

Krantiguru Shyamji Krishna Verma Kachchh University, Bhuj
Master of Science (Computer Applications & Information Technology)
Semester: III

Paper Code: CCCS306		Total Credit : 4 Total Marks : 70 Time : 3 Hrs
Title of Paper: Operating Systems		
Unit		
	Description	Weighting
I	Introduction to Operating System, Functions of OS Different types of Operating Systems: Real time, Multi-user, Time sharing OS Structure – Monolithic, Layered, Virtual Machine, Client-Server CPU Scheduling: Introduction to process, process control block, process scheduling	20%
II	FCFS Scheduling, SJF scheduling, Priority scheduling, Round Robin Scheduling Memory Management: Concept, Basic memory management techniques;, Swapping, Virtual Memory System, Demand Paging 1) The Optimal Page Replacement Algorithm 2) The NRU Page Replacement Algorithm 3) The FIFO Page Replacement Algorithm 4) The second change Page Replacement Algorithm 5) The clock Page Replacement Algorithm	20%
III	Introduction to Cooperating process Process Synchronization, Critical Section Problem Two process solution, Multiple process solution Semaphores and race condition, Deadlock and characterization, Starvation, RAID	20%
IV	Introduction to Linux System & History Features of Linux Introduction to File System & Memory Management Basic Commands: login, logout, date, man, pwd, who, whoami, dir, ls, cd, mkdir, rmdir Use of Wild card characters and introduction to vi editor Introduction to environment variable like HOME, PATH, PS 1 Types of FAP, use of chmod command	20%
V	Basic commands like cp, mv, rm, rev, file redirection, grep, cut, paste, find sort commands with example Introduction to shell script: execution of it, shell script variable, expr, test commands Control structure: if, if..else, case structure Iteration: while, for construct, break, continue, exit commands	20%
Basic Text & Reference Books :-		
1.	Andrew S. Tanenbaum: Operating System deign & Implementation, Prentice Hall International	
2.	James Peterson and Abraham Silberschatz: Operating System Concept, Addition Wesley	
3.	Linux Commands Instant reference – Bryan Pfaffenberger, BPB Publication	
4.	Advanced Linux Programming – Samuel, Techmedia Publications	

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Unit	Description	Total Marks	
I	Q.1 (A) Answer the Following. (Definitions, Blanks, Full Forms, True/False, Match the Following)	06	14
	Q.1 (B) Medium / Long Questions. (With Internal Option)	08	
II	Q.2 (A) Answer the Following. (Definitions, Blanks, Full Forms, True/False, Match the Following)	06	14
	Q.2 (B) Medium / Long Questions. (With Internal Option)	08	
III	Q.3 (A) Short / Medium Questions (With Internal Option)	06	14
	Q.3 (B) Medium / Long Questions. (With Internal Option)	08	
IV	Q.4 (A) Short / Medium Questions (With Internal Option)	06	14
	Q.4 (B) Medium / Long Questions. (With Internal Option)	08	
V	Q.5 (A) Short / Medium Questions (With Internal Option)	06	14
	Q.5 (B) Shell Script Program. (With Internal Option)	08	