CC682

M.C.A. EXAMINATION, 2020

(Third Semester)

(B Scheme) (Main & Re-appear)

(MCA)

MCA503

DATABASE MANAGEMENT SYSTEMS

Time : 2½ *Hours*]　　　　　[*Maximum Marks :* 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Four* questions in all. All questions carry equal marks.

1. Differentiate between Hierarchical and Relational Model. Specify levels of abstraction in detail.

(5)M-CC682　　　　**1**

2. (a) What is E-R model ? What are its features ? Explain.

   (b) What is a Data Model ? Explain Instances and Schemes.

3. What is Relational Model ? Explain Integrity constraints over relations with suitable examples.

4. (a) What is Relational Calculus ? Define various operations on Relational Calculus.

   (b) How can you reduce E-R diagrams to relations ? Discuss citing examples.

5. What is Data Redundancy ? Explain Boyce code normal form in detail.

6. (a) What is SQL ? What are NULL values ? Explain in detail.

   (b) What is Schema Refinement ? Also explain multivalued dependency.

7. What is Concurrency Control ? What are Locks and Locking protocols ? Explain.

8. (a) What is transaction management and transaction states ? Explain.

   (b) What is recovery system and recovery techniques ? Explain.