

1. For the following questions, choose the correct statement.

- A. 1) Fig. 1 means process R requests for resource A.
 2) Fig. 1 means process A requests for resource R.
 3) Fig. 1 means resource R requests for process A.
 4) Fig. 1 means process A is holding resource R.

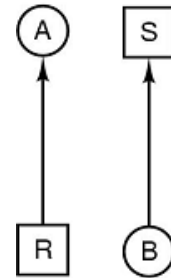


Fig. 1

- B. 1) Fig. 2 means process B is holding resource S.
 2) Fig. 2 means process S is holding resource B.
 3) Fig. 2 means process B is waiting for resource S.
 4) Fig. 2 means resource B is holding process S.

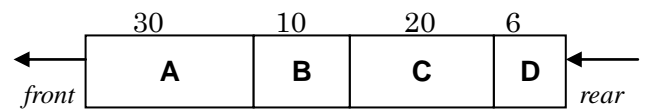


Fig. 2

- C. Fig. 2 shows that there are four jobs in the queue. Job A arrived first, and D last. The run times for the four jobs A, B, C, and D are 30, 10, 20, 6 seconds, respectively. When using first-come first-served scheduling algorithm, the average turnaround time is

- 1) 40 2) 44 3) 49 5) 54

- D. For the question in Fig.2, when using shortest job first scheduling algorithm, the average turnaround time is

- 1) 22 2) 31 3) 40 4) 42

- E. For the question in Fig. 2, the round robin scheduling algorithm is used. Suppose the quantum is one second, no other jobs arrive, and the scheduler start from the situation in Fig.2. After two seconds has passed, the job order in the queue is

- 1) B C D A 2) C B D A 3) C D A B 4) D A B C

- F. A system has five processes A, B, C, D, and E, three resources U, V, and W. Process A holds resource W and requests for resource U, Process B holds resource U and requests for resource V, Process C holds nothing and request for V, Process D holds nothing and requests for W, Process E holds resource V and requests for resource W. In this situation,

- 1) The system is not deadlocked.
- 2) The system is deadlocked. Processes A, B, and C are deadlocked over resources W, U, and V.
- 3) The system is deadlocked. Processes A, D, and E are deadlocked over resources W, U, and V.
- 4) The system is deadlocked. Processes A, B, and E are deadlocked over resources W, U, and V.

- G. Fig. 3 shows two different resource graphs, (a) and (b). In this situation,

- 1) Both (a) and (b) are deadlocked.
- 2) Both (a) and (b) are not deadlocked.
- 3) (a) is deadlocked, (b) is not deadlocked.
- 4) (b) is deadlocked, (a) is not deadlocked.

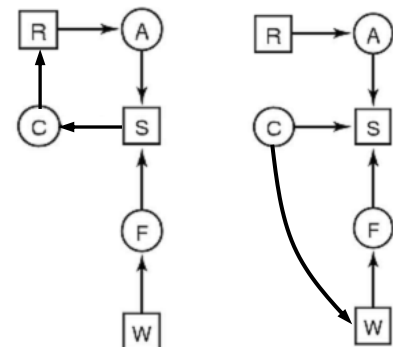


Fig. 3 (a) (b)

2. Table 1 shows that there are four jobs in the queue. Job 1 arrived first, and 4 last. Their priority is given in shown in the middle column (1 is the lowest, and 4 is highest), and CPU time is shown in right column. Assume that time quantum is 40 ms. For the following questions, please fill the blanks (time unit: msec).

Table 1		
Job #	Priority	CPU time
1	2	320
2	3	400
3	4	360
4	1	280

- a. Using first-come first-serve scheduling algorithm,

turnaround time for Job 1 is : _____

turnaround time for Job 2 is: _____

turnaround time for Job 3 is: _____

turnaround time for Job 4 is: _____

average turnaround time is: _____

wait time for Job 1 is : _____

wait time for Job 2 is: _____

wait time for Job 3 is: _____

wait time for Job 4 is: _____

average wait time is: _____

- b. Using shortest-job-first scheduling algorithm,

turnaround time for Job 1 is : _____

turnaround time for Job 2 is: _____

turnaround time for Job 3 is: _____

turnaround time for Job 4 is: _____

average turnaround time is: _____

wait time for Job 1 is : _____

wait time for Job 2 is: _____

wait time for Job 3 is: _____

wait time for Job 4 is: _____

average wait time is: _____

- c. Using priority scheduling algorithm,

turnaround time for Job 1 is : _____

turnaround time for Job 2 is: _____

turnaround time for Job 3 is: _____

turnaround time for Job 4 is: _____

average turnaround time is: _____

wait time for Job 1 is : _____

wait time for Job 2 is: _____

wait time for Job 3 is: _____

wait time for Job 4 is: _____

average wait time is: _____

- d. Using round-robin scheduling algorithm (Assume that time quantum is 50 ms),

turnaround time for Job 1 is : _____

turnaround time for Job 2 is: _____

turnaround time for Job 3 is: _____

turnaround time for Job 4 is: _____

average turnaround time is: _____

wait time for Job 1 is : _____

wait time for Job 2 is: _____

wait time for Job 3 is: _____

wait time for Job 4 is: _____

average wait time is: _____