國立虎尾科技大學 101 學年度研究所（碩士班）考試入學試題

所別：工業工程與管理研究所碩士班甲組
科目：考試科目 2 (生產管理)

注意事項：
（1）共 6 大題，1~4 題每題 20 分，5~6 題每題 10 分，共 100 分。
（2）請依序作答在答案卷上並註明題號。

1. The production manager of X Company wants to predict quarterly demand for product A for periods 5 and 6, which happen to be the third and forth quarters of 2012. Demand for product exhibits both trend and seasonality. The trend portion of demand is projected using the equation $F_t = 100 + 5t$. Quarter relatives are $Q_1 = 1.30$, $Q_2 = 1.00$, $Q_3 = 0.80$, and $Q_4 = 0.90$. Please do the following: (請將計算過程詳細列出，本題小數點第三位四捨五入至第二位)
   (1) Use the information to deseasonalize sales for quarters 1 through 4 which are 170, 160, 100, and 80.
   (2) Use this information to predict demand for periods 5 and 6.

2. The times required to complete each of six jobs in a two-machine flow shop are shown in the following table. Each job must follow the same sequence, beginning with machine A and moving to machine B. Please do the following: (請將計算過程詳細列出)
   (1) Determine a sequence that will minimize makespan time.
   (2) Construct a chart of the resulting sequence, and find the idle time of machine B.

	Time (hours)	
Job	Machine A	Machine B
a	12	11
b	8	7
c	10	5
d	14	3
e	9	12
f	6	10

3. 某超市每年營運 365 天，每天使用收銀紙帶遵循常態分佈平均 20 捲，標準差爲 3 捲。紙帶的訂購成本每次 100 元，持有成本每年每捲 5 元，前置時間爲 2 天。請問：
   (1) EOQ 爲何？（取整數，四捨五入）
   (2) 97%的前置時間服務水準下，紙帶之 ROP 爲何？
   (3) 如果 ROP 訂在 50 捲，則其服務水準爲何？

   參考資料：標準常態分佈 $N(0,1)$的累積機率

Z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
1.8	.9641	.9649	.9656	.9664	.9671	.9678	.9686	.9693	.9699	.9706
2.2	.9861	.9864	.9868	.9871	.9875	.9878	.9881	.9884	.9887	.9890
2.3	.9893	.9896	.9898	.9901	.9904	.9906	.9909	.9911	.9913	.9916
2.4	.9918	.9920	.9922	.9925	.9927	.9929	.9931	.9932	.9934	.9936

4. 請列舉下列預測方法之缺點：
   (1) 消費者調查
   (2) 銷售人員意見
   (3) 德菲法(Delphi method)
5. 何謂 Aggregate planning? 其策略有哪些? 請說明這些策略之優缺點。
6. 請說明 Inventory counting system 之種類及其優缺點。