

Northern Borders University Faculty of Engineering Industrial Engineering Department	IE 453 Facilities Planning Mid Term Exam Date: 3/2/1436 Time Allowed: 1:00 Hr.
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Solve the following Problem:

Problem #1 (10 Points)

For the machine-part matrix shown below, form cells using the direct clustering algorithm and, if conflicts exist, propose alternative approaches for resolving the conflicts.

Part #	Machine #							
	1	2	3	4	5	6	7	8
1	1	1	1					
2	1			1	1			
3		1	1			1		
4				1	1			1
5					1		1	1
6	1		1			1		
7		1	1			1		
8				1	1	1		
9	1	1	1					
10				1	1		1	

وفقكم الله