Paper-III : <u>Operating systems</u>

UNIT - I

Introduction to Operating Systems: What is an operating system? Operating system's role: user view, System View. Operating System structure , Operating System Operations.

Operating System services,System calls, Type of system calls, system programs, system structure, virtual machines.

UNIT - II

Process Management : Process concept, Process state, Process control block, Process scheduling: Scheduling Queues, Schedulars , context Switch .Operations on processes :Process creation, Process termination , Cooperating processes, Inter-process communication..

CPU Scheduling: Basic Concepts, scheduling criteria, scheduling algorithms: FCFS, SJF, Priority Scheduling , Round Robin scheduling, Algorithm evaluation.

UNIT - III

Process Synchronization: The critical section problem, synchronization hardware, semaphores, classical problems of synchronization, monitors.

Deadlocks :Deadlock characterization, Methods for handling deadlocks, Deadlock prevention, Deadlock avoidance, Deadlock detection, Recovery from deadlock.

UNIT - IV

Memory Management: Swapping, contiguous memory allocation, paging, Structure of the Page table: Herarchical Paging , Hashed Page tables , Inverted Page tables.

Virtual Memory Management : Demand paging, Process creation, Page replacement, Allocation of frames, Thrashing.

UNIT - V

Storage Management : File concept, File Attributes , File Operations , File types , file structure , Internal file structure .

Access method : Sequential access , Direct access. Directory structure, Directory overview.

File-System Implementation: File-system implementation, Directory implementation, Allocation methods.

Recommended Books :
1. **Operating System Concepts :- Silberschatz G.G.**