a) Single-queue vs. multi-queue strategies:

When there are various levels of priority for the tasks, the multi-queue approach is anticipated to perform better than the single-queue approach in terms of response and turnaround times. This is so that the scheduler may serve jobs in accordance with their priority levels by using the multi-queue technique. The single-queue strategy, on the other hand, treats jobs according to their order of arrival rather than their priority levels, which might result in higher response and turnaround times for high-priority activities.

When comparing the RM technique to the LM approach, it is anticipated that the RM method will offer faster reaction and turnaround times for activities requiring shorter execution periods and that the LM method will be more effective for projects requiring more latitude in the deadline. This is because the RM technique prioritizes jobs based on their set execution times, whereas the LM method prioritizes tasks depending on their deadlines.

b) FCFS, SJF, and RR

Average turnaround time performance for the FCFS algorithm is predicted to be subpar, especially when workload contains lengthy activities. This is so that jobs are handled by the FCFS algorithm in the order in which they arrive, which may cause higher wait times for longer-running activities and longer turnaround times.

When the workload includes short-running jobs, the SJF algorithm is anticipated to outperform the FCFS algorithm in terms of average turnaround time. This is so that jobs may be completed more quickly thanks to the SJF algorithm, which prioritizes the tasks with the least amount of remaining execution time.

For workloads with jobs that have varied execution periods, the RR algorithm is anticipated to perform well in terms of average turnaround time. This is so that each job receives a predetermined time slice from the RR algorithm, which guarantees that each task gets a fair amount of CPU time. The performance of the RR method may, however, deteriorate and resemble that of the FCFS algorithm if the time slice is too lengthy.