Graphic Era HILL UNIVERSITY
Established by an Act of the State Legislature of Uttarakhand (Adhiniyam Sankhya 12 of 2011)
University under section 2(f) of UGC Act, 1956

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