Reg. No.:

Name :

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Mid-Term Examinations, October 2021

Programme	:	**B.Tech – AI&ML,BHI**	Semester	:	**Fall 2021-22**
Course	:	**Database Management Systems**	Code	:	**CSE3001**
Faculty	:	**Ms.E.Suganya**	Slot/Class no.	:	**A11+A12+A13/ 0365**
Time	:	**1½ hours**	Max. Marks	:	**50**

Answer all the Questions

<table>
<tr><th>Q.No.</th><th>Sub. Sec.</th><th>Question Description</th><th>Marks</th></tr>
<tr><td>1</td><td></td><td>Explain the architecture of a typical database management system with a neat sketch.</td><td>10</td></tr>
<tr><td>2</td><td></td><td>• Bank have Customer.
• Banks are identified by a name, code, address of main office.
• Banks have branches.
• Branches are identified by a branch_no., branch_name, address.
• Customers are identified by name, cust-id, phone number, address.
• Customer can have one or more accounts.
• Accounts are identified by account_no., acc_type, balance.
• Customer can avail loans.
• Loans are identified by loan_id, loan_type and amount.
• Account and loans are related to bank’s branch.

Construct a clean and concise ER diagram for the Bank database.</td><td>10</td></tr>
<tr><td>3</td><td></td><td>Let us assume a table User_Personal as given below;

<table>
<tr><th>UserID</th><th>U_email</th><th>Fname</th><th>Lname</th><th>City</th><th>State</th><th>Zip</th></tr>
<tr><td>MA12</td><td>Mani@ymail.com</td><td>MANISH</td><td>JAIN</td><td>BILASPUR</td><td>CHATISGARH</td><td>458991</td></tr>
<tr><td>PO45</td><td>Pooja.g@gmail.co</td><td>POOJA</td><td>MAGG</td><td>KACCH</td><td>GUJRAT</td><td>832212</td></tr>
<tr><td>LA33</td><td>Lavle98@jj.com</td><td>LAVLEEN</td><td>DHALLA</td><td>RAIPUR</td><td>CHATISGARH</td><td>853578</td></tr>
<tr><td>CH99</td><td>Cheki9j@ih.com</td><td>CHIMAL</td><td>BEDI</td><td>TRICHY</td><td>TAMIL NAD</td><td>632011</td></tr>
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DA74	Danu58@gcom	DANY	JAMES	TRICHY	TAMIL NADU	645018	

a) State a key (candidate key) for Repayment.

b) Make the normalization to BCNF. Show the steps.

4		Give the following queries in the relational algebra using the relational schema. student(id, name) enrolledIn(id, code) subject(code, lecturer) 1. List the names of students enrolled in cs3020. 2. What are the codes of all the subjects taught? 3. List the names of students in at least two different subjects. 4. Who teaches cs1500 or cs3020? 5. Who teaches at least two different subjects? 6. What are the names of students in cs1500 or cs3010?	**10**
5		Consider the relational table given below and answer the following SQL queries: Employee(SSN-No, Name, Department, Salary) i. Write a query to create the above relation. ii. Write a query to list all the employees whose name starts with the letter L'. iii. Write a query to find the maximum salary given to employees in each department. iv. Write a query to find the number of employees working in 'accounts' department. v. Write a query to find the employees whose salary is >50,000 and department is Sales. vi. Write a query to find the employee who is getting the minimum salary.	**10**

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