CC – X - DATABASE MANAGEMENT SYSTEMS

UNIT - I

Introduction – History of database systems - Database system applications – Database systems vs File systems – View of data: Data abstraction – Instances and Schemas – Database users and administrators - Transaction management – Database system structure – Advantages and disadvantages

UNIT - II

Database Models: Basic concepts and structure of Entity relationship data model, Relational data model, Object-oriented data model, Object-relational data model, Network data model and Hierarchical data model . Integrity and security – Normalization – Constraints - Indexing and Hashing

UNIT - III

SQL basics – SQL languages: DDL, DML, TCL, DCL and non procedural languages - MySQL data types, operators and functions – Working with databases and tables – working with data – Joins – Sub queries – Transactions. Introduction to PL/SQL - simple PL/SQL programs

UNIT - IV

Managing scientific data: Introduction – Challenges faced in the integration of biological information – Data management and data integration in bioinformatics – Issues to address while designing a biological information system

UNIT - V

SRS: An integration platform for databanks and analysis tools in bioinformatics - The Kleisli query system as a backbone for bioinformatics data integration and analysis - Integration challenges in gene expression data management – Discovery link

Reference Books:

1. Abraham Silberchatz, Henry F. Korth, S. Sudharshan, Database System Concepts (5th Edition), McGraw Hill, 2002(Text book for units I & II).
2. James Martin, Computer database organization, Prentice Hall of India, 1977.
3. James Martin, Principles of Database management, Prentice Hall of India, 1976.
4. Bipin C. Desai, An introduction to database systems, Galgotia publications pvt. Ltd., New Delhi, 2003(Text book for units I & II).
5. Peter Rob Carlos Coronel, Database systems, design, implementation & management, Course technology, 2000.
6. Database systems – A practical approach to design, implementation and management, Thomas cannolly and Carolyn begg, Pearson Education, 2002.
7. Vikram Vaswani, The Complete Reference MySQL, Tata McGraw-Hill, New Delhi, 2002 (Text book for unit III).
8. Zoe Lacroix and Ternce Critchlow, Bioinformatics - Managing Scientific Data, Morgan Kaufmann publishers, 2003 (Text book for units IV & V).