Text Books:

1. Abraham Silberschatz, Peter Baer Galvin, Greg Gagne: Operating System Principles, 8th edition, Wiley India, 2009.
   (Listed topics only from Chapters 1 to 12, 17, 21)

Reference Books:

1. D.M Dhamdhere: Operating systems - A concept based Approach, 2nd Edition, Tata McGraw- Hill, 2002.
2. P.C.P. Bhatt: Introduction to Operating Systems: Concepts and Practice, 2nd Edition, PHI, 2008.
3. Harvey M Deital: Operating systems, 3rd Edition, Pearson Education, 1990.

DATABASE MANAGEMENT SYSTEMS

Subject Code: 10CS54	**I.A. Marks : 25**
Hours/Week : 04	**Exam Hours: 03**
Total Hours : 52	**Exam Marks: 100**

PART - A

UNIT – 1 **6 Hours**

Introduction: Introduction; An example; Characteristics of Database approach; Actors on the screen; Workers behind the scene; Advantages of using DBMS approach; A brief history of database applications; when not to use a DBMS.

Data models, schemas and instances; Three-schema architecture and data independence; Database languages and interfaces; The database system environment; Centralized and client-server architectures; Classification of Database Management systems.

UNIT – 2 **6 Hours**

Entity-Relationship Model: Using High-Level Conceptual Data Models for Database Design; An Example Database Application; Entity Types, Entity Sets, Attributes and Keys; Relationship types, Relationship Sets, Roles and Structural Constraints; Weak Entity Types; Refining the ER Design; ER Diagrams, Naming Conventions and Design Issues; Relationship types of degree higher than two.

UNIT – 3 **8 Hours**

Relational Model and Relational Algebra : Relational Model Concepts; Relational Model Constraints and Relational Database Schemas; Update

H.O.D.
Dept. Of Computer Science & Engineering
Alva's Institute of Engg. & Technology
Mijar, MOODBIDRI - 574 225

Operations, Transactions and dealing with constraint violations; Unary Relational Operations: SELECT and PROJECT; Relational Algebra Operations from Set Theory; Binary Relational Operations : JOIN and DIVISION; Additional Relational Operations; Examples of Queries in Relational Algebra; Relational Database Design Using ER- to-Relational Mapping.

UNIT – 4 **6 Hours**

SQL – 1: SQL Data Definition and Data Types; Specifying basic constraints in SQL; Schema change statements in SQL; Basic queries in SQL; More complex SQL Queries.

PART - B

UNIT – 5 **6 Hours**

SQL – 2: Insert, Delete and Update statements in SQL; Specifying constraints as Assertion and Trigger; Views (Virtual Tables) in SQL; Additional features of SQL; Database programming issues and techniques; Embedded SQL, Dynamic SQL; Database stored procedures and SQL / PSM.

UNIT – 6 **6 Hours**

Database Design – 1: Informal Design Guidelines for Relation Schemas; Functional Dependencies; Normal Forms Based on Primary Keys; General Definitions of Second and Third Normal Forms; Boyce-Codd Normal Form

UNIT – 7 **6 Hours**

Database Design -2: Properties of Relational Decompositions; Algorithms for Relational Database Schema Design; Multivalued Dependencies and Fourth Normal Form; Join Dependencies and Fifth Normal Form; Inclusion Dependencies; Other Dependencies and Normal Forms

UNIT – 8 **8 Hours**

Transaction Management: The ACID Properties; Transactions and Schedules; Concurrent Execution of Transactions; Lock- Based Concurrency Control; Performance of locking; Transaction support in SQL; Introduction to crash recovery; 2PL, Serializability and Recoverability; Lock Management; Introduction to ARIES; The log; Other recovery-related structures; The write-ahead log protocol; Checkpointing; Recovering from a System Crash; Media Recovery; Other approaches and interaction with concurrency control.

Text Books:

1. Elmasri and Navathe: Fundamentals of Database Systems, 5th Edition, Pearson Education, 2007.

H. O. D.
Dept. Of Computer Science & Engineering
Alva's Institute of Engg. & Technology
Mijar, MOODBIDRI - 574 225

(Chapters 1, 2, 3 except 3.8, 5, 6.1 to 6.5, 7.1, 8, 9.1, 9.2 except SQLJ, 9.4, 10)

2. Raghu Ramakrishnan and Johannes Gehrke: Database Management Systems, 3rd Edition, McGraw-Hill, 2003. (Chapters 16, 17.1, 17.2, 18)

Reference Books:

1. Silberschatz, Korth and Sudharshan: Data base System Concepts, 6th Edition, Mc-GrawHill, 2010.
2. C.J. Date, A. Kannan, S. Swamynatham: An Introduction to Database Systems, 8th Edition, Pearson Education, 2006.

COMPUTER NETWORKS - I

Subject Code: 10CS55	**I.A. Marks : 25**
Hours/Week : 04	**Exam Hours: 03**
Total Hours : 52	**Exam Marks: 100**

PART – A

UNIT - 1 **7 Hours**

Introduction: Data Communications, Networks, The Internet, Protocols & Standards, Layered Tasks,
The OSI model, Layers in OSI model, TCP/IP Protocol suite, Addressing

UNIT- 2 **7 Hours**

Physical Layer-1: Analog & Digital Signals, Transmission Impairment, Data Rate limits, Performance, Digital-digital conversion (Only Line coding: Polar, Bipolar and Manchester coding), Analog-to-digital conversion (only PCM), Transmission Modes, Digital-to-analog conversion

UNIT- 3 **6 Hours**

Physical Layer-2 and Switching: Multiplexing, Spread Spectrum, Introduction to switching, Circuit Switched Networks, Datagram Networks, Virtual Circuit Networks

UNIT- 4 **6 Hours**

Data Link Layer-1: Error Detection & Correction: Introduction, Block coding, Linear block codes, Cyclic codes, Checksum.

PART - B

H. O. D.
Dept. Of Computer Science & Engineering
Alva's Institute of Engg. & Technology
Mijar, MOODBIDRI - 574 225