, the no of orders, the average amount ordered, and the total amount ordered for each day.
104. Create a view Show name that shows for each order the order no, amount, salesman name and the customer name.
105. List all orders of salesman 'Rajesh' using Show name View along with his commission.
106. Create view Max sales to store the name and number of salesman, along with the date, which have the highest order on any given date.
107. Using above view, find out the name and number of salesman who have the highest order at least two times. Store the result in another view.
108. Create a view Same city that shows the no and name and city of the customers along with the city of the salesman serving them.
109. Create a view Commission of salesmen table to include only snum and commission field so that through. This view someone can enter or change the commission but only to values between 10% and 20%.
110. Assume that the CURDATE is a constant representing current date. Give a command to create orders table with CURDATE as a default date.
111. List all salesmen in London who had at least one customer located there as well.
112. List all salesmen in London who didn't have any customer there.

#### Text Books

- |   |  |
|---|--|
| 1 | SQL, PL/SQL: The Programming Language of Oracle(3 <sup>rd</sup> , 4 <sup>rd</sup> edition) By Ivan Bayross - BPB |
|---|--|

#### Reference Books

- |   |  |
|---|--|
| 1 | An Introduction to Database Systems By C.J.Date – Addison-Wesley |
|---|--|

#### Examination Scheme :

##### Note for Examiner:

Q-1 Must be common from any topics from syllabus.

Q-2 And onwards must be from specific topics and internal choice or option can be given.

##### Paper Structure:

Q-1 Attempt any Six Out of Nine: each question must be 5 marks: (30 marks)

Questions must be covered all possible section.

Q-2 Must from topics: Database concepts and Architecture (06 marks)

Q-3 Must from topics: Designing of database (06 marks)  
Q-4 Must from topics: Interactive SQL-I (06 marks)  
Q-5 Must from topics: Function, SQL Performance tuning, Security  
Management (06 marks)  
Q-6 Must from topics: Advance Queries (06 marks)

# GANPAT UNIVERSITY

## FACULTY OF COMPUTER APPLICATIONS

Programme	Bachelor of Computer Application	Branch/Spec.	Computer Application
Semester	III	Version	1.0.0.0
Effective from Academic Year	2015-16	Effective for the batch Admitted in	June 2015
Subject code	U33A4SAD	Subject Name	SYSTEM ANALYSIS AND DESIGN
Teaching scheme		Examination scheme (Marks)	
(Per week)	Lecture(DT)	Practical(Lab.)	Total
	L TU	P TW	
Credit	3	-	3
Hours	3	-	3

**Pre-requisites:**

Need to clear about systematic and sequential flow of any bulk of tasks which are going to computerize. Student should have basic concept of analysis and design in general.

**Learning Outcome:**

The objective of this course is to learn how to analysis and design for computerized system. It includes Introduction to Information System, Types Of User, Role of system Analyst, System Development Strategies, Structure Analysis Strategies, System Prototyping Model, Tools for Documenting And Decision, System Design and CASE Tools, Testing and Quality Assurance, and Working on Case Studies.

**Theory syllabus**

Unit	Content	Hrs
1	<p><b>Introduction to System Analysis and design (21)</b></p> <ul style="list-style-type: none"> <li>▪ Introduction AND Types of System ,Characteristics of System, Need for system development(2.5)</li> <li>▪ Types Of User, Role of system Analyst(01)</li> <li>▪ Introduction to Information System (02)                             <ul style="list-style-type: none"> <li>○ Types Of Information System</li> </ul> </li> <li>▪ System Development Strategies(03)                             <ul style="list-style-type: none"> <li>○ System Development Life Cycle</li> </ul> </li> <li>▪ Structure Analysis Strategies(07)                             <ul style="list-style-type: none"> <li>○ Physical And Logical DFD, Data Dictionary</li> </ul> </li> <li>▪ System Prototyping Model(01)</li> <li>▪ System Investigation (02)                             <ul style="list-style-type: none"> <li>○ Fact finding Techniques</li> </ul> </li> <li>▪ Tools for Documenting And Decision(2.5)</li> <li>▪ Decision Tree, Decision Table, Structured English</li> </ul>	(21)
2	<p><b>System Design and CASE Tools (12)</b></p> <ul style="list-style-type: none"> <li>▪ Code Design(1.5)                             <ul style="list-style-type: none"> <li>○ Principal of Code Design, Types Of Code Design</li> </ul> </li> <li>▪ Form Design(1.5)                             <ul style="list-style-type: none"> <li>○ Types Of Forms, Principle of form Design, Consideration of form Design, Steps for Form Design</li> </ul> </li> <li>▪ Input Design(03)                             <ul style="list-style-type: none"> <li>○ Objective of Input Design, Data capturing guidelines, Input validation</li> </ul> </li> <li>▪ Output Design(02)                             <ul style="list-style-type: none"> <li>○ Objective of Output, Types of Output, Different ways to represent Information, Designing Special Forms</li> </ul> </li> <li>▪ Computer Aided System Tools(02)                             <ul style="list-style-type: none"> <li>○ Benefits of Computer assisted tools, Categories Of automated Tools, CASE Tools</li> </ul> </li> </ul>	(12)

	<ul style="list-style-type: none"> <li>▪ File and Database Design(02) <ul style="list-style-type: none"> <li>○ Basic File Terminology, Types of File, Method of File Organisation</li> </ul> </li> </ul>	
3	<b>Testing and Quality Assurance (06)</b> <ul style="list-style-type: none"> <li>▪ Testing Strategies(01)</li> <li>▪ Level Of Testing(1.5)</li> <li>▪ Managing Quality Assurance(1.5)</li> <li>▪ Training And Conversion(01)</li> <li>▪ Post Implementation Review(01)</li> </ul>	(06)
4	<b>Case Studies(06)</b> <ul style="list-style-type: none"> <li>▪ Payroll System(02)</li> <li>▪ Billing System(01)</li> <li>▪ Library System(01)</li> <li>▪ Financial Accounting System(1)</li> <li>▪ Inventory Management System(1)</li> </ul>	(06)
<b>Practical content</b>		
-----NOT APPLICABLE-----		
<b>Text Books</b>		
1	Analysis And Design Of Information System-Falguni A. Suthar	
<b>Reference Books</b>		
1	Analysis and Design of Information Systems - James A. Senn-TMH	
2	System Analysis and Design, 1st Edition, - S.Parthasarthy&B.W.Khalkar, Master Academy.	
3	Introduction to S.A.D. by LEE VOL. 1 & 2 Galgotia Publication	
Examination Scheme :		
<b>Note for Examiner:</b> Q-1 Must be common from any topics from syllabus. Q-2 And onwards must be from specific topics and internal choice or option can be given. <b>Paper Structure:</b> Q-1 Attempt any Six Out of Nine: each question must be 5 marks: (30 Marks) Questions must be covered all possible section. Q-2 Must from topics: Introduction to System Analysis and design (Introduction to system and information system, type of user and role of system Analyst, SDLC): (05 marks) Q-3 Must from topics: Introduction to System Analysis and design (System analysis Strategy, prototype Model, system Investigation, tools for documentation and decision) (05 marks) Q-4 Must from topics: System Design and CASE Tools(Code design, Form design, Input design, Output design, File and Database Design): (06 marks) Q-5 Must from topics: Computer Aided System Tools, Testing and Quality Assurance: (07 marks) Q-6 Must from topics: Case Studies (07 marks)		

GANPAT UNIVERSITY								
FACULTY OF COMPUTER APPLICATIONS								
Programme	Bachelor of Computer Application				Branch/Spec.	Computer Application		
Semester	III				Version	1.0.0.0		
Effective from Academic Year	2015-16				Effective for the batch Admitted in	June 2015		
Subject code	U33A5NT1		Subject Name		NETWORKING-I			
Teaching scheme					Examination scheme (Marks)			
(Per week)	Lecture(DT)		Practical(Lab.)		Total	CE	SEE	Total
	L	TU	P	TW				
Credit	3		-		3	Theory	40	60
Hours	3		-		3	Practical	-	-
Pre-requisites:								
Students should have knowledge about computer and regarding networks and its type.								
Learning Outcome:								
The objective of the course is to provide students with an overview of the concepts and fundamentals of data communication and computer networks. Topics to be covered include: data communication concepts and techniques in a layered network architecture, communications switching and routing, types of communication, network topologies, layered network models (OSI reference model, TCP/IP networking architecture) and their protocols, various types of networks (LAN, MAN, WAN and Wireless networks) and their protocols, Different Connectors, Multiplexing, Transmission Media, The Telephone System, Connected devices.								
Theory syllabus								
Unit	Content							Hrs
1	<b>Introduction (07)</b> <ul style="list-style-type: none"> <li>▪ Introduction of Computer Networks, Uses of Computer Networks, Advantage &amp; Disadvantage of Computer Networks (4)</li> <li>▪ Transmission mode: Simplex communication, Half-duplex and Full-duplex(2)</li> <li>▪ Introduction of Internet &amp; Intranet, Baseband &amp; Broadband Transmission(1)</li> </ul>							(07)
2	<b>Basic of Computer Networks &amp; Communication Device, (18)</b> <ul style="list-style-type: none"> <li>▪ Network Hardware: PAN (Personal Area Network) , LAN (Local Area Network), MAN (Metropolitan Area Network), WAN (Wide Area Network) &amp; The Internet (network of all networks)(2)</li> <li>▪ Network Topology: Linear bus, Ring, Star, tree, mesh &amp; Hybrid.(3)</li> <li>▪ Reference Model: OSI Reference Model &amp; TCP/IP Reference Model (7)</li> <li>▪ Comparison of OSI reference model &amp; TCP/IP reference model.(0.5)</li> <li>▪ Analog &amp; digital transmission(1)</li> <li>▪ Connecting Devices: Repeater, HUB, Switch, Bridge, Router, and Gateway. (1)</li> <li>▪ The Telephone System – its structure, the local loop, transmission Impairments. (1.5)</li> <li>▪ Introduction of Modem, Introduction of Communication satellites. (2)</li> </ul>							(18)
3	<b>Physical layer(12)</b> <ul style="list-style-type: none"> <li>▪ Transmission Media: guided transmission media(twisted pair, coaxial cable, fiber optic)</li> <li>▪ unguided transmission media( Wireless Transmission media: Radio transmission, Microwave transmission, infrared transmission &amp; electromagnetic</li> </ul>							(12)

	<ul style="list-style-type: none"> <li>spectrum) (7)</li> <li>▪ Different Connectors: RJ45, RG 59, RG 58, RG 11, BNC AND Cables CAT 5, CAT 5E, CAT 6(2).</li> <li>▪ Multiplexing: TDM &amp; FDM, Switching: Circuit switching &amp; Packet switching. (3)</li> </ul>	
4	<p><b>Data link layer(8)</b></p> <ul style="list-style-type: none"> <li>▪ Introduction.(1)</li> <li>▪ Data link layer design issues: Services provided to the network layer, framing, error control, frame control(4)</li> <li>▪ Error detection and Correction.(3)</li> </ul>	(08)
<b>Practical content</b>		
<b>Text Books</b>		
1	Data Communication & Networking by Behrouz A. Forouzan, Tata McGraw Hill Edition.	
<b>Reference Books</b>		
1	Computer Networks 4th edition by Andrew S. Tanenbaum, PHI	
2	TCP/IP Protocol Suit by Behrouz A. Forouzan, Tata McGraw Hill Edition.	
<b>Examination Scheme :</b>		
<p><b>Note for Examiner:</b>  Q-1 Must be common from any topics from syllabus.  Q-2 And onwards must be from specific topics and internal choice or option can be given.</p> <hr/> <p><b>Paper Structure:</b>  Q-1 Attempt any Six Out of Nine: each question must be 5 marks: (30 Marks)  Questions must be covered all possible section.  Q-2 Must from topics: Introduction: (04 marks)  Q-3 Must from topics: Basic of Computer Networks: (16 marks)  Q-4 Must from topics: Physical Layer (06 marks)  Q-5 Must from topics: Data Link Layer (04 marks)</p>		



# GANPAT UNIVERSITY

## FACULTY OF COMPUTER APPLICATIONS

Programme	Bachelor of Computer Application				Branch/Spec.	Computer Application			
Semester	III				Version	1.0.0.0			
Effective from Academic Year		2018-19			Effective for the batch Admitted in			June 2017	
Subject code	U33B6EDM		Subject Name		ENVIRONMENT AND DISASTER MANAGEMENT				
Teaching scheme					Examination scheme (Marks)				
(Per week)	Lecture(DT)		Practical(Lab.)		Total	CE	SEE	Total	
	L	TU	P	TW					
Credit	3				3	Theory	40	60	100
Hours	3				3	Practical			
Pre-requisites:									
Students should know the basic awareness of environment.									
Learning Outcome:									
After the completion of the course, student able to aware with environment and disaster management.									
Theory syllabus									
Unit	Content								Hrs
1	<b>Introduction Environment: (10)</b> <ul style="list-style-type: none"> <li>• Creation of Environment</li> <li>• Importance of Environment, Elements of Environment, Elements effective Environment</li> <li>• Types of Environment</li> <li>• Environment Management-Aims and elements of Environment Management</li> <li>• Environment and Human Health</li> <li>• Ecology and Ecosystem                             <ul style="list-style-type: none"> <li>▪ Nature</li> <li>▪ Construction of Environment</li> <li>▪ Proper planning of Bio-situation</li> <li>▪ Construction and work of Ecosystem</li> <li>▪ Elements of Ecosystem (Temperature, Light and soil)</li> </ul> </li> </ul>								(10)
2	<b>Pollution: (12)</b> <ul style="list-style-type: none"> <li>• Introduction</li> <li>• Events of world's pollution to draw attention</li> <li>• Types of pollution</li> <li>• <b>Air Pollution –</b> <ul style="list-style-type: none"> <li>▪ Air polluters, Source of polluters, Effect of Air pollution on plants, Animals and Human being, other effects and its solution</li> </ul> </li> <li>• <b>Water Pollution –</b> <ul style="list-style-type: none"> <li>▪ Types of water pollution, Types of water polluters and their resources, Effect of water pollution</li> </ul> </li> <li>• <b>Hard waste pollution</b> <ul style="list-style-type: none"> <li>▪ Types of Hard waste pollution, Types of Hard waste polluters and their resources, Effect of Hard waste pollution and Control</li> </ul> </li> <li>• <b>Sea pollution</b> <ul style="list-style-type: none"> <li>▪ Sources of Sea polluters, Effect of sea pollution, Control of sea pollution</li> </ul> </li> </ul>								(12)

	<ul style="list-style-type: none"> <li>• <b>Noise Pollution</b> – <ul style="list-style-type: none"> <li>▪ Sources of Noise Pollution, Unit to measure sound, Effect of Noise pollution on Human and control, Steps to decrease effect of Noise</li> </ul> </li> </ul>	
3	<b>Introduction Disaster Management: (11)</b> <ul style="list-style-type: none"> <li>• Introduction</li> <li>• Pre Disaster Management and Post Disaster Management</li> <li>• Disaster Management in India</li> <li>• Disaster Management and Citizen</li> <li>• Distribution of Disaster Management</li> <li>• Accidents and First Aid Services</li> </ul>	(11)
4	<b>Awareness of Disaster Management : (12)</b> <ul style="list-style-type: none"> <li>• <b>Introduction</b></li> <li>• <b>Natural Calamities</b></li> <li>• <b>Earthquake</b> <ul style="list-style-type: none"> <li>▪ Before Earthquake, During Earthquake, After Earthquake</li> </ul> </li> <li>• <b>Flood</b> <ul style="list-style-type: none"> <li>▪ Factors affecting the amount of flood, Flood control methods, Benefits of flood control, Awareness for flood</li> </ul> </li> <li>• <b>Cyclone</b> <ul style="list-style-type: none"> <li>▪ Preventive steps before cyclone, Preventive steps During cyclone, Preventive steps after cyclone</li> </ul> </li> <li>• <b>Fire</b> <ul style="list-style-type: none"> <li>▪ Awareness while fire, Fire Control</li> </ul> </li> </ul>	(12)
<b>Practical content</b>		
<b>Text Books</b>		
1	Environment and Disaster Management by Dr. M. I. Patel	
2	Environmental Studies: R. Rajagopalan, Oxford University Press	
3	Environmental Pollution Control Engineering, by C.S.Rao,	
<b>Reference Websites</b>		
<b>Note for Examiners:</b>		
	(The question paper will be in English and Student can answer in Gujarati/Hindi/English language)	
	Q-1 Must be common from any topics from syllabus.	
	Q-2 And onwards must be from specific topics and internal choice or option can be given	
<b>Paper Structure:</b>		
	Q-1 Attempt any Six Out of Nine: each question must be 5 marks: (30 Marks) Questions must be covered all possible section. Q-2 Must be from topics: Introduction Environment: (06 marks) Q-3 Must be from topics: Pollution: (08 marks) Q-4 Must be from topics: Introduction Disaster Management (8 marks) Q-5 Must be from topics: Awareness of Disaster Management: (08 marks)	