Summary of Unit 1

- Unit 1 covers the following
  - Introduction to Distributed Systems
  - Motivation to Parallel Systems
  - Primitives for Distributed Communication
  - Synchronous versus asynchronous executions
  - Design issues and challenges
  - Model of distributed computations.
  - Physical Clock Synchronization
  - Logical Clock
  - Vector Clock
  - Cuts
  - Global State

Summary of Unit 2

- Unit 2 covers the following
  - Introdcution to Message Ordering.
- Asynchronous execution with synchronous communication
- Synchronous program order on an asynchronous system
- Group Communication
    - FIFO
    - Non FIFO
    - Causal Order
    - Total Order

- Global state and snapshot recording algorithms.
- Snapshot algorithms for FIFO channels.

Summary of Unit 3

- Unit 3 covers the following
  - **Distributed mutual exclusion algorithms**
    - Lamport's algorithm
    - Ricart-Agrawala algorithm
    - Maekawa's algorithm.
    - Suzuki–Kasami's broadcast algorithm
  - **Deadlock detection in distributed systems**
    - Knapp's classification
    - Algorithms for the single resource model
    - Algorithms for AND model and the OR model

Summary of Unit 4

- Unit 4 covers the following
  - Introdcution to **Checkpointing and rollback recovery**.
  - Issues in failure recovery
  - Checkpoint-based recovery
  - Log-based rollback recovery
  - Coordinated checkpointing algorithm
  - Algorithm for asynchronous checkpointing and recovery
  - **Consensus and agreement algorithms**
    - Agreement in a failure –free system
    - Agreement in synchronous systems with failures

Summary of Unit 5

- Unit 5 covers the following
  - **Peer-to-peer computing and overlay graphs**.
    - Data indexing and overlays.
    - Chord
    - Content addressable networks
    - Tapestry
  - **Distributed shared memory**
    - Abstraction and advantages
    - Memory consistency models
    - Shared memory Mutual Exclusion