Code No: P21ITT05

HALL TICKET NUMBER

PACE INSTITUTE OF TECHNOLOGY & SCIENCES::ONGOLE
(AUTONOMOUS)
II B.TECH ISEMESTER END REGULAR EXAMINATIONS, JAN - 2023
DATABASE MANAGEMENT SYSTEMS
(Common to CSE(IOTCSBT),AIDS,AIMLBranches)

Time: 3 hours Max. Marks: 70

Answer all the questions from each UNIT (5X14=70M)

Q.No.		Questions	Marks	CO	KL
		UNIT-I			
1.	a)	Compare and Contrast file Systems with database systems.	[7M]	1	
	b)	Discuss about different types of Data models.	[7M]	1	
		OR			
2.	a)	Discuss the Client - Server Architecture for DBMS	[7M]	1	
	b)	Differentiate between physical and logical data independence.	[7M]	1	
		UNIT-II			
3.	a)	Consider the following relational schema and write the SQL queries Emp (SSN, Name, MGR_SSN, Salary, Dno) Dept (Dno, Dname, Mgrssn) (i) Display the names of the employees in the descending order of their salaries. (ii) Retrieve the names of the employees working in 'CSE' department. (iii) Retrieve the department number (DNo), number of employees in each department and average salary of each department. (iv) Retrieve the names of employees who have no supervisors.	[7M]	2	
	b)	Consider the following relational schema and write the SQL queries Emp (SNO, Name,age,salary,City) (i)Insert the following values (a) 1,Babu,37,23000.00,Hydrabad (b)2,Giri,45,340000.00,Vijayawada (ii) Delete the row from the table whose age is 45 (iii)Update the name and age of employee whose sno is 2	[7M]	2	
		OR			
4.	a)	Consider the following table and write the quieries Date | ItemName | Unit_Sold 9/3/13 | Pen | 10 9/3/13 | Marker | 50 10/3/13 | Book | 50 10/3/13 | Stapler | 900 10/3/13 | Eraser | 15 (i) Display the total number of items sold for each item name. b) Delete the row where the item name is Book c) Update the Item name as Pencil in place of Marker.	[7M]	2	
	b)	List the DML commands in SQL with syntax.	[7M]	2	
		UNIT-III			
5.	a)	Define subquery and list different types of Subqueries	[7M]	3	

	b)	Differentiate between foreign key constraints and referential integrity constraints with suitable example	[7M]	3	
		OR			
6.	a)	Discuss the concept of inheritance in Data Modeling	[7M]	3	
	b)	Define specialization and Generalization with suitable example	[7M]	3	
		UNIT-IV			
7.	a)	Explain 3NF and BCNF with examples	[7M]	4	
	b)	Suppose you are given a relation R = (A, B, C, D, E) with the following functional dependencies: {CE → D, D → B, C → A}. a) Find all candidate keys. b) Identify the best normal form that R satisfies (1NF, 2NF, 3NF, or BCNF).	[7M]	4	
		OR			
8.	a)	Explain Normalization techniques using functional dependencies with relevant examples.	[7M]	4	
	b)	Give relation schemas for the following normal forms (i) 2NF but not in 3NF (ii) 3NF but not in BCNF	[7M]	4	
		UNIT-V			
9.	a)	Discuss about transaction recovery technique	[7M]	5	
	b)	Explain read-only, write-only and read-before-write protocols in serializability.	[7M]	5	
		OR			
10.	a)	Demonstrate searching a given element in B+ trees with example	[7M]	5	
	b)	Consider the transactions T1, T2, and T3 and the schedules S1 and S2 given below. T1: r1(X);r1(Z);w1(X);w1(Z) T2: r2(Y);r2(Z);w2(Z) T3: r3(Y);r3(X);w3(Y) S1: r1(X);r3(Y);r3(X);r2(Y);r2(Z); w3(Y);w2(Z);r1(Z);w1(X);w1(Z) S2: r1(X); r3(Y); r2(Y); r3(X); r1(Z); r2(Z); w3(Y); w1(X); w2(Z); w1(Z) Analyse which one of the schedules is conflict-serializable	[7M]	5	

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