

※ 題目共五大題，請依序作答，並標明題號

一、簡答題(本大題有 5 小題，共 20 分)

1. 在衡量內部營運過程的時間績效上，有下列關係：

Manufacturing Cycle Time

= Process Time + Inspection Time + Move Time + Queue Time

請說明上述等式的時間價值關係，及說明如何計算 Manufacturing Cycle Efficiency(MCE)，又理想的 MCE 應是多少？。

2. Activity-Based Costing(ABC)及 Theory of Constraints(TOC)是二種成本管理方法，兩者在本質上有何差異？能否彼此互補並行不悖？試舉例說明之。

3. 舉例說明 Margin of Safety 與 Safety Stock 是什麼，其公式如何計算？

4. 瞭解成本習性(Cost Behavior)對決策制定極有幫助，試說明影響成本習性的因素，及常用的成本習性劃分方法。

5. Cost of Quality(COQ)包括那些成本內容，其在 Value Chain Analysis 中如何創造附加價值？

二、勝利公司生產 A、B、C 三種聯產品，生產程序如下：(20 分)

- (1) 原料 1,000 公斤投入第一生產部門加工後，500 公斤轉入第二生產部門，300 公斤轉入第三生產部門，150 公斤轉入第四生產部門，其餘 50 公斤變為無價值的廢料。
- (2) 第二生產部門的加工成本每公斤 \$5，加工後變成每公斤售價為 \$25 之產品 A，第三生產部門的加工成本每公斤 \$3，加工後變成每公斤售價為 \$15 之產品 B，第四生產部門的加工成本每公斤 \$2，加工後變成每公斤售價為 \$10 之產品 C。

勝利公司對聯合成本的分攤係採 C 產品在分攤成本後，可賺取 20% 的正常利潤，而剩餘的聯合成本再依「淨變現價值減正常利潤法」由 A、B 兩產品共同分攤。若公司當年度投入 100,000 公斤的原料到第一生產部門，原料成本為 \$625,000，分離點前的加工成本為每年固定成本 \$300,000，變動成本每公斤 \$1，第二、三及四生產部門的加工成本均為變動成本。試回答下列問題：

- (1) A、B、C 三種產品應分攤的聯合成本若干。
- (2) 若公司產品以原料 1,000 公斤作為投入生產單位，請計算損益兩平點為多少公噸。
- (3) 若 A 產品在分離點即可出售，而有某客戶擬訂購 A 產品 10,000 公斤，則公司可接受的最低總價格為多少？

(背面仍有題目,請繼續作答)

三、Porter Company makes a product that sells for \$20 per unit. Variable costs are \$12 per unit, and fixed costs total \$200,000 annually. Please answer the following independent questions: (20 分)

- (1) If the product's profit margin is 8% in current sales, what is the safety margin ratio?
- (2) Use the contribution margin ratio to determine the after-tax target profit \$50,000 in sales dollars. Assume the corporate tax rate is 20%.
- (3) The company estimates that sales will increase \$45,000 during the coming year due to increased demand. How much should net income increase?
- (4) If the product's profit margin is 15%, what amount will be achieved in sales dollars?
- (5) If the net income for current year is \$100,000 and cost structure remains constant, then :
 - (a) Compute the degree of operating leverage at the current level of sales.
 - (b) The president expects sales to increase 20% next year. How much should the net income become in next year?
- (6) Assume that the company sold 20,000 units last year. The president thinks that annual sales will increase 50% by increasing the sales commission \$2 per unit, increasing some amount in advertising, but not decreasing per unit selling price. How much could advertising be increased with profits remaining unchanged under the incremental analysis approach?

四、Sunsan Company produces a number of product, including a body-wrap kit. Standard variable costs relating to a single kit are given below : (20 分)

	Standard Quantity or Hours	Standard Price or Rate	Standard Cost
Direct materials	?	\$6 per yard	\$?
Direct labor	?	?	?
Variable manufacturing overhead	?	\$2 per hour	?
Total standard cost per kit			<u>\$42</u>

During August, 500 kits were manufactured and sold. Selected information relating to the month's production is given below:

	Materials Used	Direct Labor	Variable Manufacturing Overhead
Total standard cost*	\$?	\$8,000	\$1,600
Actual costs incurred	10,000	?	1,620
Materials price variance	?		
Materials quantity variance	600 U		
Labor rate variance		?	
Labor efficiency variance		?	
Overhead spending variance			?
Overhead efficiency variance			?

*For the month's production.

The following additional information is available for August production of kits:

Actual direct labor-hours	900
Overhead is based on	Direct labor-hours
Difference between standard and actual cost per kit produced during August	\$0.14 U

1. What was the total standard cost of the materials used during August?
2. How many yards of material are required at standard per kit?
3. What was the materials price variance for August?
4. What is the standard direct labor rate per hour?
5. What was the labor rate variance for August? The labor efficiency variance?
6. What was the overhead spending variance for August? The overhead efficiency variance?
7. Complete the standard cost card for one kit shown at the beginning of the problem.

五、東寧公司擬購買電腦設備一部，有甲、乙兩種機型可供選擇，其耐用年限均為五年，相關資料如下：(20分)

甲電腦：購價\$200,000，每年淨現金流入(未減除維修費用)\$80,000，第三年發生維修費用\$30,000，第五年年底的殘值\$20,000，以直線法提折舊，折舊時不考慮殘值。

乙電腦：購價\$300,000，每年淨現金流入(未減除維修費用)\$120,000，第四年發生維修費用\$50,000，無殘值，以年數合計法提折舊。

公司要求的最低投資報酬率為12%，所得稅稅率為40%，每年淨現金流入及維修費用都於年底發生，相關折現因子如下：

期數	利率 12%	
	複利現值	年金現值
1	0.893	0.893
2	0.797	1.690
3	0.712	2.402
4	0.636	3.038
5	0.567	3.605

- 試作：(1)計算甲、乙兩部電腦設備所產生的淨現值(net present value)。
 (2)計算甲、乙兩部電腦設備所產生的獲利指數(profitability index)。
 (3)依你(妳)所見，若其他因素不變，何部電腦較具投資價值。