

Code No: 114CQ**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B.Tech II Year II Semester Examinations, July/August - 2021****DATABASE MANAGEMENT SYSTEMS****(Common to CSE, IT)****Time: 3 hours****Max. Marks: 75****Answer any Five Questions
All Questions Carry Equal Marks**

1. With a neat diagram explain the database architecture and its components. [15]
2. Construct an Entity-Relationship diagram for a multi-specialty hospital management system. Quote your assumptions and list the requirements considered by you for conceptual database design for the above system. [15]
- 3.a) Differentiate between nested query and correlated query.
b) What is a trigger? Discuss its types. [8+7]
4. Consider the following schema to write queries in Relational Algebra:
Sailor(sid, sname, age, rating)
Boats(bid, bname, bcolor)
Reserves(sid,bid,day)
a) Find the sailors who have reserved a boat with id 126.
b) Find the names and colors of the boats reserved by "Ramu".
c) Find the sailors who have reserved atleast two boats. [5+5+5]
5. Discuss the problems caused by redundancy. How to handle these problems in database management systems? [15]
- 6.a) Differentiate between 3NF and BCNF.
b) Give an account of multi valued dependencies. [7+8]
- 7.a) Does two phase locking protocol ensure conflict serializability? Justify your answer with suitable examples.
b) Explain multiple granularity locking. [8+7]
8. Write a note on the following:
a) ISAM
b) Linear hashing. [7+8]

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