H. N. G. University , Patan
M.Sc.(CA & IT) – Semester - IV
404: Operating System & UNIX

Unit: 1

[25%]

Operating System Overview:

Introduction to Operating System, Types of Operating system, Operating System Services

Process Management:

Process, Process Control Block (PCB), Process States, Scheduling – Types of Schedulers, Scheduling & Performance Criteria, Scheduling Algorithms – FCFS, SJF, Priority & Round Robin (RR) Scheduling. Interprocess Synchronization: Mutual exclusion, Semaphore, C lassical Problems in Synchronization, Intraprocess Synchronization: Critical Region, Deadlocks.

Unit: 2

[25%]

Memory Management :

Static Memory Allocation, Dynamic Memory Allocation, Segmentation, Virtual memory – Paging, Demand Paging , Page Replacement, Fragmentation & Defragmentation, Cache memory.

Unit: 3

[25%]

I/O Management:

Program Controlled I/O, Interrupt Driven I/O, USART, PIT File Management: File concept, Access method, Directory structure, Disk Space Management - Continuous allocation, Non continuous allocation, File related system services

Unit: 4

[25%]

Distributed Systems:

Protocol Architecture, TCP/IP Architecture, Client/Server Computing, Message Passing, Remote Procedure Calls.

UNIX Overview:

Features of Unix, Types of shell, Unix file system, Editors of Unix: (VI)

Text Books:

1. Silberschatz & Galvin: Operating System Concept, Wiley, Sixth Edition
2. Milan Milenkovi'c : Operating Systems, Tata McGraw – Hill, Second Edition.
3. William Stallings : Operating Systems, PHI, Fourth Edition
4. Yashavant Kanetkar : Unix Shell Programming, BPB.