

**NEP - Semester End Examination – October 2025**

Program: FY.B.Sc.IT – SEM I Course: Database Management System  
 Program Code: UGIT01 Course Code: NUIT102

Duration: **1 Hour** Max. Marks: **30**

**Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Draw neat diagrams wherever necessary.

Q. 1		Attempt any THREE of the following. (5 Marks each)	[15]	Course Outcome	Knowledge Level					
	(a)	Define DBMS. Explain advantages over file system with example.		CO1	L1					
	(b)	Explain different levels of data abstraction with suitable diagram.		CO2	L2					
	(c)	Describe relational database. List and explain its basic components.		CO3	L2					
	(d)	Construct an ER-diagram for a Library Management System with entities and relationships.		CO4	L5					
	(e)	Apply Codd's Rules to check whether a given database qualifies as a relational database.		CO5	L5					
	(f)	Differentiate between primary key and foreign key with example tables.		CO6	L3					
Q. 2		Attempt any THREE of the following. (5 Marks each)	[15]	Course Outcome	Knowledge Level					
	(a)	Explain the concept of First Normal Form (1NF) in DBMS.		CO1	L2					
	(b)	Define functional dependency. Explain its role in database design.		CO2	L1					
	(c)	List and explain SQL DDL commands with syntax and example.		CO3	L3					
	(d)	List any four aggregate functions used in SQL.		CO3	L1					
	(e)	Explain each ACID property of a transaction in DBMS.		CO4	L3					
	(f)	Design an employee table with suitable constraints (Primary Key, NOT NULL) and propose an optimized insertion strategy for handling 5 employee records.		CO3	L6					
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