Score:_____ Name:_____

ECE 3055 Quiz - December 1, 2010

There are a total of 3A, 12 B, 14 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
P1	0220	0320	0100	1137
P2	0631	2652	2021	
P3	1354	3456	2102	1pt
P4	0010	0310	0300	
P5	1000	1351	0351	1pt

Next, process P2 issues a request for (1,0,2,1). Can the request be granted? N 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 along with which processes can finish and which processes face possible deadlock waiting for resources allocated to other deadlocked processes.

Process	Allocation	Max	Need	Available
	ABCD	ABCD	ABCD	ABCD
P1	0220	0320	0100	0116
P2	1652	2652	1000	
P3	1354	3456	2102	
P4	0010	0310	0300	
P5	1000	1351	0351	6pts

P1 0116
+0220
0336
0010
P4 0346

P2, P3, P5 need > avail
could deadlock

Where and how would this algorithm potentially be used in a new OS design?

2pts.
Used during resource allocation to prevent deadlocks