**Assignment 1**

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| Consider the following five processes with the length of the CPU burst time in milliseconds. |

Processes are Assumed to have arrived at time 0. For the above set of processes find the average waiting time and average turnaround time for each of the following scheduling algorithm using Gantt chart. Consider 1 is highest priority.

**1)** Non preemptive SJF

**2)** Non preemptive Priority

**3)** RR (Q = 2)

4) FCFS

**Assignment 2**

1. Explain the IPC known as Dining Philosopher Problem.
2. Explain the use of banker’s algorithm for multiple resources for deadlock avoidance with illustration.
3. What is semaphore? Explain its properties along with drawbacks. Explain any problem and solve it by semaphore.
4. What is thread? Explain thread structure. Explain types of thread.
5. What is Deadlock? List and explain conditions which lead to deadlock.
6. Explain process state transition with Diagram.

**Assignment 3**

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| 1. State different types of operating System. Explain any two of them. 2. Given memory partition of 100K, 500K, 200K, 300K, and 600K in order, How would each of the First-fit, Best-fit and Worst-fit algorithms place the processes of 212K, 417K, 112K and 426K in order? Which algorithm makes the most efficient use of memory? Show the diagram of memory status in each case 3. Explain Paging. 4. a) Explain types of fragmentation.   b) Explain swapping with diagram. |