

--Question Starting--

Match the following process scheduling algorithms with their primary characteristics:

1. FCFS (First Come First Serve) A. Non-preemptive, simple, but can cause long waiting times
2. Round Robin B. Preemptive, uses time slices for fairness
3. Shortest Job Next (SJN) C. Selects the process with the shortest burst time next

Choose the correct answer from the options given below:

- (1) 1-A, 2-B, 3-C
- (2) 1-B, 2-A, 3-C
- (3) 1-C, 2-B, 3-A
- (4) 1-A, 2-C, 3-B

Answer Key: 2

Solution:

? FCFS: Processes are scheduled in the order they arrive, non-preemptive, can lead to the convoy effect where short processes wait behind long ones.

? Round Robin: Implements preemption with a fixed time quantum, ensuring fairness among processes.

? Shortest Job Next: Always picks the process with the shortest expected burst time, minimizing average waiting time but may cause starvation.

Hence, Option (2) is the right answer.

--Question Starting--

3. Match the following kernel modules with their respective functionalities:

1. Device Drivers A. Interface between hardware devices and the operating system
2. File System Modules B. Manages file storage, retrieval, and organization
3. Memory Management Units (MMU) C. Handles virtual memory and address translation

Choose the correct answer from the options given below:

- (1) 1-A, 2-B, 3-C
- (2) 1-B, 2-A, 3-C
- (3) 1-C, 2-B, 3-A
- (4) 1-A, 2-C, 3-B

Answer Key: 1

Solution:

? Device Drivers: Provide the software interface to hardware devices, enabling communication between OS and hardware.

? File System Modules: Responsible for managing how data is stored and retrieved on storage devices.

? Memory Management Units (MMU): Convert virtual addresses to physical addresses, managing virtual memory.

Hence, Option (1) is the right answer.