



Term Evaluation (Odd) Semester Examination September 2025

Roll no.....

Name of the Course and semester: **BCA 3rd Semester**

Name of the Paper: **Introduction to Database Management System**

Paper Code: **TBC 302 / TBI 302 / TBD 302**

Time: 1.5 hour

Maximum Marks: 50

Note:

- (i) Answer all the questions by choosing any one of the sub questions
- (ii) Each question carries 10 marks.

- Q1. (10 Marks) (CO1)
- a. Explain in detail the differences between a File System and a Database Management System (DBMS).
- OR
- b. What do you mean by Data Independence? Discuss its types with examples. (CO1)

- Q2. (10 Marks) (CO2)
- a. Design an ER model for a University Database.
- The university database should include entities such as Students, Courses, and Professors. Clearly define:
- The entities and their key attributes.
 - The relationships among Students, Courses, and Professors.
 - The constraints such as cardinality (one-to-one, one-to-many, or many-to-many).
 - Any additional entities (e.g., Departments, Enrollment, Grades) that enhance the model.
 - Draw a well-labelled ER diagram representing the structure

- OR
- b. Explain mapping constraints in ER modeling. Give suitable examples. (CO2)

- Q3. (10 Marks) (CO1)
- a. Define DBMS languages and list the commands associated with each type.
- OR
- b. Explain any Five Codd's rule. (CO2)

- Q4. (10 Marks) (CO2)
- a. Explain the important role of keys in database design and data integrity. Describe different types of keys in DBMS with suitable examples.
- OR
- b. Define integrity constraints in the relational data model and list their types with examples. (CO1)

- Q5. (10 Marks) (CO2)
- a. Define the following terms:
- Schema and Instances
 - Generalization
 - Aggregation
 - Strong Entity and Weak Entity
 - Single Valued and Multi Valued attribute



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- b. Discuss the role of a Database Administrator (DBA). Explain the major responsibilities of a DBA in database management. (CO2)