Code No: R2021121 **R20** SET - 1

II B. Tech I Semester Regular Examinations, Feb/March - 2022
DATABASE MANAGEMENT SYSTEMS
(Com to IT, CSE (AIML), AI, DS, CSE (AIDS), AIDS, AIML)

Time: 3 hours Max. Marks: 70

Answer any **FIVE** Questions each Question from each unit
All Questions carry **Equal** Marks
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1	a)	What is a data model? What are the different data models? Explain E-R model and relation model briefly.	[7M]
	b)	Differentiate between File system and DBMS?	[7M]
		Or	
2	a)	Discuss in brief about the characteristics of DBMS?	[7M]
	b)	Explain in brief about the Client Server architecture for the database?	[7M]
3	a)	List and explain the common data types available in SQL.	[7M]
	b)	Explain the importance of Null values in Relational Model	[7M]
		Or	
4	a)	Write SQL Queries for following set of tables: EMPLOYEE (EmpNo, Name, DoB, Address, Gender, Salary, DNumber) DEPARTMENT (DNumber, Dname, ManagerEmpNo, MnagerStartDate). i) Display the Age of 'male' employees. ii) Display all employees in Department named 'Marketing'. iii) Display the name of highest salary paid 'female' employee. iv) Which employee is oldest manger in company? v) Display the name of department of the employee 'SMITH'.	[7M]
	b)	Discuss in brief about arithmetic and logic operations in SQL?	[7M]
5	a)	What is Entity set? And also define Relationship set. List and explain the symbols used to draw ER Diagram.	[7M]
	b)	Explain the following SQL constructs with examples: (i) order by (ii) group by and having (iii) as select (iv) schema.	[7M]
		Or	
6	a)	Define the following terms and give examples. (i) Cardinality (ii) Unary relationships (iii) aggregation (iv) specialization.	[7M]
	b)	Explain in brief about different types of joins in SQL.	[7M]
7	a)	Given Relation, R=(A,B,C,D,E,F,G) and Functional Dependencies F={ {A,B}→{C}, { A,C}→{B}, {A,D}→{E}, {B}→{D}, { B,C}→{A}, {E}→{F}}. Check whether the following decomposition of R into R1=(A,B,C), R2=(A,C,D,E) and R3=(A,D,F) is satisfying the lossless Decomposition property	[7M]
	b)	What are the problems caused by redundantly storing information? Explain	[7M]
		Or	

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8	a)	What is lossless join decomposition? Explain the same with an example.	[7M]
	b)	Explain two phase locking for ensuring serializability.	[7M]
9	a)	Explain how Concurrency control can be achieved with locking methods.	[7M]
	b)	What are the benefits of using dynamic indexing? Explain in detail B+ tree file Organization.	[7M]

Or

10	a)	Consider the following schedule of three transactions T1: r1(X), w1(X); T2: w2(X); and T3: w3(X) Schedule S: r1(X); w2(X); w1(X); w3(X); Check whether the Schedule S is view equivalent to any serial schedule or not? Give Justification to your answer with neat explanation.	[7M]
	b)	Discuss Write – Ahead log protocol.	[7M]