

Code No: 114CQ

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**B.Tech II Year II Semester Examinations, November/December - 2020****DATABASE MANAGEMENT SYSTEMS****(Common to CSE, IT)****Time: 2 hours****Max. Marks: 75****Answer any Five Questions
All Questions Carry Equal Marks**

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1. Describe the overall system structure of DBMS. [15]
2. Construct an ER diagram for University admission system. Incorporate all the features in your diagram (basic and extended). [15]
- 3.a) Compare and contrast tuple relational calculus with domain relational calculus.
b) Discuss the expressive power of relational algebra. [8+7]
4. Consider the following database schema to write queries in SQL.
EMP (eno, ename, ecity)
COMPANY (cid, cname, ccity)
WORKS-FOR (eno, cid, salary)
MANAGES (eno, mno) {Manager is also an employee}
a) Find the names of employees working for virtusa.
b) Find the company names situated in Hyderabad
c) List the employees working/reporting to "Mohan". [5+5+5]
5. What is the need of schema refinement? Briefly explain the process. [15]
- 6.a) Compare 3NF with BCNF.
b) How to compute closure of F the set of functional dependency? [7+8]
- 7.a) What is a transaction? Discuss state transition diagram of it.
b) Explain rigorous 2PL protocol. [8+7]
- 8.a) How variable length attributes are handled in a record?
b) Compare sorted file organization with hash file organization. [7+8]

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