東吳大學104學年度碩士班研究生招生考試試題

系級	會計學系碩士班	考試時間	100 分鐘
科目	成本及管理會計學	本科總分	100 分

I. Carter Company manufactures a single product in two departments, Cutting and Finishing. Units of a product are started in the Cutting Department and then transferred to the Finishing Department where they are completed. Units are inspected at the 80% stage of completion in the Finishing Department. Good units are transferred to finished goods inventory when completed and spoiled units are transferred to a separate inventory account. Spoiled units are inventoried at their salvage value of $3 each, and the unrecoverable cost of spoilage, which was caused by an internal failure, should be charged to the appropriate account.

Materials are added at the beginning of the production process. At the end of June, 2,000 units were still in process in the Finishing Department, 100% complete as to materials and 60% complete as to conversion costs. During July, 20,000 units were transferred from the Cutting Department to the Finishing Department and 15,000 were transferred from the Finishing Department to finished goods inventory. At the end of July, the Finishing Department still had 4,000 units in process, 100% complete as to materials and 20% complete as to conversion costs. Cost data related to July operations in the Finishing Department follow:

Costs charged to the department:	Beginning Inventory	Added This Period
Cost from preceding department	$6,050	$54,450
Materials	3,410	30,690
Labor	1,638	14,742
Factory overhead	2,184	19,656

Required: Prepare a cost of production report for the Finishing Department based on the data presented for July, assuming the company uses a process cost system with average costing method. (Round total amounts to the nearest dollar and unit amounts to two decimal places.) **(20%)**

II. Major League Company has two operating divisions —American and National. The January income statements for each division and the company as a whole are:

	American Division	National Division	Total
Sales	$112,500	$ 60,000	$172,500
Cost of goods sold:			
Prime cost	$ 20,000	$ 15,000	$ 35,000
Variable factory overhead	15,000	12,000	27,000
Fixed factory overhead	22,500	18,000	40,500
Total	$ 57,500	$ 45,000	$102,500
Gross profit	$ 55,000	$ 15,000	$ 70,000
Other expenses:			
Sales commissions	$ 10,000	$ 5,000	$ 15,000
Packing and shipping	9,000	7,000	16,000
Advertising	12,000	8,000	20,000
Administrative	16,000	8,000	24,000
Total	$ 47,000	$ 28,000	$ 75,000
Operating income (loss)	$ 8,000	$ (13,000)	$ (5,000)

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II. (Continued…)

Company creditors recently informed management that the company must attain more profitable operations before further credit will be extended. One possible move that would aid this situation would be to sell the National Division. One prospective buyer would buy this division for $200,000; the money from the sale could be invested at 8% interest.

One effect of the sale of the National Division would be that all of its variable manufacturing costs could be eliminated; however, none of the fixed factory overhead expenses would be avoided. The sales commissions and packing and shipping expenses are completely variable. The advertising expenses for the company as a whole would be $15,000 after the elimination of the National Division. Finally, half of the administrative expenses charged to the National Division would be eliminated if the division were sold.

Required:

(1) Prepare a revised income statement for the company as a whole for the month of January if the National Division is eliminated to improve the credit rating. **(12%)**

(2) Should the National Division be eliminated to improve profits? **(3%)**

III. The owner of Kenton Clothiers must decide on the number of men's shirts to order for the coming season. One order must be placed for the entire season. The normal sales price is $30 per shirt; however, unsold shirts at season's end must be sold at half price. The following data are available:

Order Quantity	Unit Sales Price	Unit Cost	Unit Contribution Margin at Regular Price	Unit Loss at $15 Half Price
100	$30	$23	$ 7	$8
200	30	22	8	7
300	30	21	9	6
400	30	20	10	5

Over the past 25 seasons, Kenton Clothiers has experienced the following sales volume:

Quantity Sold	Frequency
100	3
200	12
300	9
400	1
	25

The historical sales have occurred at random; that is, they have exhibited no cycles or trends, and the future is expected to be similar to the past.

Required:

(1) Prepare a payoff table representing the expected contribution margin of each of the four possible strategies of ordering 100, 200, 300, or 400 shirts, assuming that only the four quantities listed are ever sold. **(10%)**

(2) Compute the expected value of perfect information in this problem. **(10%)**

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IV. The management of Elite Cookies Inc. is considering the purchase of a new shaping machine. The machine will cost $100,000 and will have a useful life of 10 years with a salvage value of $10,000 at the end of ten years. The investment will result in cost savings of $16,000 per year for each year of the machine's life. The tax rate is zero, and the appropriate discount rate for the company is 10%. (The present value factor for $1 received at the end of 10 years is .386, and the factor for $1 received annually for 10 years is 6.145.)

Required:

(1) Compute the payback period. **(5%)**

(2) Compute the accounting rate of return on the average investment. **(5%)**

(3) Compute the net present value. **(5%)**

(Round answers to two decimal places.)

V. The Domestic Engines Co. produces the same power generators in two Illinois plants, a new plant in Peoria and an older plant in Moline. The following data are available for the two plants:

	Peoria		**Moline**	
Selling price		$150.00		$150.00
Variable manufacturing cost per unit	$72.00		$88.00	
Fixed manufacturing cost per unit	30.00		15.00	
Variable marketing and distribution cost per unit	14.00		14.00	
Fixed marketing and distribution cost per unit	19.00		14.50	
Total cost per unit		135.00		131.50
Operating income per unit		$ 15.00		$ 18.50
Production rate per day	400 units		320 units	
Normal annual capacity usage	240 days		240 days	
Maximum annual capacity	300 days		300 days	

All fixed costs per unit are calculated based on a normal capacity usage consisting of 240 working days. When the number of working days exceeds 240, overtime charges raise the variable manufacturing costs of additional units by $3.00 per unit in Peoria and $8.00 per unit in Moline.

Domestic Engines Co. is expected to produce and sell 192,000 power generators during the coming year. Wanting to take advantage of the higher operating income per unit at Moline, the company's production manager has decided to manufacture 96,000 units at each plant, resulting in a plan in which Moline operates at capacity (320 units per day × 300 days) and Peoria operates at its normal volume (400 units per day × 240 days).

Required:

1. Calculate the breakeven point in units for the Peoria plant and for the Moline plant. **(5%)**
2. Calculate the operating income that would result from the production manager's plan to produce 96,000 units at each plant. **(5%)**
3. Determine how the production of 192,000 units should be allocated between the Peoria and Moline plants to maximize operating income for Domestic Engines. Show your calculations. **(10%)**

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VI. The Chemical Division of Bill Company produces lawn-care chemicals. One-third of Chemical's output is sold to the Lawn Services Division of Bill; the remainder is sold to outside customers. The Chemical Division's estimated sales and standard cost data for the year follow:

	Lawn Services	Outsiders
Sales	$ 15,000	$40,000
Variable cost	(10,000)	(20,000)
Fixed cost	(3,000)	(6,000)
Gross profit	$ 2,000	$14,000
Gallons sold	5,000	10,000

The Lawn Services Division has an opportunity to purchase 5,000 gallons of identical quality from an outside supplier at a cost of $1.75 per gallon on a continuing basis. Assume that the Chemical Division cannot sell any additional products to outside customers, that the fixed costs cannot be reduced, and that no alternative use of facilities is available.

Required: Should Bill allow its Lawn Services Division to purchase the chemicals from the outside supplier? Support your answer by computing the increase or decrease in Bill Company operating costs. **(10%)**