

Score: _____

Name: _____

ECE 3055 Quiz - December 3, 2008

There are a total of 3A, 12 B, 13 C, and 12D 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 4	0 6 5 6	0 6 4 2	13 3 0
P1	0 0 1 2	1 0 1 3	1 0 0 1	
P2	1 3 5 4	3 4 5 6	2 1 0 2	
P3	1 0 0 0	1 6 5 1	0 6 5 1	
P4	0 6 3 2	0 6 6 2	0 0 3 0	

Next, process P4 issues a request for (0,0,3,0). Can the request be granted? Y Y or N

Justify your answer by showing your work below and show a safe execution sequence, if one exists. Prove it, if one does not exist. Scan through processes in strict sequential order (i.e. low to high and then back to low) when searching for a safe sequence. No credit for answer without showing a safe sequence or showing that no safe sequence exists.

Process	Allocation	Max	Need	Available
	ABCD	ABCD	ABCD	ABCD
P0	0 0 1 4	0 6 5 6	0 6 4 2	13 0 0
P1	0 0 1 2	1 0 1 3	1 0 0 1	
P2	1 3 5 4	3 4 5 6	2 1 0 2	
P3	1 0 0 0	1 6 5 1	0 6 5 1	
P4		0 6 6 2	0 0 0 0	

Need < Available For P4 only!

P4	13 0 0
	<u>6 6 2</u>
	19 6 2
P0	<u>0 0 1 4</u>
	19 7 6
P1	<u>0 0 1 2</u>
	19 8 8
P3	<u>1 0 0 0</u>
	2 9 8 8
P2	<u>1 3 5 4</u>
	3 12 13 12 ✓

safe sequence Found
P4, P0, P1, P3, P2
so grant request