

1999 Paper 1 Question 4

Operating Systems

An operating system uses a single queue round-robin scheduling algorithm for all processes. You are told that a *quantum* of three time units is used.

What can you infer about the scheduling algorithm? [1 mark]

Why is this sort of algorithm suitable for a multi-user operating system? [1 mark]

The following processes are to be scheduled by the operating system.

Process	Creation Time	Required Computing Time
P_1	0	9
P_2	1	4
P_3	7	2

None of the processes ever blocks. New processes are added to the tail of the queue and do not disrupt the currently running process. Assuming context switches are instantaneous, determine the *response time* for each process. [6 marks]

Give one advantage and one disadvantage of using a small quantum. [2 marks]