

B. Sc. (IT) Part I Semester-II
Paper III
Operating System

UNIT - I:

Structure of Operating System, Operating System functions, Characteristics of Modern OS. Process Management: Process states, Creation, Termination, Operations on Process, Concurrent process, Processes Threads, Multithreading, Micro Kernels CPU Scheduling: Schedulers, Scheduling Methodology, CPU Scheduling Algorithm: FCFS, SJF, RR, Priority Scheduling.

UNIT – II:

Performance comparison : Deterministic Modeling , Queuing analysis, Simulators. Deadlock and Starvation: Resource Allocation Graph, Conditions for Dead Lock, Dead Lock Prevention, Dead Lock Detection, Recovery from Deadlock.

UNIT - III:

Memory Management: Logical Vs. Physical Address Space, Swapping, Memory Management Requirement, Dynamic Loading and Dynamic Linking, Memory Allocation Method: Single Partition allocation, Multiple Partitions, Compaction, paging, segmentation, Segmentation with paging. Protection.

UNIT - IV:

I/O Management: I/O hardware, I/O Buffering, Disk I/O, Raid, Disk Cache. File Management: File Management system, File Accessing Methods, File Directories, File Allocation Methods, File Space Management, Disk Space Management, Record blocking. Protection Mechanisms: Cryptography, Digital Signature, User Authentication.