

Paper Code: HCSCR4102T	Database Management Systems (Theory)	Marks: 60
S NO	Topic	No. of Periods
Group A		27
1.	Fundamental concepts of DBMS; Purpose of Database Systems; Data Abstraction: Physical, Conceptual and External Levels; Data Models; Database Languages; Database Users; Database Manager; Database Administrator; DBMS Structure.	9
2.	Entity Relationship Model: Entity Sets; Relationship Sets; Mapping Constraints; Keys; E R Diagrams; Strong and Weak Entity Sets; Extended ER Features: Specialization/Generalization, Aggregation.	9
3.	Relational Model: Structure of Relational Databases; Database Schema; Query Languages: Relational Algebra: Fundamental Operations, Additional Operations; Tuple and Domain Relational Calculus; Structured Query Languages	9
Group B		25
4.	Database design: Constraints: Domain Constraints; Referential Integrity; Functional Dependencies, Normalization: 1NF, 2NF, 3NF and BCNF	5
5.	File Organization: Operations on files, Records: Fixed length, Variable Length, Sequential File Organization, Indexing structures for files (Primary index, secondary index, clustering index), Multilevel indexing using B and B+ trees. Hashing: Hash functions; Static and Dynamic Hashing.	7
6.	Transaction Processing: ACID properties, concurrency control	5
7.	Introduction to Distributed Databases: Introduction; Comparison with traditional databases; DDBMS Components; Fragmentation, Replication, Allocation.	8
Total		52
Books and References:		
1. R. Elmasri, S.B. Navathe, Fundamentals of Database Systems 6th Edition, Pearson Education, 2010.		
2. A. Silberschatz, H.F. Korth, S. Sudarshan, Database System Concepts 6th Edition, McGraw Hill, 2010.		
3. R. Ramakrishnan, J. Gehrke, Database Management Systems 3rd Edition, McGraw-Hill, 2002.		
4. Distributed Databases: Principles and Systems; Stefano Ceri, Giuseppe Pelagatti, Tata McGraw Hill		

Paper Code: HCSCR4102P	Database Management Systems (Practical)	Marks: 40
---------------------------	--	-----------