GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VII EXAMINATION – SUMMER 2016

Subject Code:171602 Subject Name:Distributed Date:18/05/2016

Total Marks: 70

Subject Name:Distributed Database Application & System Time:02:30 PM to 05:00 PM Instructions: 1. Attempt all questions. 2. Make suitable assumptions wherever necessary.

- 3. Figures to the right indicate full marks.
- Q.1 (a) Discuss DDBS environment. How it differs from centralized environment? 07
 (b) State the need of normalization in database management system. Write and explain any two normal forms with appropriate example. Assume suitable data.
 Q.2 (a) Discuss various components of a distributed DBMS. 07
 (b) (1) Explain shared disk and shared memory multiprocessor system with neat sketches. (2) Let R be an original relation with appropriate primary key constraint(s). R 03
 - is decomposed into R_1 and R_2 using horizontal fragmentation. R_1 is further divided into $R_{11} \& R_{12}$ and R_2 into R_{21} , $R_{22} \& R_{23}$ with the help of vertical fragmentation. Which operation should be performed, join or union, to get an original R_2 from R_{21} , R_{22} and R_{23} without any loss of data? Justify your answer.

OR

Q.3 (a) Explain MDBS architecture without a GCS. 07 (b) (1) Discuss selection operation and join operation in context of relational algebra. 08 (2) Give brief discussion of network transparency. 03 OR 07 (b) (1) Briefly explain (A0, D0, H0) and (A0, D0, H1) with respect to architectural alternatives of distributed DBMSs. 07 (2) Briefly explain network topology. 03 Q.4 (a) Explain views in centralized DBMSs with example(s). 07 (b) Elaborate Client/Server reference architecture. 07 OR 08 07 Q.4 (a) Discuss the following terms in detail with example(s). 07 (b) Elaborate centralized and distributed authorization control. 07 Q.5 (a) Explain layers of query processing. 07 (b) Write a note on parallel database system. 07 (c) (a) List steps of query decomposition and discuss the same in brief. 07 (b) Write a note on distributed concurrency control. 07		(b)	Write a detailed note on horizontal fragmentation.	07
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