Code: 20A05401T

R20

B.Tech II Year II Semester (R20) Regular & Supplementary Examinations August/September 2023

DATABASE MANAGEMENT SYSTEMS

(Common to CSE, IT, AI&DS, CSE (AI&ML), CSE (AI), CSE (IoT), CSE (DS) and CS&D)

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

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1		Answer the following: (10 X 02 = 20 Marks)	
	(a)	Differentiate between data and information.	2M
	(b)	What are the various levels of database architecture?	2M
	(c)	Define database schema.	2M
	(d)	Define trigger.	2M
	(e)	What is composite attribute?	2M
	(f)	What is super type entity set?	2M
	(g)	Define query optimization.	2M
	(h)	What is view?	2M
	(i)	What is durability of transaction?	2M
	(j)	What is deadlock?	2M

PART – B

(Answer all the questions: 05 X 10 = 50 Marks)

2	(a)	Explain characteristics of DBMS.	8M
	(b)	Define data independence.	2M
		OR	
3		Explain various levels of database system with neat diagram.	10M
4	(a)	Create a procedure in SQL to perform insert and update operations of Student database.	6M
	(b)	Explain aggregate functions in SQL with example.	4M
		OR	
5	(a)	Explain set operations in SQL with examples.	6M
	(b)	Explain DML commands in SQL with examples.	4M
6		Explain various components of E-R model with notations and examples.	10M
		OR	
7	(a)	Explain super type and sub type relationship in E-R model with example.	6M
	(b)	Create E-R diagram for STUDENT and COURSE entity types with relationship ADMITS.	4M
8	(a)	Explain query optimization with example.	8M
	(b)	Define materialized view.	2M
		OR	
9		Explain natural join, inner join and outer join operations with examples.	10M
10	(a)	Explain log based recovery mechanism from failure state of database.	6M
	(b)	Explain various states of transaction.	4M
		OR	
11		Explain timestamp based protocol for ensuring serializabiliy of concurrent executions of transactions with example.	10M

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B.Tech II Year II Semester (R20) Regular & Supplementary Examinations April/May 2024

DATABASE MANAGEMENT SYSTEMS

(Common to IT, CSE, AI&DS, CSE(AI&ML), CSE(AI), CSE(IOT), CSE(DS), CSIT and CS&D)

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

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1		Answer the following: (10 X 02 = 20 Marks)	
	(a)	What is the purpose of the PRIMARY KEY constraint in a relational database?	2M
	(b)	Write about the roles of a DBA.	2M
	(c)	Distinguish between NULL and NOT NULL.	2M
	(d)	Why do we need joins?	2M
	(e)	Define composite attribute. Give an example for the same.	2M
	(f)	In what way does an attribute differ from an entity? Explain.	2M
	(g)	What is a multi-valued dependency in DBMS?	2M
	(h)	Distinguish between a multi-valued dependency and a join dependency.	2M
	(i)	What is a transaction? Give example.	2M
	(j)	Give brief description about view serializability.	2M

PART – B

(Answer all the questions: 05 X 10 = 50 Marks)

2	Write and explain the different levels of view in database management system.	10M
	OR	
3	With the help of suitable example, explain the various relational algebra operators.	10M
4	With the help of syntax and example, explain the various Data Definition Language commands.	10M
	OR	
5	Explain the role of OLAP in database management systems.	10M
6	A social media platform wants to store user profiles, posts, comments, likes, and shares. Design an ER diagram for this data.	10M
	OR	
7	Why do we need normalization? Explain the first normal form with a suitable example.	10M
8	How can we transform relational expressions? Explain in detail.	10M
	OR	
9	Write the procedure to measure the query cost. Explain with an example.	10M
10	Describe in detail about the different lock based protocols.	10M
	OR	
11	Discuss in detail about the role of buffer management in recovery process.	10M

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