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Roll No.....

CS-503 (GS)**B.E. V Semester Examination, June 2020****Grading System (GS)****Database Management System****Time : Three Hours****Maximum Marks : 70**

- Note:** i) Attempt any five questions.
ii) All questions carry equal marks.

- Discuss join dependencies and fifth normal form and explain why 5NF.
- Consider the following state of tables Depositor and Borrower

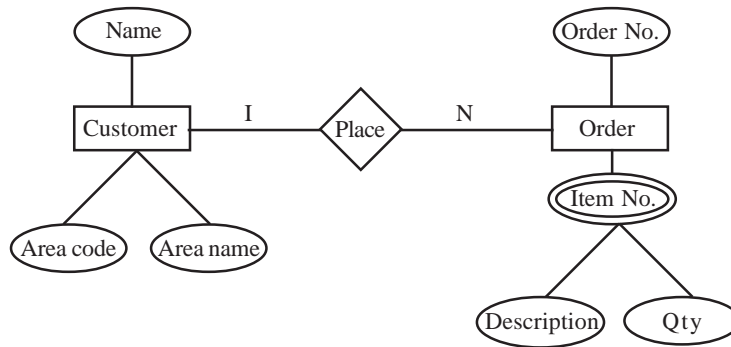
Customer_Name	Account Name	Customer_Name	Loan_Name
Ajay	A102	Vijay	L102
Vijay	A110	Shyam	L111
Ram	A111a	Ram	L110
Vikram	A112	Ajeet	L103
Depositor		Borrower	

Determine the results of the following operations

- Depositor X Borrower
 - Depositor * Borrower
 - Left outer join of Depositor and Borrower
 - Right outer join of Depositor and Borrower
 - Full outer join of Depositor and Borrower
- Explain various transaction states with description. Also explain state diagram.
 - What is timestamp? Explain timestamp-ordering protocol with Thomas write rule.
 - Differentiate between:
 - Generalization and specialization
 - Strong and weak entity
 - Physical and logical data independence
 - Explain the underlying concept of : specialization, generalization and aggregation.
 - Find out the minimal cover of the following FD set. Are the sets equivalent.
 F : $A \rightarrow B, AB \rightarrow C, D \rightarrow AC, D \rightarrow E$
 G : $A \rightarrow BC, D \rightarrow AE$

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7. Reduce the following ER diagram into tables.



Also explain composite attribute, Multivalued attribute, derived attribute.

OR

Draw an E-R diagram for a banking enterprise with almost all components and explain.

8. Write short notes on any Two:

- i) Cursors
- ii) DBMS Architecture
- iii) Distributed databases
