

HALL TICKET NUMBER

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

IV B.TECH I SEMESTER END SUPPLEMENTARY EXAMINATIONS, MARCH-2023
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-AAnswer **all** the questions in Part-A (5X2=10M)

Q.No.	Questions	Marks	CO	KL
1.	a) Briefly explain any two key responsibilities of Database administrator.	[2M]	1	1
	b) Briefly explain any two key constraints.	[2M]	2	1
	c) What is the difference between Super Key and Primary Key?	[2M]	3	1
	d) Define functional dependency.	[2M]	4	1
	e) What are the data structures used for creating indices?	[2M]	5	1

PART-B

Answer One Question from each UNIT (5X10=50M)

Q.No.	Questions	Marks	CO	KL
UNIT-I				
2.	Briefly explain Database schema, instance and data independence.	[10M]	1	2
OR				
3.	a) What are the advantages of Database system over File System?	[5M]	1	1
	b) What are the applications of Database management systems?	[5M]	1	1
UNIT-II				
4.	a) Explain with examples: Sub class, Super class and Inheritance in ER model.	[5M]	2	2
	b) Explain the Relational Model in detail with examples.	[5M]	2	2
OR				
5.	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	6
UNIT-III				
6.	a) Demonstrate DML and DCL commands with example queries.	[5M]	3	2
	b) Demonstrate DDL and different constraints with sample queries.	[5M]	3	2
OR				

7.		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. 15000 2. Print the employee who has the highest salary. 3. List the senior most male employees of each department. 4. Print the average salary of each department. 5. List the recently joined male employees of each department.	[10M]	3	1												
UNIT-IV																	
8.	a)	With examples explain each problem that is caused by un-normalized redundant data.	[5M]	4	2												
	b)	Explain the problems related to Decomposition with sample data.	[5M]	4	2												
OR																	
9.		What is Normalization? Explain the process of Normalization upto 3 rd normal form for the following sample table of data.	[10M]	4	2												
		<table border="1"> <thead> <tr> <th>TransactionNo</th><th>CustomerID</th><th>CustomerName</th><th>ItemsPurchased (PartNo, PartDescription, UnitPrice)</th><th>CustomerDetails (DoorNo, Street, Locality, City, PIN, State, Mobile, Email)</th><th>Total Amount</th></tr> </thead> <tbody> <tr> <td>123</td><td>102</td><td>Anand</td><td>1.101, pen, 10 2.102, book, 20</td><td>12-35, Line#1, PrakashNagar, NRT, 522601, A.P, 9123456789, abc@xyz.com</td><td>30</td></tr> </tbody> </table>	TransactionNo	CustomerID	CustomerName	ItemsPurchased (PartNo, PartDescription, UnitPrice)	CustomerDetails (DoorNo, Street, Locality, City, PIN, State, Mobile, Email)	Total Amount	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			
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UNIT-V																	
10.	a)	How the Data is Stored in External Storage? Explain with a diagram.	[5M]	5	1												
	b)	What are two types of indexes? Explain with a diagram.	[5M]	5	2												
OR																	
11.		Compare and contrast B-Tree with B+Tree.	[10M]	5	2												
