Re-appear 2009

Roll No. .....

Subject Code—2076

M.C.A. (Second Year) EXAMINATION

(5 Years Integrated Course)

MCA-202

DATABASE MANAGEMENT SYSTEM

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

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

1. Explain the following :
   (a) Data Dictionary
   (b) Conceptual data model
   (c) Data Languages
   (d) Data Independence
   (e) Responsibilities of DBA. 5×4=20

2. Explain network data model in detail. 20

3. (a) How does SQL implement the entity integrity and referential integrity constraints of the relational data model ? Explain with an example. **10**

(b) What are the relational algebraic operations developed specifically for a relational database ? **10**

4. (a) What is functional dependence ? What are the possible sources of the information that defines the functional dependencies that hold among the attributes of a relation schema ? **10**

(b) Describe the concept of transitive dependency and explain how this concept is used to define 3NF. **10**

5. (a) Define query optimization and explain its significance for a DBMS. **10**

(b) Explain how heuristic query optimization is performed, with an example. **10**

6. (a) How does the granularity of data items affect the performance of concurrency control ? What factors affect selection of granularity size for data items ? **10**

(b) Discuss the main techniques for recovery from non-catastrophic transaction failures. **10**

7. (a) Why is data replication useful in DDBMS ? What typical units of data are replicated ? **10**

(b) Explain the architecture of client-server computing. **10**

8. Write short notes on the following :

(a) Serializability

(b) View in SQL

(c) Disadvantages of database system. **5,7,8**