

**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.**

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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 dependents
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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