

Dr. Babasaheb Ambedkar Open University
Term End Examination February – 2026

Course	: BSCIT	Date	: 02/03/2026
Subject Code	: BSCIT-201	Time	: 11:30am to 01:45pm
Subject Name	: Database Management System	Duration	: 02.15 Hours
		Max. Marks	: 70

Section A

Answer the following (Attempt any three) (30)

1. List and explain various rules of Functional Dependencies?
2. Explain Join and types of Join with example.
3. What is Attribute? List and define various types of Attributes.
4. Define Entity-Relationship (ER) model. Discuss its components with diagrams.
5. Explain the concept of Normalization with various Normal Forms.

Section B

Answer the following (Attempt any four) (20)

1. Explain DDL, DML, and DCL commands with examples.
2. What is relational algebra? Explain the fundamental operations with examples.
3. Compare homogeneous and heterogeneous distributed databases.
4. Define Schema in brief.
5. What are the characteristics and benefits of a database?
6. List and define types of Integrity.

Section C

Part – A (Multiple Choice Questions) (10)

Q-1 Which of the following is NOT a component of DBMS?

- | | |
|--------------------|--------------------|
| A) Database Engine | B) Data Models |
| C) Compiler | D) Query Processor |

Q-2 Which of the following is considered a DBMS?

- | | |
|--------------|-----------------|
| A) Oracle | B) MySQL |
| C) MS Access | D) All of these |

Q-3 A collection of related attributes in DBMS is called:

- | | |
|-----------|-------------|
| A) Tuple | B) Relation |
| C) Record | D) Schema |

Q-4 Which of the following is a unary relationship?

- | | |
|-----------------------|----------------------|
| A) Teacher–Student | B) Manager–Employee |
| C) Employee–Dependent | D) Employee–Employee |

Q-5 The command CREATE TABLE belongs to which SQL category?

- | | |
|--------|--------|
| A) DML | B) DDL |
| C) DCL | D) TCL |

Q-6 File-based systems suffer mainly due to:

- | | |
|---------------------|-------------------|
| A) Data redundancy | B) Data isolation |
| C) Integrity issues | D) All of these |

Q-7 Which of the following is metadata?

- | | |
|--------------------|----------------|
| A) Data about data | B) Primary key |
| C) Record | D) Table |

Q-8 Which of the following is a concurrency control technique?

- A) Two-phase locking
- B) Recovery management
- C) Deadlock detection
- D) Data replication

Q-9 Which SQL clause is used to group tuples?

- A) WHERE
- B) GROUP BY
- C) ORDER BY
- D) HAVING

Q-10 Who created the first DBMS?

- A) E.F. Codd
- B) Charles Bachman
- C) Charles Babbage
- D) None of these

Part – B (State whether the following statements are true or false)

(10)

- 1 DBMS provides controlled access to the database.
- 2 In a relational table, each column is called a tuple.
- 3 Candidate Key is a minimal super key.
- 4 BCNF is stricter than 3NF.
- 5 DCL commands are used to retrieve data.
- 6 A weak entity set always has a partial key.
- 7 The `ROLLBACK` command in SQL is a TCL command.
- 8 Deadlock can be prevented by using the wait-die scheme.
- 9 Data Warehouse contains current operational data.
- 10 ER diagrams represent logical design of databases.
