2009

Roll No. .....

Subject Code—606

M.C.S. EXAMINATION

(Third Semester)

MS-11

RDBMS

Time : 3 *Hours* *Maximum Marks* : 100

Note : Attempt any *Five* questions. All questions carry equal marks.

1. (a) What do you mean by RDBMS ? How does it differ from DBMS ? Discuss its characteristics also. **10**

(b) Discuss the sequence of events when an application program reads a record by mean of DBMS. **10**

2. (a) Discuss the concept of generalization and aggregation by using suitable example. **10**

(b) What is Relational Algebra ? Discuss its various operators. Why are some operators known as set operators ? **10**

3. (a) Discuss Database Design Process. **10**

(b) If a relational schema is in 4 NF, what can be said about it being in BCNF ? Justify your answer with example. **10**

4. What do you mean by concurrency ? How concurrency control is done in distributed DBMS ? Give one scheme for controlling concurrency based upon time stamp. **20**

5. (a) Compare Relational, Hierarchical and Network models. **10**

(b) Write an algorithm to find closure of a set X under given set of Functional dependencies. **10**

6. (a) Discuss the deferred update technique of recovery. What are advantages and disadvantages of this technique ? Why is it called No Undo/Redo Method ? **15**

(b) Discuss various database languages. **5**

7. (a) What is query processing ? Discuss various algorithms for executing query operations. **10**

(b) Justify the need of recovery mechanism of database. Give two recovery techniques assuming concurrent execution of transactions. **10**

8. Explain the following :

(i) ACID Properties of Transaction

(ii) Referential Integrity

(iii) Data Fragmentation

(iv) Multiversion concurrency control techniques. **20**