Code No: P21ITT05

HALL TICKET NUMBER

PACE INSTITUTE OF TECHNOLOGY & SCIENCES::ONGOLE
(AUTONOMOUS)
II B.TECH ISEMESTER END SUPPLEMENTARY EXAMINATIONS, MARCH/APRIL - 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)	Discuss the Client - Server Architecture for DBMS	[7M]	1	
	b)	Differentiate between physical and logical data independence.	[7M]	1	
		OR			
2.	a)	Describe the three levels of data abstraction with a neat diagram.	[7M]	1	
	b)	Construct an E-R diagram for the library management system which has a database that shows the relationships between the entities such as a book, publisher, and member. State any assumptions you make.	[7M]	1	
		UNIT-II			
3.	a)	Consider the following schema and write the SQL queries Suppliers(sid: integer, sname: string, address: string) Parts(pid: integer, pname: string, color: string) (i) Find the pnames of parts for which there is some color. (ii)Find the snames of suppliers whose name ends with R. (iii)Find the all the supliers whose name is starts with A.	[7M]	2	
	b)	Consider the following tables and write the following SQL queries Employee Empid | Name | Dept_id 123 | Sam | 5 124 | Ram | 4 125 | Tom | 5 126 | Jeff | 4 Department D_id | Dept_name 4 | CSE 5 | IT (i) Display employee id and employee name from Employee table. (ii) Display all employee names from the employee table who work for department 5. (iii) Display Employee name and Department name for all employees	[7M]	2	
		OR			

<table>
<tr><td>4.</td><td>a)</td><td>Consider the below table and write the SQL queries:
<table>
<tr><th>RegNo</th><th>SName</th><th>Branch</th><th>Grade</th><th>Age</th><th>Gender</th></tr>
<tr><td>1</td><td>Kamala</td><td>CSE</td><td>6.5</td><td>23</td><td>F</td></tr>
<tr><td>2</td><td>Raju</td><td>CIVIL</td><td>9.2</td><td>22</td><td>M</td></tr>
<tr><td>3</td><td>Asritha</td><td>ECE</td><td>7.4</td><td>22</td><td>F</td></tr>
<tr><td>4</td><td>Vivek</td><td>CSE</td><td>8.7</td><td>23</td><td>M</td></tr>
<tr><td>5</td><td>Ramesh</td><td>IT</td><td>8.9</td><td>23</td><td>M</td></tr>
</table>
(i)Display the maximum and average Grade of CSE students alone with student names.
(ii) Rename the Gender column to Sex.
(iii) Display the minimum Grade in each branch.
(iv) Display all the student names that starts with ‘R’ or ‘A’</td><td>[7M]</td><td>2</td><td></td></tr>
<tr><td></td><td>b)</td><td>List the various data base languages in SQL with examples.</td><td>[7M]</td><td>2</td><td></td></tr>
<tr><td colspan="6">UNIT-III</td></tr>
<tr><td>5.</td><td>a)</td><td>Discuss the entity integrity and referential integrity constraints. Explain constraint Violations during update operations.</td><td>[7M]</td><td>3</td><td></td></tr>
<tr><td></td><td>b)</td><td>Differentiate between the following: with example In SQL queries
(i) Theta Join. (ii) Equi Join. (iii) Natural Join (iv) Outer Join.</td><td>[7M]</td><td>3</td><td></td></tr>
<tr><td colspan="6">OR</td></tr>
<tr><td>6.</td><td>a)</td><td>List the various operations that can be used to perform DBMS aggregation</td><td>[7M]</td><td>3</td><td></td></tr>
<tr><td></td><td>b)</td><td>Define View and write the syntax to create a view from single table and multiple tables.</td><td>[7M]</td><td>3</td><td></td></tr>
<tr><td colspan="6">UNIT-IV</td></tr>
<tr><td>7.</td><td>a)</td><td>Define 3NF and normalize the following table up to 3NF
EMPLOYEE table:
<table>
<tr><th>EMP_ID</th><th>EMP_NAME</th><th>EMP_PHONE</th><th>EMP_STATE</th></tr>
<tr><td>14</td><td>John</td><td>7272826385,
9064738238</td><td>UP</td></tr>
<tr><td>20</td><td>Harry</td><td>8574783832</td><td>Bihar</td></tr>
<tr><td>12</td><td>Sam</td><td>7390372389,
8589830302</td><td>Punjab</td></tr>
</table></td><td>[7M]</td><td>4</td><td></td></tr>
<tr><td></td><td>b)</td><td>Define Boyce Codd normal form with suitable example.</td><td>[7M]</td><td>4</td><td></td></tr>
<tr><td colspan="6">OR</td></tr>
<tr><td>8.</td><td>a)</td><td>Explain Functional dependency and Multi valued dependency with example.</td><td>[7M]</td><td>4</td><td></td></tr>
<tr><td></td><td>b)</td><td>Given a relation R (A, B, C, D) and Functional Dependency set FD = { AB → CD, B → C }, determine whether the given R is in 2NF? If not convert it into 2 NF.</td><td>[7M]</td><td>4</td><td></td></tr>
<tr><td colspan="6">UNIT-V</td></tr>
<tr><td>9.</td><td>a)</td><td>Discuss about transaction recovery technique</td><td>[7M]</td><td>5</td><td></td></tr>
<tr><td></td><td>b)</td><td>Discuss the B+ tree index structure in DBMS</td><td>[7M]</td><td>5</td><td></td></tr>
<tr><td colspan="6">OR</td></tr>
<tr><td>10.</td><td>a)</td><td>List the ACID properties. Explain the usefulness of each with example.</td><td>[7M]</td><td>5</td><td></td></tr>
<tr><td></td><td>b)</td><td>Discuss about conflict Serializability with an example.</td><td>[7M]</td><td>5</td><td></td></tr>
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