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Sub Code: NCS-067

Paper Id:

110232

Roll No.

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B. TECH.
(SEM VI) THEORY EXAMINATION 2018-19
DISTRIBUTED DATABASE

Time: 3 Hours**Total Marks: 100****Note: 1.** Attempt all Sections. If require any missing data; then choose suitably.**SECTION A**

- 1. Attempt all questions in brief. 2 x 10 = 20**
- a. Explain Orphan and inconsistent message.
 - b. Define Concept of data independence & Atomicity in Distributed database.
 - c. Define Recoverable and Cascadeless Schedule.
 - d. Describe Eager and Lazy Replication Techniques.
 - e. Explain various types of Distributed Databases.
 - f. Describe Semi joins and bloom joins.
 - g. Explain data distribution in Distributed database.
 - h. Describe Checkpoints.
 - i. Define the terms scale-up and speed-up.
 - j. Define the term Synchronous and Asynchronous replication.

SECTION B

- 2. Attempt any three of the following: 10 x 3 = 30**
- a. How is transaction management in distributed database different from transaction management in a standalone database? Describe distributed transaction management.
 - b. What are protocols? Explain lock based and time stamp-based concurrency protocol with suitable example.
 - c. Discuss MOSS concurrency protocol with its architecture.
 - d. Explain the protocols used for Recovery in a distributed DBMS
 - e. What do you understand by Database Replication Techniques? What are the parameters of Eager Replication?

SECTION C

- 3. Attempt any one part of the following: 10 x 1 = 10**
- (a) Explain the problems associated with achieving a true distributed database in practice.
 - (b) What are the similarities and differences between parallel and distributed database management systems?
- 4. Attempt any one part of the following: 10 x 1 = 10**
- (a) Explain in brief working of two-phase locking protocol. Explain with the help of a schedule, how this protocol ensures a schedule to be conflict serializable but not cascadeless.
 - (b) Discuss Multiple Granularity in detail using an example. Discuss the significance of Multi Granularity in database.

5. **Attempt any *one* part of the following:** **10 x 1 = 10**
- (a) Explain in brief two-phase commit protocol.
 - (b) What is fragment of a relation? What are the main types of fragments? Why are fragments a useful concept in distributed database design?
6. **Attempt any *one* part of the following:** **10 x 1 = 10**
- (a) Compare the deferred- modification and immediate-modification version of the log-based recovery schemes, in terms of ease of implementation and overhead cost.
 - (b) Explain multiway joins and Semi Joins in distributed database.
7. **Attempt any *one* part of the following:** **10 x 1 = 10**
- (a) Compare the relative merits of centralized and hierarchical deadlock detection in a distributed database.
 - (b) Explain the Distributed Query processing techniques in detail.