ADVANCED OPERATING SYSTEM

Internal Assessment: 50 **Full Marks: 100** **Theory Credit: 04**

MODULE-I:

System Architecture Types, Distributed Operating Systems, Issues in Distributed Operating Systems, Lamport's Logical Clocks, Vector Clocks, Causal Ordering of Messages, Global State, Chandy-Lamport's
Global State Recording Algorithm,

MODULE-II:

Cuts of a Distributed Computation, Termination Detection, Mutual Exclusion Algorithms, Performance Measures, Non-Token-Based Algorithms, Ricart-Agrawala Algorithm, Maekawa Algorithm, Token-Based Algorithms, Suzuki-Kasami Algorithm, Raymond Tree based Algorithm, Comparative Performance Analysis.

MODULE-III:

Deadlock Handling Strategies, Centralized Deadlock-Detection Algorithms, Distributed Deadlock Detection Algorithms, Hierarchical Deadlock Detection Algorithms, Agreement Protocols.

MODULE-IV:

Distributed File Systems, Distributed Shared Memory, Distributed Scheduling, Fault Tolerance, Multiprocessor Operating Systems.

Reference Books:

1. M. Singhal and N. G. Sivaratri, "Advanced concepts in Operating Systems", Tata McGraw Hill.
2. Coulouris, "Distributed Systems: Concepts and Design", Pearson Education.
3. P. K. Sinha "Distributed Operating Systems Concepts and Design" PHI.