

MAJOR BASED ELECTIVE – III -DISTRIBUTED OPERATING SYSTEM

Unit I:

Fundamentals - What Is a Distributed Computing System? - Evolution of Distributed Computing Systems - Distributed Computing System Models - Why Are Distributed Computing Systems Gaining Popularity? - What is a Distributed Computing Systems?-Issues in Designing a Distributed Computing Systems - Introduction to Distributed Computing Environment (DCE).

Unit II:

Computer Networks - Introduction - Networks Types - LAN Technologies – WAN Technologies - Communication Protocols – Inter networking - ATM Technology.

Unit III:

Message Passing - Introduction - Desirable Features of a Good Message-Passing System - Issues in IPC by Message Passing – Synchronization – Buffering - Multidatagram Messages - Encoding and Decoding of Message Data - Process Addressing - Failure Handling - Group Communication - Case Study: 4.3BSD UNIX IPC Mechanism.

Unit IV:

Remote Procedure Calls – Introduction - The RPC Model - Transparency of RPC - Implementing RPC Mechanism - Stub Generation - RPC Messages - Marshaling Arguments and Results - Server Management - Parameter-Passing Semantics - Call Semantics - Communication Protocol for RPCs - Complicated RPCs - Client-Server Binding - Exception Handling – Security - Some Special Types of RPCs - RPC in Heterogeneous Environments - Lightweight RPC.

Unit V:

Distributed Shared Memory – Introduction - General Architecture of DSM Systems - Design and Implementation Issues of DSM – Granularity - Structure of Shared Memory Space – Consistency Models - Replacement Strategy: Thrashing - Other Approaches to DSM - Heterogeneous DSM - Advantages of DSM

Text Book:

1. Distributed Operating Systems: Concepts and Design, Pradeep K. Sinha, PHI 2003