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**B. TECH.** 

## THEORY EXAMINATION (SEM–VIII) 2016-17

# DISTRIBUTED SYSTEM

### Time : 3 Hours

*Note* : Be precise in your answer. In case of numerical problem assume data wherever not provided.

#### **SECTION-A**

- 1. Explain the following :
  - a) List out the short comings of Lamport's logical clock.
  - b) Why there is no Global clock in Distributed System? Give reason
  - c) Give the limitations of Distributed System.
  - d) What do you mean by Termination Detection?
  - e) Name Distributed Deadlock Detection Algorithms.
  - f) Differentiate between Process and Threats?
  - g) Explain the term Phantom Deadlock.
  - **h**) What is Digital Signature?
  - i) Differentiate between Fault & Failure?
  - j) Which layer provides a security handshake to initiate the TCP/IP connection?

#### **SECTION-B**

- 2. Attempt any **five** of the following :
  - a) What is Lamport's Logical Clock? For Lamoport clock system prove that for any two events 'a' & 'b' if a-> b, then C(a)<C(b), but vice versa is not true.
  - **b**) Explain Bully Algorithm.
  - c) Define Distributed System with example.
  - d) Write short note on
    - i. Atomic Commit in Distributed DBMS
    - ii. Communication Deadlock
  - e) Show that Byzantine Agreement cannot always be reached among four processors if two processor are faulty.
  - f) Explain Ricart-Agrawala Algorithm for Mutual Exclusion.
  - g) Describe Memory Coherence.
  - h) Fault Tolerance can be achieved by Error Processing? Explain.

#### **SECTION-C**

#### Attempt any two of the following :

- 3. What are the design issues of Distributed System? Also discuss challenges in Distributed System.
- 4. Discuss the following
  - a. "An approach to Concurrency Control based on Time Stamping is inherently superior to an approach based on Locking". Give argument either in favor of or against the statement.
  - b. Explain why Time Stamping cannot lead to Deadlock and Locking can.
- 5. Discuss the following
  - a. ARP
  - b. RARP
  - c. Deadlock Free Packet Switching

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(15×2=30)

# (10×5=50)

Max. Marks . 100

Max. Marks : 100

 $(10 \times 2 = 20)$