**16CS345 DISTRIBUTED SYSTEMS**

**UNIT - 1**

**CHARACTERIZATION OF DISTRIBUTED SYSTEMS:** Introduction, Examples, Resource Sharing and the Web-Challenges, System models, Architectural, Fundamental Interprocess Communication, Introduction, API for Internet protocols, External data representation and marshalling, Client - server communication, Group communication; Case study - Interprocess Communication in UNIX.

**UNIT - 2**

**DISTRIBUTED OBJECTS AND REMOTE INVOCATION:** Introduction, Communication between distributed objects, Remote procedure calls, Events and notifications, Case study - Java RMI; Operating System Support-Introduction, OS layer-Protection, Processes and threads, Communication and invocation OS architecture.

**UNIT - 3**

**DISTRIBUTED FILE SYSTEMS:** Introduction, File service architecture, Case Study - Sun Network File System; Enhancements and further developments, Name Services - Introduction, Name Services and the Domain Name System, Directory Services; Case Study - Global Name Service.

**UNIT - 4**

**TIME AND GLOBAL STATES:** Introduction, Clocks, Events and process states, Synchronizing physical clocks, Logical time and logical clocks, Global states, Distributed debugging, Coordination and Agreement-Introduction, Distributed mutual exclusion, Elections, Multicast communication, Consensus and related problems.

**UNIT - 5**

**DISTRIBUTED SHARED MEMORY:** Introduction, Design and implementation issues, Sequential consistency and Ivy case study, Release consistency and Munin case study, Other consistency models, CORBA; Case Study - Introduction CORBA RMI, CORBA services.

**TEXTBOOK:**

1. George Coulouris,Jean Dollimore and Tim Kindberg, “Distributed Systems: Concept and Design”, 4thedition, Pearson Addison Wesley, 2005.

**REFERENCE BOOKS:**

1. A S Tanenbaum and M V Steen, “Distributed Systems: Principles and Paradigms”, 2nd edition, PrenticeHall, 2006.

2. M L Liu, “Distributed Computing Principles and Applications”, 1st edition, Pearson Addison

Wesley, 2003.