

Code No: 114CQ**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B.Tech II Year II Semester Examinations, May-2015****DATABASE MANAGEMENT SYSTEMS****(Common to CSE, IT)****Time: 3 Hours****Max. Marks: 75****Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART- A**(25 Marks)**

- 1.a) Differentiate between schema and data model. [2M]
- b) Give an example for total participation and partial participation. [3M]
- c) List the primitive operators in Relational Algebra. [2M]
- d) What is an active database? [3M]
- e) Define SECOND Normal form. [2M]
- f) Write about join dependencies. [3M]
- g) What methods are used to assign timestamps to transactions? [2M]
- h) What is the significance remote backup system? [3M]
- i) What is meant by secondary index? [2M]
- j) How to compute the disk access time? [3M]

PART - B**(50 Marks)**

- 2.a) List various categories of database users and discuss their interfaces to DBMS.
 - b) Discuss the functionality of query evaluation engine. [5+5]
- OR**
3. Construct an Entity-Relationship diagram for a online shopping systems such as Jabong/Flipcart. Quote your assumptions and list the requirements considered by you for conceptual database design for the above system. [10]
- 4.a) With a suitable example explain division operation in relational algebra.
 - b) What is the usage of 'group by' and 'having' clauses in SQL? [5+5]
- OR**
5. Consider the following schema to write queries in Domain relational calculus:
Sailor(sid, sname, age, rating)
Boats(bid, bname, bcolor)
Reserves(sid,bid,day)
 - a) Find the boats reserved by sailor with id 567.
 - b) Find the names of the sailors who reserved 'red' boats.
 - c) Find the boats which have at least two reservations by different sailors. [10]
6. What is meant by closure of F? Where F is the set of functional dependencies. Explain computing F+ with suitable examples. [10]
- OR**
- 7.a) Differentiate between FD and 4NF.
 - b) Explain the problems related to decomposition. [5+5]

- 8.a) Explain transaction states and desirable properties.
b) How to test serializability of a schedule? Explain with an example. [5+5]

OR

- 9.a) Explain Failure classification.
b) What is log? What is log tail? Explain the concept of checkpoint log record. [5+5]

10. Explain extendable hashing techniques for indexing data records. Consider your class students data records and roll number as index attribute and show the hash directory. [10]

OR

- 11.a) Is disk cylinder a logical concept? Justify your answer.
b) Compare heap file organization with hash file organization. [5+5]

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