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Course Code: MCA-101

Course Name: Fundamentals of IT

**Assignment 2**  
(Based on Unit-III)

- Q1. Consider the following table of arrival time and burst time for three processes P0, P1 and P2.

Process	Arrival time	Burst Time (in ms)
P0	0	9
P1	1	4
P2	2	9

- Q2. The non preemptive Shortest Job First (SJF) scheduling algorithm is used. Calculate average waiting time for the three processes?
- Q3. An operating system uses the Shortest job first (SJF) process scheduling algorithm. Consider the arrival times and execution times for the following processes:

Process	Arrival time	Burst Time (in ms)
P0	0	20
P1	10	25
P2	14	17
P3	18	23

- Q4. Calculate average turnaround and waiting time for the three processes.
- Q5. Discuss different criteria for measuring the performance of a process scheduling algorithm? Also show how the performance of FIFO and SJF algorithms differ when long processes arrive before short processes.
- Q6. A system uses 3 page frames for storing process pages in main memory. It uses the First in First out (FIFO) page replacement policy. Assume that all the page frames are initially empty. What is the total number of page faults that will occur while processing the given page reference string - 4, 7, 6, 1, 7, 6, 1, 2, 7, 2, 7, 6, 1, 4, 7, 6.

- Q7. Consider a reference string: 1,3,2,4,5,2,3,4,1,4,2,3,3,5,2,4,1. The number of frames in the memory is 4. Find out the number of page faults respective to:
- FIFO Page Replacement Algorithm
  - LRU Page Replacement Algorithm
- Q8. Explain how address translation is performed by Memory Management Unit?  
Discuss the difference between logical and physical addresses.