

## PACE INSTITUTE OF TECHNOLOGY & SCIENCES::ONGOLE (AUTONOMOUS)

## IV B.TECH I SEMESTER END REGULAR EXAMINATIONS, NOV-2022 INTRODUCTION TO DATABASE MANAGEMENT SYSTEMS (CE Branch)

Time: 3 hours Max. Marks: 60

## Note: Question Paper consists of Two parts (Part-A and Part-B) PART-A

Answer all the questions in Part-A (5X2=10M)

Q.No.		Questions	Marks	CO	KL
1.	a)	Write any two advantages of Database systems over File Systems.	[2M]	1	1
	b)	Give examples of specialization and generalization.	[2M]	2	1
	c)	What is integrity constraint?	[2M]	3	1
	d)	What is the purpose of normalization?	[2M]	4	1
	e)	What is the purpose of indexing?	[2M]	5	1

## <u>PART-B</u> Answer One Question from each UNIT (5X10=50M)

Q.No.		Questions	Marks	CO	KL
		UNIT-I			
2.	a)	Explain different data models.	[5M]	1	2
	b)	What is Three tier schema architecture for data independence?	[5M]	1	1
		OR	•		•
3.		With a neat diagram explain Database system architecture.	[10M]	1	1
		UNIT-II	Į.		Į.
4.		Draw an ER Diagram to represent the following problem instance: A college has N number of departments. Each department offers M number of courses. Each department has P number of faculty. A faculty may work for more than one department. A student may register for a maximum of two courses offered by a single department.	[10M]	2	4
		OR			
5.	a)	Briefly explain attribute, tuple and relation.	[5M]	2	3
	b)	Briefly explain different constraints.	[5M]	2	3
	•	UNIT-III			•
6.		Write SQL queries to extract information from the below given relation.  Emp (id, name, gender, date_of_join, dept, designation, sal)  1. Select all the employees who have salary more than Rs. 10000  2. List the employees who have highest salary in each department.  3. List the senior most female employees of each department.  4. Print the department wise managers.  5. List the recently joined male employees of each department.	[10M]	3	1
		OR			
7.	a)	Demonstrate DDL and DML commands with example queries.	[5M]	3	2
	b)	Demonstrate DCL and table level constraints with sample queries.	[5M]	3	2

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					UN	IT-IV				
8.		What is Normalization? Explain the process of Normalization upto 3 <sup>rd</sup> normal form for the following sample table of data							4	1
		Tran sacti onN o	Custo merI D	Custome rName	ItemsPurcha sed(PartNo, PartDescript ion, UnitPrice)	CustomerDetails(Doo rNo, Street, Locality, City, PIN, State, Mobile, Email)	Total Amo unt			
		123	102	Anand	1.101, pen, 10 2.102, book, 20	12-35, Line#1, PrakashNagar, NRT, 522601, A.P, 9123456789, abc@xyz.com	30			
					(	OR				
9.	a)	What a sample		oroblems w		lata? Explain each prob	lem with	[5M]	4	1
	b) Explain BCNF Normal form in brief with suitable example.							[5M]	4	2
					UN	IT-V				
10.		Compare and contrast B-Tree with B+ Tree					[10M]	5	3	
	•				(	)R				
11.	a)	How indexing helps in fast retrieval data from the disk? Explain with a diagram.  How the Data is Stored in External Storage? Explain with a diagram.						[5M]	5	4
	b)							[5M]	5	4

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