

Roll No.

MCA–13/M. Sc. (IT)–14

Advanced Database Management System

Master of Computer Applications/

Master of Science in Information Technology

(MCA–11/16, M. Sc. (IT)–12/16)

Fourth Semester, Examination, 2017

Time : 3 Hours

Max. Marks : 60

Note : This paper is of **sixty (60)** marks containing **three (03)** sections A, B and C. Learners are required to attempt the questions contained in these sections according to the detailed instructions given therein.

Section–A

(Long Answer Type Questions)

Note : Section ‘A’ contains four (04) long answer type questions of fifteen (15) marks each. Learners are required to answer *two* (02) questions only.

1. Explain the overall system structure of database management system.
2. What are data models ? Compare and contrast network, hierarchical and relational data model.
3. What is relational algebra ? How is it different from relational calculus ?
4. What is concurrency control ? How is it achieved in database systems ? Explain various concurrency control techniques.

Section-B**(Short Answer Type Questions)**

Note : Section 'B' contains eight (08) short answer type questions of five (05) marks each. Learners are required to answer *four* (04) questions only.

1. Compare and contrast database and file based system.
2. What is database administrator ? What are the responsibilities of Database Administrator ?
3. What is Entity relationship model ? Discuss its role in DBMS.
4. What do you mean by functional dependency ? How many types of functional dependency ? Discuss it through suitable example.
5. What is database security and integrity ? Write down steps to recover the database.
6. What do you mean by anomalies ? How many types of anomalies are there ? Explain all with suitable example in the context of un-normalized database.
7. What is the purpose of join in database ? Explain all the types of join.
8. Write a short note on Aggregation, Generalization and Specialization with suitable diagram.

Section-C**(Objective Type Questions)**

Note : Section 'C' contains ten (10) objective type questions of one (01) mark each. All the questions of this section are compulsory.

Write True *or* False :

1. The physical, relational database implementation of the data model is known as the schema.

2. DML is used to create, read, update and delete records in the database and to navigate between different records and types of records.
3. Data dictionary is the data about the data such as record and field definitions, synonyms, data relationships, validation rules, help messages, etc.
4. Raw data type can store unstructured data.
5. Foreign keys are pointers to the records of a different file in a database. These keys are how the database links the records of one type to those of another type.
6. Role is preferred method for enforcing data integrity.
7. A relation R which is in 3NF is also in 4NF.
8. If a relation is in 3NF, then it is also in BCNF.
9. A database has data and relationships.
10. The purpose of a database is to help people stop using spreadsheets.

