國立臺灣科技大學101學年度碩士班招生試題

系所組別： 工業管理系碩士班乙組
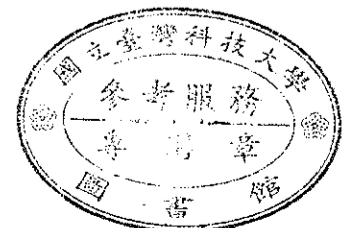
科　　目： 生產管理

（總分為100分）

1.(20%) 當代的生產作業，由接單、物料需求估算、購料、進檢，都是仰賴ERP系統協助處理。請說明工作人員如何運用ERP系統處理這些工作？

2.(15%) 何謂集體計劃(aggregate planning)？集體計劃與MPS (主生產日程)有什麼關係？兩者要怎麼銜接？

3.(15%) 簡述何謂拉式(pull)系統、推式(push)系統？什麼是平準化，什麼是看板制度，兩者在拉式系統中扮演什麼功能？

4. (20%) Determine the processing sequence for the six jobs shown below using Johnson's Rule.

(1) Chart total throughput time. (10%)

(2) Can total time be reduced by splitting the latest job? If so, by how much? (5%)

(3) Is your solution the optimal one? Why or why not? Explain. (5%)

Job	Processing Time (hrs.)	
	Station 1	Station 2
a	4	6
b	9	8
c	10	5
d	6	9
e	9	7
f	12	10

5. (20%) Estimated demand for lockets is 2,420 units a year. Manager Kevin Wang has indicated that ordering cost is $45, and that the following price schedule applies: 1 to 599 lockets, $.90 each; 600 to 1,199 lockets, $.80 each; and 1,200 or more, $.75 each. What order size will minimize total cost in each of these cases:

(A)　Carrying cost is $.18 per locket on an annual basis. (10%)

(B)　Carrying cost is 20 percent of price on an annual basis. (10%)

6. (10%) Ten labs (denoted as Lab 1 to Lab 10) will be assigned to the circular layout that consists of 10 rooms numbered from A to J, as shown below. The distances between two adjacent rooms are equal. Recalling a similar layout's congestion in the halls, the new lab manager has requested an assignment that will minimize traffic between offices. In addition, movement in the halls is restricted to a counterclockwise route. Develop a suitable layout using the following information. Justify your solution procedure and answer.
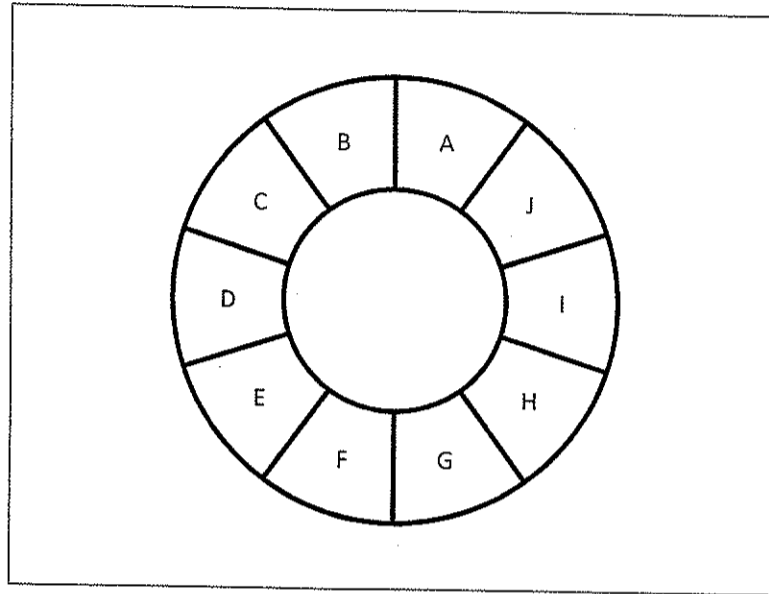
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Number of trips per day

From \ To	Lab 1	Lab 2	Lab 3	Lab 4	Lab 5	Lab 6	Lab 7	Lab 8	Lab 9	Lab 10
Lab 1		4	5	2	2	9	2	1	1	3
Lab 2			3	1	2	1	1	1	1	3
Lab 3				1	2	1	5	1	2	3
Lab 4					3	1	1	2	2	3
Lab 5						2	1	1	2	2
Lab 6							1	4	4	2
Lab 7								1	3	4
Lab 8									4	3
Lab 9										4
Lab 10										