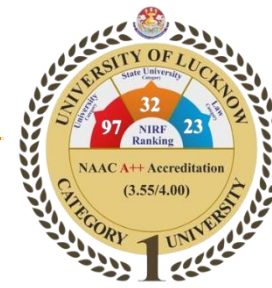




लखनऊ विश्वविद्यालय
University of Lucknow
(Accredited A++ by NAAC)



Department of Computer Science and Engineering
FACULTY OF ENGINEERING AND TECHNOLOGY
UNIVERSITY OF LUCKNOW

MID TERM-1 (October 1st, 2024)
CS-501

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Questions (**Attempt any TWO**)

Q1. What is an operating system? Discuss its functionality and services.

Q2. Consider four processes as below and find the waiting time of each processes, average waiting time, turnaround time of each process, and average turnaround time with **SRTF** CPU scheduling algorithm.

Process	Arrival Time	Burst Time
P4	0	6
P3	1	3
P2	2	3
P1	3	2

Q3. Consider three CPU-intensive processes, which require **10, 15 and 25** time units and arrive at times **0, 3, and 6**, respectively. How many context switches are needed if the OS implements a **Round Robin** (with time quantum **5** unit time) CPU scheduling algorithm? Do not count the context switches at time zero and at the end. Also, Differentiate between layered and microkernel structures of operating systems.