GANPAT UNIVERSITY

FACULTY OF COMPUTER APPLICATIONS

Programme	Master of Computer Applications	**Branch/ Spec.**	Computer Application
Semester	III	**Version**	1.0.0.2
Effective from Academic Year	2024-2025	**Effective for the batch Admitted in**	June 2024
Subject Code	P13A1ADM	**Subject Name**	Advanced Database Management System

Teaching scheme						**Examination scheme (Marks)**			
(Per week)	**Lecture (DT)**		**Practical (Lab.)**		**Total**		**CE**	**SEE**	**Total**
	L	TU	P	TW					
Credit	2	0	2	0	4	Theory	40	60	100
Hours	2	0	4	0	6	Practical	30	20	50

Objective:

- To administer and manage various aspects of a database in a specific database tool.

Pre-requisites:

- Require the basic knowledge of DBMS and basic operational systems.

Course Outcomes :

- **1 = Slight (Low); 2 = Moderate (Medium); 3 = Substantial (High); "-" = No Correlation**

Name of CO	**Description**
CO1	Apply database architecture, instance management, initialization parameters, and database creation using DBCA.
CO2	Analyze and manage database storage structures and undo data to ensure efficient space utilization and transaction consistency.
CO3	Apply and evaluate flashback technologies to recover databases from logical errors and minimize data loss.

	CO4	Demonstrate and implement data movement techniques using SQL*Loader and Data Pump utilities for database migration and backup.						
		Mapping of CO and PO						
	Cos	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
	CO1	3	2	–	2	–	–	–	1
	CO2	3	3	–	2	–	–	–	1
	CO3	2	3	–	2	–	–	–	1
	CO4	2	2	2	3	1	–	–	1

Content:

Unit	SECTION-I	Hrs
1	**Introduction of Database and Database Configuration Assistant** **Introduction:** Overview of Database, Database Architecture, Database Structures, Database Memory Structures, Process Structures, Database Instance Management , Server Process and Database Buffer Cache, Overview of backup and recovery, Initialization Parameter Files, Simplified Initialization Parameters, Viewing and Modifying Initialization Parameters , Database Startup and Shutdown **Creating a Database:** Objectives, Planning the Database, Database Configuration Assistant (DBCA), Using DBCA to create a database, Password Management, Creating a Database Design Template, Using the DBCA to Delete a Database	8
2	**Managing Database Storage Structures :**Objectives, Storage Structures, How Table Data Is Stored, Anatomy of a Database Block ,Tablespaces and Data Files, Database Managed Files, Space Management in Tablespaces, Exploring the Storage Structure, Creating a New Tablespace, Storage for Locally Managed Tablespaces, Tablespaces in the Preconfigured Database, Altering a Tablespace, Actions with Tablespaces, Dropping Tablespaces, Viewing Tablespace Information, Gathering Storage Information, Viewing Tablespace Contents, Enlarging the Database **Managing Undo Data** Managing Undo Data : Objectives, Data Manipulation, Undo Data , Transactions and Undo Data, Storing Undo Information1, Undo Data Versus Redo Data, Monitoring Undo, Administering Undo, Configuring Undo Retention, Guaranteeing Undo Retention, Sizing the Undo Tablespace, Using the Undo Advisor	7
	SECTION-II	
3	**Performing Flashback**: Objectives, Flashback Technology: Benefits, When to Use the Flashback Technology, Flashing Back Any Error, Flashback Database: Overview, Reducing Restore Time, Considerations, Enabling Flashback Database Flashback Table, Flashback Drop: Overview, Flashback Time Navigation, Flashback Query, Flashback Versions Query, Flashback Transaction Query	7
4	**Moving Data** :Objectives, Moving Data: General Architecture, Directory Object: Overview, Creating Directory Objects, SQL*Loader: Overview, Loading Data with SQL*Loader, SQL*Loader Control File, Loading Methods, Data Pump: Overview, Data Pump: Benefits, Data Pump Export and Import: Overview, Data Pump Utility: Interfaces and Modes, Fine-Grained Object Selection, Advanced Feature: Sampling, Export Options: Files, Data Pump File Locations, Scheduling and Running a Job, Data Pump File Naming and Size	8

Practical Content:	
● List of programs specified by subject teacher based on above mention topics.	
Text Books:	
1	Oracle Database 10G, The Complete reference by kevinloney- Tata Mcgraw Hill Education Pvt. Ltd Publication ,1st edition (September 28, 2004).
Reference Books:	
1	Oracle DBA Bible, by Janathan Gennick, Carol McCullough-Dieter and Gerrit- Jan Linker, WILEY-Dreamtech Publication,1st Edition 2000.
2	Using Oracle, by William G. Page - Que Pub; Special edition (March 9, 1998)
MOOC/Certification Courses:	
1	https://nptel.ac.in/
2	https://docs.oracle.com/en/database/oracle/oracle-database/
3	https://www.vlab.co.in/
4.	https://nptel.ac.in/courses/106106220
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