

Dr. Babasaheb Ambedkar Open University

Term End Examination July – 2026

Course: BCAR/ DCAR

Date: 07-07-2026

Subject Name: Database Management System

Time: 03:00pm to 05:15pm

Subject Code: BCAR-202/ DCAR-202

Total Marks: 70

Section A

Answer the following (Attempt any three)

30 Marks

1. Explain the properties of a database and differentiate between a Database Management System (DBMS) and a file-based system.
2. Describe degrees of abstraction in database design with diagram.
3. What is an Entity-Relationship (ER) model? Explain the types of entities and attributes with suitable examples.
4. Define the term 'Normalization'. Explain 1NF, 2NF & 3NF using an appropriate example.
5. Explain the concept of Data Integrity Constraints in a relational model.

Section B

Answer the following (Attempt any four)

20 Marks

1. Describe the key characteristics and benefits of using a database management system over a file-based approach.
2. Explain the concept of Logical and Physical data independence.
3. Define the types of keys & their use in a relational database
4. Explain the different types of relationships like 1:1, 1:M & M:N in an E-R model with examples.
5. Describe the various types of anomalies & operations on performed database.
6. What is the database development process? Briefly explain the requirements gathering and analysis stages.

Section C

Part – A (Multiple Choice Questions)

10 Marks

1. A database is a shared collection of related data used to support the activities of a:
A. Module
B. Organization
C. Menu
D. Data record
2. The database management system (DBMS) is a collection of programs that enables users to:
A. Create and maintain databases
B. Control all access to databases
C. Both A and B
D. None of these
3. The separation of data definition from application programs is known as:
A. Data redundancy
B. Data isolation
C. Program-data independence
D. Data integrity
4. Which model represents data as a hierarchical tree structure?
A. Network model
B. Relational model
C. Hierarchical model
D. Object-oriented model
5. The degree of a table is defined as the number of:
A. Rows
B. Attributes (columns)
C. Records
D. Tables
6. Which normal form deals with removing transitive dependencies?
A. 1NF
B. 2NF
C. 3NF
D. BCNF
7. What is the standard database access language?
A. HTML
B. SQL
C. Java
D. Python
8. Which constraint ensures that a column does not contain duplicate values?
A. Primary Key
B. Unique
C. Null
D. Default
9. A relationship where a relationship exists between occurrences of the same entity set is:

- A. Unary
- C. Ternary

- B. Binary
- D. N-ary

10. Which of the following is an example of a derived attribute?

- A. Name
- B. Birthdate
- C. Age
- D. Salary

Part - B (Do as Directed)

10 Marks

1. Which strategies allow multiple users to access the same database simultaneously?
2. The term used for a row in a relational table is a _____.
3. A _____ is a subset of the database defined and dedicated for particular users of the system.
4. The _____ property ensures that no duplicate rows exist in a table.
5. A 'NULL' value in a database means the value is zero or blank. (True/False)
6. Normalization is the process of determining how much redundancy exists in a table. (True/False)
7. A _____ relationship is one where the primary key of the related entity contains the primary key component of the parent entity.
8. The ER model uses entities, attributes, and relationships to represent data. (True/False)
9. In a relational database, the primary key column cannot contain NULL values. (True/False)
10. SQL stands for _____.

!~~~~~ *Best of Luck* ~~~~~!