Assignment 2

Subject	Operating System (01CE1401)
Date of Submission	1st April 2024

Sr. No	Questions
1.	What is paging? Explain the conversion of virtual address in paging.
2.	Compare multiprogramming with fixed partitioning and multiprogramming with variable partition with diagram. Explain Internal and External Fragmentation with example.
3.	Consider the reference string 1, 2, 1, 0, 3, 0, 4, 2, 4 and number of frames to be 3. Apply LRU & FIFO page replacement algorithm and compute hit ratio and miss ratio.
4.	Explain Non-contiguous file allocation techniques along with advantages and disadvantages.
5.	Consider a disk with 200 tracks and the queue has random requests from different processes in the order: 55, 58, 39, 18, 90, 160, 150, 38, 184 Initially arm is at 100. Find the Average Seek length using FIFO and SSTF algorithm
6.	Define deadlock. What are the necessary conditions for deadlock?
7.	Explain the idea of deadlock prevention and avoidance in operating system.
8.	Explain Banker's algorithm in details.
9.	Using Banker's algorithm, answer the following questions: **Process** / **Max** / **Allocation** / **Available** (blank) / A, B, C, D / A, B, C, D / A, B, C, D P0 / 6 0 1 2 / 4 0 0 1 / 3 2 1 1 P1 / 2 7 5 0 / 1 1 0 0 / P2 / 2 3 5 6 / 1 2 5 4 / P3 / 1 6 5 3 / 0 6 3 3 / P4 / 1 6 5 6 / 0 2 1 2 / i) How many resources of type A, B, C, D are there? ii) What are the contents of need matrix? iii) Find if the system is in safe state? If it is, find the safe sequence.
10.	Define Locality of Reference, Page Fault, Demand Paging and Dirty Bit.

Subject In-charge **Head of the Department**