CS8603 DISTRIBUTED SYSTEMS

IMPORTANT QUESTIONS

UNIT I INTRODUCTION

1. Relation to parallel systems (Flynn's taxonomy)
2. Design issues and challenges
3. A model of distributed executions
4. Scalar time and Vector time
5. Physical clock synchronization: NTP

UNIT II MESSAGE ORDERING & SNAPSHOTS

1. Asynchronous execution with synchronous communication
2. Group communication
3. Casual Order and Total Order
4. Snapshot algorithms for FIFO channels (Chandy–Lamport Algorithm)

UNIT III DISTRIBUTED MUTEX & DEADLOCK

1. Ricart-Agrawala algorithm
2. Maekawa's algorithm
3. Knapp's classification
4. single resource model
    a. AND Model
    b. OR Model

UNIT IV RECOVERY & CONSENSUS

1. Checkpoint-based recovery
2. Log-based rollback recovery
3. Algorithm for asynchronous checkpointing and recovery (Juang–Venkatesan algorithm)
4. Agreement in synchronous systems with failures

UNIT V P2P & DISTRIBUTED SHARED MEMORY

1. Peer-to-peer computing
2. Chord distributed hash table
3. Content addressible networks (CAN)
4. Tapestry
5. Memory consistency models