PRACTICE ASSIGNMENT FOR CLASS A & C

NOTE: LAST DATE OF SUBMISSION: 31-03-2023

QUESTION 1: Consider the set of 6 processes whose arrival time and burst time are given below-

Process Id	Arrival time	Burst time
P1	0	4
P2	1	5
P3	2	2
P4	3	1
P5	4	6
P6	6	3

If the CPU scheduling policy is Round Robin with time quantum = 2, calculate the average waiting time and average turnaround time.

QUESTION 2: Consider the set of 5 processes whose arrival time and burst time are given below-

Process Id	Arrival time	Burst time
P1	3	1
P2	1	4
P3	4	2
P4	0	6
P5	2	3

If the CPU scheduling policy is SJF preemptive(SRTF) and SJF non-preemptive, calculate the average waiting time and average turn around time.

QUESTION 3:

Explain Various types of schedulers.

Draw and Discuss Process state chart diagram in detail.

QUESTION 4:

What is an operating system? Describe various types of operating systems.

Define Kernel & Fork() system call.

QUESTION 5: Consider six memory partitions of size 300 KB, 400 KB, 600 KB, 500 KB, 300 KB and 250 KB. These partitions need to be allocated to four processes of sizes 357 KB, 210 KB, 468 KB and 491 KB in that order.

Perform the allocation of processes using-

1. First Fit Algorithm
2. Best Fit Algorithm
3. Worst Fit Algorithm

QUESTION 6: Consider a single level paging scheme. The virtual address space is 8 MB and page size is 4 KB. What is the maximum page table entry size possible such that the entire page table fits well in one page?

QUESTION 7: Consider a single level paging scheme. The virtual address space is 4 GB and page size is 256 KB. What is the maximum page table entry size possible such that the entire page table fits well in one page?

QUESTION 8: Consider a single level paging scheme. The virtual address space is 512 KB and page table entry size is 4 bytes. What is the minimum page size possible such that the entire page table fits well in one page?

QUESTION 9: Consider a single level paging scheme with a TLB. Assume no page fault occurs. It takes 15 ns to search the TLB and 100 ns to access the physical memory. If TLB hit ratio is 80%, the effective memory access time is _____ msec.

QUESTION 10: Consider a three level paging scheme with a TLB. Assume no page fault occurs. It takes 20 ns to search the TLB and 150 ns to access the physical memory. If TLB hit ratio is 80%, the effective memory access time is _____ msec.