B.Sc.(CS) Semester III
Paper II
OPERATING SYSTEMS

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.