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| **Introductory Concepts** **and CPU Scheduling**  1.1 Operating system functions and characteristics  1.2 Historical evolution of operating systems  1.3 Real time systems, Distributed systems  1.4 O/S services, system calls, system programs  1.5 Virtual Machine  1.6 Process concept  1.7 Process Operations  1.8 Process scheduling scheduling criteria  1.9 Scheduling algorithms  1.10 Interprocess Communication   * 1. 1.11 Communication in client and Server system |
| **Synchronization** **and Deadlock**  2.1 Critical Section Problem,  2.2 Petersons solution  2.3 Synchronization Hardware  2.4 Semaphores  2.5 Monitors  2.6 Deadlock characterization,  2.7 Deadlock prevention  2.8 Deadlock Avoidance  2.9 Deadlock detection and recovery. |
| **Memory Management:**  3.1 Memory allocation methods: Single contiguous allocation, Multiple contiguous allocation  3.2 Paging  3.3 Segmentation  3.4 Virtual memory concepts  3.5 Demand Paging  3.6 Page replacement Algorithms  3.7 Thrashing. |