R.N.G.PATEL INSTITUTE OF TECHNOLOGY-RNGPIT
(An Autonomous College U/s UGC Act 1956)

B.VOC SEMESTER-I, SEMESTER END EXAMINATION – SUMMER 2025

Subject Code: 1SD101	**Date: 06-06-2025**
Subject Name: DATABASE MANAGEMENT SYSTEM	
Time: 11:00 AM to 01:00 PM	**Total Marks: 50**

Instructions

1. It is **compulsory** for students to write **Enrolment No. /Seat No.** on the question paper.
2. Attempt all questions in the question paper.
3. The figures to the right of each question indicate full marks. Make suitable assumptions with proper justification wherever required.
4. Simple, non-programmable scientific calculators are permitted.
5. BL - Bloom's Taxonomy Levels (R-Remember, U-Understanding, A-Application, N-Analyze, E-Evaluate, C-Create), CO - Course Outcomes.

		Marks	BL	CO
Q.1	**Multiple-Choice Questions**	**[05]**		
(a)	A database helps to avoid which of the following?	1	U	1
	(i) Data Abstraction **(ii)** Data Redundancy			
	(iii) Data Normalization **(iv)** Data Indexing			
(b)	A weak entity always depends on:	1	R	2
	(i) A foreign key **(ii)** A strong entity			
	(iii) Aggregation **(iv)** A candidate key			
(c)	A materialized view is used to:	1	U	3
	(i) Store raw data **(ii)** Speed up query performance by storing precomputed results			
	(iii) Drop temporary tables **(iv)** Normalize data			
(d)	Which method is a solution to deadlocks in transaction systems?	1	A	4
	(i) Two-phase commit **(ii)** Log-based recovery			
	(iii) Wait-die or wound-wait **(iv)** Shared locks			
(e)	Which SQL command is used to remove a table from the database?	1	R	5
	(i) REMOVE **(ii)** DELETE			
	(iii) DROP **(iv)** TRUNCATE			

Q.2	**Attempt Any Three**	**[15]**		
	(a) Explain 3 level of architecture of DBMS in brief with diagram?	5	U	1
	(b) What is purpose and application of DBMS? What are the main functions of a database administrator?	5	R, U	1
	(c) Demonstrate specialization and generalization concepts in ER diagram with suitable example.	5	A	2
	(d) Explain Constraints with example.	5	U	2
Q.3	**Attempt Any Three**	**[15]**		
	(a) Draw E-R diagram for student management system.	5	A	2
	(b) Write short note on query processing.	5	U	3
	(c) Explain query optimization with diagram.	5	N	3
	(d) What is transaction? What are the functions of commit and rollback?	5	A	4
Q.4	**Attempt Any Three**	**[15]**		
	(a) Explain shared lock and exclusive lock in lock-based protocol.	5	U	4
	(b) What is Data Definition Language? List DDL statements and explain anyone with an example.	5	R	5
	(c) Explain cursor and its types.	5	U	5
	(d) What is trigger? Explain its type with their syntax	5	A	5

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