BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: BCA   SEMESTER : III
BRANCH: BCA   SESSION : MO/2024

SUBJECT: CN203 DATABASE MANAGEMENT SYSTEM

TIME: 3 Hours   FULL MARKS: 50

INSTRUCTIONS:
1. The question paper contains 5 questions each of 10 marks and total 50 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
4. Before attempting the question paper, be sure that you have got the correct question paper.
5. Tables/Data handbook/Graph paper etc. to be supplied to the candidates in the examination hall.

			CO	BL
Q.1(a)	What are the differences between physical data independence and logical data independence?	[5]	2	1
Q.1(b)	Discuss three-schema architecture of a DBMS.	[5]	2	1
Q.2(a)	What are the differences between specialization and generalization?	[5]	3	2
Q.2(b)	Write the formal definition of Tuple Relational Calculus.	[5]	2	2
Q.3(a)	What is decomposition? What are the different types of decomposition?	[5]	2	3
Q.3(b)	Why BCNF is superior to 3NF?	[5]	3	2
Q.4(a)	What is query processing? What are the phases of query processing?	[5]	2	3
Q.4(b)	What are query transformation rules? Discuss any five with example.	[5]	3	2
Q.5(a)	Draw a transition state diagram and discuss the typical states that a transaction goes through during execution.	[5]	2	2
Q.5(b)	What is two phase locking techniques? Discuss two deadlock prevention techniques.	[5]	3	2

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