MUTHAYAMMAL ENGINEERING COLLEGE
(An Autonomous Institution)
(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)
Rasipuram - 637 408, Namakkal Dist., Tamil Nadu.

Department of Information Technology
Question Bank - Academic Year (2020-21)

Course Code & Course Name : 19ITC03/Database Management Systems

Year/Sem/Sec : II/III

Unit-I: Introduction

Part-A (2 Marks)

1. Who is a DBA? What are the responsibilities of a DBA?
2. What is a data model? List the types of data model used.
3. Define database management system.
4. List any eight applications of DBMS.
5. Give the levels of data abstraction
6. What are the components of storage manager?
7. Enumerate about an entity relationship model
8. Why null value might be introduced into database?
9. Compare between weak and strong entity sets
10. Difference between tuple relational calculus and domain relational calculus.

Part-B (16 Marks)

Unit-1

1. Discuss in detail about database system architecture with neat diagram. May 2012, May 2011, May 2010
2. Explain the significant difference between a file processing system and DBMS
3. Describe E-R model with neat diagram. May 2012
4. Discuss the fundamental operations in the relational algebra
5. Explain the applications of database in details

Unit-II : SQL & QUERY OPTIMIZATION

Part-A (2 Marks)

1. Define the terms i) DDL ii) DML
2. What is embedded SQL? What are its advantages?
3. Enumerate about Candidate key, Primary Key, Super key and Foreign Key?

4. How SELECT operation and PROJECT operation work on Database?
5. Give the general form of SQL query.
6. List the use of Rename operation.
7. Show the set operations of SQL.
8. What are aggregate functions? And list the aggregate functions supported by SQL?
9. Illustrate the process of Query Optimization.
10. Define Query Processing.

Part-B (16 Marks)

1. Explain DDL,DML,TCL commands with example queries. May 2008
2. What are aggregate functions? And list the aggregate functions supported by SQL
3. Describe the features of embedded SQL and dynamic SQL. Give suitable examples. Nov 2010
4. Describe Query Processing and Optimization
5. Explain briefly about Tuple relational calculus

Unit-III : Relational Database Design And Transactions

Part-A (2 Marks)

1. Define Functional Dependency
2. List the pitfalls in Relational Database Design
3. What is normalization?
4. List the properties of decomposition.
5. Enumerate about Transactions.
6. Define the phases of two phase locking protocol
7. Briefly write The ACID Properties
8. When is a transaction rolled back?
9. Summarize about Wait-Die and Wound-Wait
10. What are the two statements regarding transaction?

Part-B (16 Marks)

1. Explain the role of Functional Dependencies (FD) in the process of Normalization
2. State the goal of Decomposition/Normalization. Explain the different level of Normalization with examples
3. Illustrate the different state of Transaction processing
4. Explain about need for concurrency control and properties of Transaction
5. What are the different types of schedules are acceptable for recoverability?

Unit-IV : System Architecture

Part-A (2 Marks)

1. Differentiate open hashing and closed hashing (overflow chaining) Closed hashing (overflow chaining)

2. What is database tuning?

3. What is meant by software and hardware RAID systems?

4. Compare Dense index and sparse index.

5. List the types of storage devices.

6. What are a block and a block number?

7. What are the techniques to be evaluated for both ordered indexing and hashing?

8. What is linear probing?

9. Summarize the bit level striping and block level striping.

10. What is hashing file organization?

Part-B (16 Marks)

1. What is meant by file organization? Explain fixed and variable length records.
2. Explain briefly about RAID.
3. Detail Static hashing and Hash file organization,Hash indices.
4. Explain the concept of Primary file organization and its types.
5. Explain detail about B Tree and B+ Tree.

Unit-V : Database Security

Part-A (2 Marks)

1. Define mobile database with an example.

2. List the markup languages which are suitable for web databases.

3. Write two examples of multimedia databases and multimedia structure.

4. Define spatial database.

5. Differentiate distributed database and normal database

6. List the Two types of intruders.

7. What is Database security?

8. Define Access Control.

9. Explain XML Database and XML Documents

10. List the Multimedia Applications.

Part-B (16 Marks)

1. Describe the benefits and drawbacks of i)Pipelined parallelism. ii)Inter query parallelism.

2. Define Intra query parallelism. Explain in details, the intra operation parallelism with necessary diagrams.

3. Explain Spatial and multimedia database.

4. Compare Security of statistical database and parallel database.

5. Explain Spatial and multimedia database.

Course Faculty **HoD**