

Subject Code: MC1331/R13

M C A - III Semester Regular/Supply Examinations, January - 2016

DATA BASE MANAGEMENT SYSTEMS

Time: 3 hours

Max Marks: 60

Answer any FIVE of the following

All questions carry equal marks.

1. a) Explain the typical components of the DBMS with neat diagram
b) Design an ER diagram for the Students information system taking in account atleast four entities. [6+6]

2. Consider the following schema for company database [12]

Employee (Name, ESSN, Salary, DNo, SuperSSN);

Department(DName, DNos, MGRSSN);

Project(PName, PNo, DNum);

Works_ON(ESSN, PNo, Hours);

Dependent(ESSN, DName, Sex);

Write the queries in **Relational Algebra** and **SQL**

- a) List the name of employees with atleast two dependants
b) find the name of employees who work on all projects controlled by department 5
c) Retrieve the name of managers who do not have female dependants
3. What is functional dependency? write an algorithm to find the minimal cover for a set of functional dependencies. Explain it with an example? [12]
4. Explain the three phases involved in ARIES algorithm with an appropriate example? [12]
5. Explain the following
a) Hash based indexing technique?
b) Tree based indexing technique [6+6]
6. What is meant by a VIEW ? How is a view created and dropped? Explain the problems associated with updating of views? [12]
7. a) Explain the SQL Aggregate operators with an example?
b) What is meant by database transaction? Explain its properties? [6+6]
8. a) What is Structural query language? Explain its advantages and disadvantages?
b) Explain the syntax of SELECT, CREATE and HAVING clauses of SQL? [6+6]

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