Krantiguru Shyamji Krishna Verma Kachchh University
Master of Science (Information Technology)
Semester: I

Paper Code: CECS101	Total Credit : 4
Title of Paper: Advanced Operating Systems	**Total Marks :** 70 **Time :** 3 Hrs

Unit	Description	Weighting
I	Introduction, types of operating systems, functions of operating systems. Introduction and Communication Models, Message Passing, Shared Memory, RPC	**20%**
II	Deadlock and Concurrency: Deadlocks, Conditions for deadlock, Deadlock modedling, Strategies for handling deadlocks, Starvation (The dining philosopher problem), Parallel Processing, Process Synchronization, Test and set, WAIT and SIGNAL, Semaphores, Process Cooperation, Producer and Consumers, Readers and Writers Problem	**20%**
III	Scheduling : Introduction Scheduling algorithms : FCFS, SJN, Priority, SRT, RR Application of the Scheduling Algorithm	**20%**
IV	File systems : File manager, Interacting with file manager, Physical storage allocation, Data compression, Access methods, Access controls Kernel types, Kernel architecture of Windows and Linux operating systems	**20%**
V	Advanced Linux Shell scripting and Script commands, System calls Linux Kernel and device driver programming Linux network and system administration, www, mail, FTP, samba	**20%**
Basic Text & Reference Books :-		
1.	UNIX – Concepts & Application, Sumitabha Das, BPB	
2.	Professional Linux Kernel Architecture by Wolfgang Mauerer Publisher: Wiley India Pvt Ltd (December 2008)	

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Unit	Description		Total Marks
I	Q.1 (A) Short / Medium Questions (With Internal Option)	06	14
	Q.1 (B) Medium / Long Questions. (With Internal Option)	08	
II	Q.2 (A) Short / Medium Questions (With Internal Option)	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) Shell Scripting Commands (With Internal Option)	06	14
	Q.5 (B) Shell Scripting Questions. (With Internal Option)	08	