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| 13CS32E4 | - | DISTRIBUTED OPERATING SYSTEMS |

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| Hours / Week | : | 4 |  | Sessional Marks | : | 40 |
| Credits | : | 4 |  | End Examination Marks | : | 60 |

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| **UNIT – I** |
| **Distributed systems**: Introduction, Hardware concepts, Software concepts and Design issues. Layered protocols, Asynchronous transfer mode networks, Client server model, Remote procedure call and Group communication. |
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| **UNIT – II** |
| **Synchronization**: Clock synchronization, Mutual exclusion, Election algorithms, Atomic transactions, Deadlocks in distributed systems. **Processes and processors in Distributed Systems**: Threads, System models, Processor allocation, Scheduling in distributed systems. |
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| **UNIT – III** |
| **Processes and processors in Distributed Systems**: Fault tolerance, Real-time distributed systems. **Distributed file systems**: Design, Implementation: File usage, System Structure, Caching, Replication. Distributed shared memory: Introduction, shared memory concept. |
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| **UNIT – IV** |
| **Distributed shared memory**: Consistency models, Page-based distributed shared memory. **Case Study** **Amoeba**: Introduction, Objects and capabilities, Process management, Memory management, Communication and Servers. |
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| **UNIT – V** |
| **Case Study MACH**: Introduction, Process management, Memory management, Communication. **Case Study DCE**: Introduction, Threads, Remote procedure call, Time Service, Directory Service, Security Service, Distributed File System. |
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| TEXT BOOKS |
| 1. Tanenbaum A S, Distributed Operating Systems, Pearson Education, 2005.
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| REFERENCE BOOKS |
| 1. Sinha P K, Distributed Operating Systems: Concepts and Design, Prentice-Hall of India Pvt Ltd, 2005.
2. Coulouris G, Dollimore J, and Kindberg T, Distributed System Concepts and Design, 4th Edition, Pearson Education, 2005.
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