

Score: _____

Name: _____

ECE 3055 Quiz - December 4, 2002

There are a total of 3 A, 14 B, 12 C, and 12 D resources in a system. Compute need and available when the following states are in effect (assume this initial state is safe):

Process	Allocation	Max	Need	Available
	ABCD	ABCD	ABCD	ABCD
P0	0 0 1 2	0 0 1 2	0 0 0 0	15 2 0
P1	1 0 0 0	1 7 5 1	0 7 5 1	
P2	1 3 5 4	2 3 5 6	1 0 0 2	
P3	0 6 3 2	0 6 5 2	0 0 2 0	
P4	0 0 1 4	0 6 5 6	0 6 4 2	

1 pt.

Next, process P1 issues a request for (0,4,2,0). Can the request be granted? (justify your answer by showing your work below and show a safe execution sequence, if one exists)

Process	Allocation	Max	Need	Available
	ABCD	ABCD	ABCD	ABCD
P0	0 0 1 2	0 0 1 2	0 0 0 0	11 0 0
P1	1 4 2 0	1 7 5 1	0 3 3 1	
P2	1 3 5 4	2 3 5 6	1 0 0 2	
P3	0 6 3 2	0 6 5 2	0 0 2 0	
P4	0 0 1 4	0 6 5 6	0 6 4 2	

1 pt.

1 pt.

3 pts.

3 pts.

P0	11 0 0
	0 0 1 2
	<hr/>
	11 1 2
P2	1 3 5 4
	<hr/>
	2 4 6 6
P3	0 6 3 2
	<hr/>
	2 10 9 8
P4	0 0 1 4
	<hr/>
	2 10 10 12
P1	1 4 2 0
	<hr/>
	3 14 12 12 ✓

1 pt.
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 yes, grant request since a safe sequence is found
 P0, P2, P3, P4, P1
 or
 P0, P2, P1, P3, P4