Roll No……..

Course Code: 102404CS

Examination: NOV-DEC 2023

Course: DATABASE MANAGEMENT SYSTEM

Time Allowed: 3 Hours **Maximum Marks: 100**

Minimum Marks: 35

Note: Attempt all questions. Part (A) of each question is compulsory and carries 4 marks; attempt any two parts from part (B), (C) and (D) carrying 8 marks each.

Q1	A	Explain the purpose of database systems. Differentiate between file system and DBMS.	4
	B	Explain ER diagram with appropriate example.	8
	C	Explain 3 level architecture of DBMS.	8
	D	Write short notes on schema and instance	8
Q2	A	Explain join operators used in Relational Algebra.	4
	B	Explain Selection and projection set operations, renaming in relational algebra with any example.	8
	C	Discuss UNIQUE, NOT NULL, PRIMARY KEY, CHECK integrity constraint with example.	8
	D	Discuss tuple relational calculus and domain relational calculus in detail.	8
Q3	A	Define primary key and write SQL query for dummy table to create primary key.	4

	B	Write SQL query for each of the following: (i) Create table named as Std-Rec with the columns – Roll no, Name, Contact No, Dept. (ii) Add one more column (Address) to table Std-Rec. (iii) Add primary key constraint to table Std-Rec. (iv) Insert the following records into the table: 101 Shankar 1234567 Religion Madurai 102 Vivek 8910111 Mythology Kolkata 103 Arvind 2131415 Science Kolkata	8
	C	What are the views? Explain the operations that can be performed on views.	8
	D	Write short notes on trigger and give SQL query example.	8
Q4	A	Explain multivalued dependencies with an example.	4
	B	Define normalization. Explain 3 NF and BCNF.	8
	C	Explain functional dependency and its properties.	8
	D	Discuss first normal form and second normal form in detail.	8
Q5	A	What is B tree and B+ tree?	4
	B	Define transaction and explain the ACID properties of transaction.	8
	C	Explain serializability in detail.	8
	D	Explain two phase locking protocol. Also explain its drawbacks.	8

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