

**II Semester M.C.A. Examination, November 2021
(CBCS Scheme)
COMPUTER SCIENCE
MCA 202 T : Database Management System
Equivalent to (Y2K5/Y2K12 Database Management)**

Time : 3 Hours

Max. Marks : 70

Instructions : 1) Answer **any five** questions from Section – A.
2) Answer **any four** questions from Section – B.

SECTION – A

Answer **any five** of the following. **Each** question carries **six** marks. (5×6=30)

1. What are the main characteristics of DBMS ?
2. Explain 3-Schema Architecture with a neat sketch.
3. Explain different types of attributes with example.
4. What are functional dependencies ? What are database anomalies and its types ?
5. Discuss the role of DBA in brief.
6. Discuss the various types of join operations in relational algebra.
7. What is concurrency ? How does one handle concurrency in Database Management System ?
8. Discuss the ACID properties of a database transaction.

SECTION – B

Answer **any four** of the following. **Each** question carries **10** marks. (4×10=40)

9. What is data model ? Explain different categories of data models.
10. Write ER diagram for Hotel Management system with at least four entities.
11. What is Normalization ? Explain 3NF and BCNF.
12. Discuss the different DML commands in sql. with suitable example.
13. What is indexing ? Why is it necessary for Database Management System ?
Discuss types of indexes with necessary sketches.
14. Write a short note on the following :

1) Triggers.	3
2) Aggregate functions.	3
3) Two-phase locking protocol.	4