Krantiguru Shyamji Krishna Verma Kachchh University
Post Graduate Diploma in Computer Applications
Semester: II

Paper Code: CCCS206	**Total Credit :** 4
Title of Paper: Database Management System	

Unit	Description	Weighting
I	Basic Concepts : data, database, database systems, database management systems, instance, schema, Database Applications, Purpose and Advantages of Database Management System (over file systems), View of Data (Data Abstraction, Data Models), Database Languages (DML, DDL), Relational Databases (Tables, DML, DDL)	20%
II	Design Phases, Entity Relational Model (Entity Sets, Relationship Sets, Attributes), Constraints (Mapping Cardinalities, Keys, Participation Constraints), Entity Relationship Diagram, Weak Entity Set, Extended E-R Features (Generalization, Specialization and Aggregation), E-R Notations, Examples of ERD	20%
III	Functional Dependency and Normalization (1NF, 2NF and 3NF)	20%
IV	Structure of Relational Databases (Basic Structure, Database Schema, Types of Keys), Fundamental Relational Algebra Operations (Select, Project, Union, Set Difference, Cartesian Product and Rename Operator), Additional Relational Algebra Operators (Set Intersection, Natural Join, Division Operator, Assignment Operator), Examples	20%
V	Transaction Concept (Transaction State, Basic Definitions, ACID Property), Concurrent Execution (Reasons of Concurrent Execution, Serial and Concurrent Schedule), Serializability (Conflict and View Serializability), Recoverability of Schedules (Recoverable Schedule and Cascade-less Schedule), Lock-based Protocol (Types of Lock and Deadlock Concept), Two-Phase Locking Protocol. Working with MS-Access	20%

Basic Text & Reference Books :-	
1.	Silberschatz, Korth, Sudarshan, “Database System Concepts”, 5th Edition, McGraw Hill Publication
2.	Silberschatz, Korth, Sudarshan, “Database System Concepts”, 5th Edition, McGraw Hill Publication
3.	MS-Access Manuals.

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Title of Paper: Database Management System	**Total Marks :** 70 **Time :** 3 Hrs

Unit	Description		Total Marks
I	Q.1 (A) Answer the Following. (Definitions, Blanks, Full Forms, True/False, Match the Following)	06	14
	Q.1 (B) Medium / Long Questions. (With Internal Option)	08	
II	Q.2 (A) Short / Medium Questions. (With Internal Option)	06	14
	Q.2 (B) Medium / Long Questions on E-R Diagram. (With Internal Option)	08	
III	Q.3 (A) Case Study of Normalization (With Internal Option)	06	14
	Q.3 (B) Case Study of Normalization (With Internal Option)	08	
IV	Q.4 (A) Short / Medium Questions (With Internal Option)	06	14
	Q.4 (B) Medium / Long Questions. (With Internal Option)	08	
V	Q.5 (A) Short / Medium Questions (With Internal Option)	06	14
	Q.5 (B) Medium / Long Questions. (With Internal Option)	08	