OPERATING SYSTEM

Solutions

1. Consider the processes P_1, P_2, P_3 arrived in the sequence P_2, P_3, P_1 and the burst time of the processes are 3, 3, 24 respectively. What is the average TAT?

(a) 30   (b) 10

(c) 40   (d) 35

Solution: Option (b)

2. What is the throughput of the above problem?

(a) 0.01   (b) 0.1

(c) 0.5   (d) 1.2

Solution: Option (b)

3. What is the average waiting time for the above sequence?

(a) 10 ms   (b) 15 ms

(c) 30 ms   (d) None

Solution: Option (a)

4. What is the average response time for above problem?

(a) 30 ms   (b) 15 ms

(c) 10 ms   (d) 20 ms

Solution: Option (c)

5. Does FCFS suffers from Convoy Effect?

(a) Yes   (b) No

(c) Not defined   (d) None

Solution: Option (a)

6. Facts about SJF Algorithm:

(1) Maximum Throughput
(2) Minimum Average TAT
(3) Maximum Response Time
(4) Maximum CPU Utilization

Which of the above properties satisfies SJF?

(a) 1, 2, 3, 4   (b) 1, 2, 3
(c) 1, 2   (d) 2, 3, 4

Solution: Option (c)

7. What is the drawback of SJF Algorithm?

(a) SJF has minimum Avg. TAT and Avg. WT.
(b) It is practically not possible to predict Burst time
100% accurately before even executing the process.
(c) SJF does not have any Convoy Effect
(d) None of the above

Solution: Option (b)

8. Consider the processes and Burst times as shown below which follows SJF scheduling algorithm:

Processes	AT	BT
P_1	0	4
P_2	0	2
P_3	1	5
P_4	1	3

What is the average Response time?

(a) 3.75 ms   (b) 3.5 ms
(c) 0.35 ms   (d) 1.35 ms

Solution: Option (a)

9. Which of the following algorithms gives minimum average Response time?

(a) FCFS (b) SJF
(c) Round Robbin (d) Priority

Solution: Option (c)

10. When a process is using CPU and if an interrupt occurs, the process will be moved to:

(a) Wait Queue (b) Ready Queue
(c) Job Queue (d) None of the above

Solution: Option (b)

11. The main function of dispatcher is:

(a) swapping a process to disk
(b) assigning ready process to the CPU
(c) suspending some of the processes when CPU load is high
(d) bring processes from the disk to main memory

Solution: Option (b)

12. Consider the following four processes, with the length of the CPU Burst time in milliseconds:

Process	Arrival Time	Burst Time
P_1	0	8
P_2	1	4
P_3	2	9
P_4	3	5

Using the Round Robbin scheduling algorithm, when time quantum is 2 units, the Average Waiting Time is:

(a) 12.15 (b) 11.75
(c) 12.75 (d) None

Solution: Option (c)

13. For the above processes, if you use Shortest Remaining Time First (SRTF) scheduling, the average waiting time is:

(a) 6.5 ms

(b) 7.5 ms

(c) 7.75 ms

(d) 6.75 ms

Solution: Option (d)

14. In real time Operating System, which of the following is the most suitable scheduling scheme?

(a) Round Robbin

(b) FCFS

(c) Random

(d) Preemptive

Solution: Option (a)

15. Round Robbin scheduling is more suitable when:

(a) Minimum Context switches are needed.
(b) More interaction is needed by the tasks.
(c) High priority processes needs to be completed first.
(d) None of the above

Solution: Option (b)

16. Which is a Non-Preemptive Scheduling algorithm?

(a) Round Robbin

(b) Priority base

(c) Shortest Job Next

(d) Shortest Remaining Time first

Solution: Option (c)

17. In Round Robbin Scheduling Algorithm if Time Quantum is very small it results in:

(a) Maximum Average Waiting Time

(b) Minimum Average Waiting Time

(c) More number of Context Switches

(d) None of the above

Solution: Option (c)

18. In Round Robbin if the Time Quantum is very large then it will behave as:

(a) FCFS   (b) SJF
(c) Priority   (d) None

Solution: Option (a)

19. Which of the Algorithm gives long average waiting time?

(a) SJF   (b) Round Robbin
(c) FCFS   (d) All of the above

Solution: Option (c)

20. Consider the following set of processes that arrive at time '0', with the length of the CPU-burst time given in ms:

Process	Burst time
P_1	24
P_2	3
P_3	3

What is the average waiting time in ms, when we use the RR scheduling algorithm with time quantum of 2ms?

(a) 3.66   (b) 6.33
(c) 6   (d) 6.66

Solution: Option (b)