Exam. Code: 0919
Sub. Code: 6427

2063

B.E. (Computer Science and Engineering)
Seventh Semester
CS-702: Advance Database Systems

Time allowed: 3 Hours **Max. Marks: 50**

NOTE: Attempt five questions in all, including Question No. 1 (Section-A) which is compulsory and selecting two questions each from Section B-C. .

x-x-x

Section A

Q1) Compare the following: **(5x2=10 marks)**

a) Oracle and SQL server
b) My SQL and IBM DB2 Universal Database
c) wound wait and wait die conditions
d) SQL2 and SQL3
e) OODBMS and ORDBMS

Section B

Q2) a) Discuss the similarities and dissimilarities between BCNF and 3rd Normal form. Also explain why BCNF is stronger than the 3rd normal form. **(3 marks)**

b) With an example justify the statement "Multi valued dependencies are consequences of First Normal Form". Also discuss how the multivalued dependencies are eliminated with an example? **(3 marks)**

c) Apply all normal forms on the following database system while specifying update anomalies for each.
Sales: (Sales-Transaction-No, Item-no, Item-Price, Item-Quantity-Sold, Seller, Seller-District)
FDs: Sales-Transaction-No, Item-no Item-Quantity-Sold, Item-no Item-Price, Sales-Transaction-No Seller, Seller Seller-District. **(4 marks)**

Q3) a) What is forward and backward recovery? How checkpoints are used to attain it.**(2 marks)**

b) Consider the following locking protocol: All items are numbered, and once an item is unlocked, only higher numbered items may be locked. Locks may be released at any time. Only X-locks (exclusive) are used. Show by example how this protocol doesn't guarantee serializability. **(3 marks)**

c) Compare various concurrency control techniques on the basis of Conflict serializability, Deadlock avoidance, Recoverability and Cascadeless Ness with the suitable example. **(5 marks)**

Q4) a) Explain ODM, ODL, OQL, Language bindings for object oriented approach with diagrams for University management system. **(8 marks)**

b) What are UDTS? Give an example. **(2 marks)**

Section C

Q5) a) Give various query processing phases. **(3 marks)**

b) Explain various cost optimization techniques by elaborating each with an example. **(3 marks)**

c) Give cost functions for select and join. **(4 marks)**

P.T.O.

Q6) a) Write in brief various Data Mining techniques and their respective application areas. **(3 marks)**

b) Give architecture of Data warehouse. **(3 marks)**

c) Compare Data mart and Data warehouse. **(2marks)**

d) Give various OLAP applications and tools? **(2marks)**

Q7) a) Give various types of architectures for DDBMS with diagram. **(3 marks)**

b) What is distributed query processing? Give example. **(3 marks)**

c) Explain 2PL, 2PC, 3PC for DDBMS in brief. **(4 marks)**

x-x-x