

R13**Code No: 813AP****JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****MCA III Semester Examinations, October/ November - 2020****DATABASE MANAGEMENT SYSTEMS****Time: 2 Hours****Max. Marks: 60**

Answer any five questions
All questions carry equal marks

- 1.a) What are the strong and weak entity sets? Explain.
b) Explain the ER diagram for Banking Enterprise. [6+6]
2. List and explain the different data models of databases. [12]
3. Consider the following employee database and give SQL expressions for each of the following queries.
Employee (Employee-name, street, city)
Works (Employee-name, Company-name, salary)
Company (Company-name, City)
a) Find the names and cities of residence of all employees who work for First Bank Corporation.
b) Find the names, street and cities of residence of all employees who work for first Bank Corporation. [6+6]
- 4.a) What are the complex integrity constraints in SQL?
b) With suitable example explain the difference between outer joins and Cartesian product operators in relational algebra. [6+6]
5. What are the problems caused by redundancy? Explain the importance of schema refinement. [12]
6. Explain the terms 1NF, 2NF, 3NF and BCNF. [12]
- 7.a) List and explain the ACID properties of Transactions.
b) Why does DBMS require concurrency control? Explain. [6+6]
- 8.a) Compare ISAM with B+ tree.
b) Define the following:
i) Clustered Indexes ii) Primary Indexes iii) Secondary Indexes [6+6]

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