Code No: 114CQ

R13

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 MVD.
  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]

---ooOoo---