Assignment -3

1. Explain Inter-process communication, defining about Independent and cooperative process.
2. Define shared memory and message passing with help of diagram.
3. Illustrate Race condition with help of suitable example (Printer spooler)
4. Define critical section, and what are different conditions that must be satisfied while solving critical section problems.
5. Explain different solutions with help of suitable program:
    a) Strict Alteration
    b) Peterson's solution
    c) Lock variable
    d) TSL
    e) Sleep and Wake (Producer Consumer problem)
    f) Semaphore
    g) Producer Consumer problem solution using semaphore
    h) Monitors
    i) Message Passing
6. Explain different Classic IPC problem with help of possible solution and diagrams.
    a) Dinning -Philosopher problem
    b) Sleeping -Barber problem
    c) Reader - Writer problem.

Assignment- 4

1. Write short notes on:
    a) Mono-programming and Multi-programming
    b) Memory management with Bit-map and Link-list
    c) Memory management with Swapping
    d) Thrashing
2. Differentiate between contiguous and non-contiguous memory allocation
3. Define fragmentation. Also differentiate between External and Internal fragmentation.
4. Explain multiprogramming with fixed and variable number of partitions with help of example.
5. How address translation is achieved in non-contiguous memory allocation? Explain it.
6. Differentiate between Compaction and Coalescing.
7. Explain virtual memory. Also define Logical address space and Physical address space.
8. Explain Paging with suitable diagram, with its advantages and disadvantages.
9. Explain Segmentation with suitable diagram, with its advantages and disadvantages.
10. Explain Segmentation with paging with suitable diagram, with its advantages and disadvantages.
11. Differentiate between Paging and Segmentation.
12. How demand paging is achieved? Explain it.
13. Write short notes on:
    a) FIFO
    b) LRU
    c) Optimal page replacement
    d) CLOCK page replacement
    e) Second chance
    f) LFU
    g) MFU