東吳大學 106 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

* 請標明題號後，依序作答於答案卷上！

一、(20%) Skier, Inc., manufactures a specialized ski equipment made for the professional skiers. Skier began 2016 with an inventory of 240 snowboards. During the year, it produced 900 and sold 1,050 boards for $750 each. Fixed production costs were $280,000 and variable production costs were $335 per unit. Fixed advertising, marketing, and other general and administrative expenses were $112,000 and variable shipping costs were $15 per board. Assume that the cost of each unit in beginning inventory is equal to 2016 inventory cost, and there are no flexible budget variances for year 2016.

Required:

(a) Prepare an income statement assuming Skier uses absorption costing. Skier uses a denominator level of 1,000 units. Production-volume variances are written off to cost of goods sold.

(b) Prepare an income statement assuming Skier uses variable costing.

(c) Reconcile and explain the difference in operating income under variable and absorption costing.

(d) Compute the breakeven point in units sold assuming Skier uses the following:
(1) Variable costing
(2) Absorption costing (Production = 900 boards)

(e) Assume that $20,000 of fixed administrative costs was reclassified as fixed production costs. Would this change affect breakeven point using variable costing? What if absorption costing were used? Explain.

(f) What is the potential problem of conducting CVP analysis under absorption costing? Briefly explain.

二、(15%) The Marble Company produces and sells 8,000 front load washer-dryers per year at a selling price of $750 each. Its current production equipment, purchased for $1,800,000 and with a five-year useful life, is one year old. It has a terminal disposal value of $0 and is depreciated on a straight-line basis. The equipment has a current disposal price of $300,000. However, the emergence of a new molding technology has led Marble to consider either upgrading or replacing the production equipment. The following table presents data for the two alternatives:

	Replace	*Upgrade*
One-time equipment costs	$4,800,000	$3,000,000
Variable manufacturing cost per desk	$75	$150
Remaining useful life of equipment (years)	4	4
Terminal disposal value of equipment	$0	$0

All equipment costs will continue to be depreciated on a straight-line basis. For simplicity, ignore income taxes and the time value of money.

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Required

(a) Should Marble upgrade its production line or replace it? Show your calculations to support your conclusion. (僅只回答是或否，而沒有計算與分析細節，不予給分)

(b) Morris Chung is Marble's manager, and his bonus is based on operating income. Because he is likely to retire after about a year, his current bonus is his primary concern. Which alternative would Chung choose if he would like to maximize his bonus before leaving the company? Is this choice in the best interests of the company? Show your calculations and briefly explain.

三、(15%) Agoda Company is a manufacturer of vacuums and uses standard costing. The company adopts a flexible budget for control of variable and fixed manufacturing overhead based on machine-hours. Presented below are the standard costing data regarding the company's operations for April 2016.

Fixed manufacturing overhead incurred	$ 84,920
Variable manufacturing overhead incurred	(a)
Denominator level in machine-hours (to compute budgeted rate per machine-hour) ……	6,300
Standard machine-hours allowed for actual output achieved	(b)
Fixed manufacturing overhead (per standard machine-hour)	(c)
Flexible-Budget Data:	
Variable manufacturing overhead (per standard machine-hour)	$20
Budgeted fixed manufacturing overhead ……..	$ 88,200
Budgeted variable manufacturing overhead ……..	(d)
Total budgeted manufacturing overhead ……..	(e)
Additional Data:	
Standard variable manufacturing overhead allocated	(f)
Standard fixed manufacturing overhead allocated	(g)
Production-volume variance ……..	$1,400 U
Variable manufacturing overhead spending variance	$4,600 F
Variable manufacturing overhead efficiency variance	$ 600 F
Fixed manufacturing overhead spending variance	(h)
Actual machine-hours used ……..	(i)

Required

Compute the missing items (a) through (i). (須提供詳細計算過程。)

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四、(10%) Chadwick Shoe Co. produces and sells an excellent-quality walking shoe. After production, the shoes are distributed to 20 warehouses around the country. Each warehouse services approximately 100 stores in its region. Chadwick uses an EOQ model to determine the number of pairs of shoes to order for each warehouse from the factory. Annual demand for Warehouse OR2 is approximately 120,000 pairs of shoes. The ordering cost is $250 per order. The annual carrying cost of a pair of shoes is $2.40 per pair.

1. Use the EOQ model to determine the optimal number of pairs of shoes per order.

2. Assume each month consists of approximately 4 weeks. If it takes 1 week to receive an order, at what point should warehouse OR2 reorder shoes?

3. Although OR2's average weekly demand is 2,500 pairs of shoes (120,000 ÷12 months ÷ 4 weeks), demand each week may vary with the following probability distribution:

Total demand for 1 week	2,000 pairs	2,250 pairs	2,500 pairs	2,750 pairs	3,000 pairs
Probability (sums to 1.00)	0.04	0.20	0.52	0.20	0.04

If a store wants shoes and OR2 has none in stock, OR2 can "rush" them to the store at an additional cost of $2 per pair. How much safety stock should Warehouse OR2 hold? How will this affect the reorder point and reorder quantity?

五、(20%) Hamilton Corp. is a reinsurance and financial services company. Hamilton strongly believes in evaluating the performance of its standalone divisions using financial metrics such as ROI and residual income. For the year ended December 31, 2016, Hamilton's CFO received the following information about the performance of the property/casualty division:

Sales revenues	$1,200,000
Operating income	200,000
Total assets	1,250,000
Current liabilities	250,000
Debt (interest rate: 6.25%)	600,000
Common equity	400,000

For the purposes of divisional performance evaluation, Hamilton defines investment as total assets and income as operating income (that is, income before interest and taxes). The firm pays a flat rate of 20% in taxes on its income.

1. What was the net income after taxes of the property/casualty division?

2. What was the division's ROI for the year?

3. Based on Hamilton's required rate of return of 10%, what was the property/casualty division's residual income for 2016?

4. Hamilton's CFO has heard about EVA and is curious about whether it might be a better measure to use for evaluating division managers. Hamilton's four divisions have similar risk characteristics. Hamilton's debt trades at book value while its equity has a market value approximately twice that of its book value. The company's cost of equity capital is 12%. Calculate the EVA figure for the property/casualty division.

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六、(20%) The Horsheim Company is a furniture manufacturer with two departments: molding and finishing. The company uses the weighted-average method of process costing. In August, the following data were recorded for the finishing department:

Units of beginning work in process inventory	25,000
Percentage completion of beginning work in process units	25%
Cost of direct materials in beginning work in process	$ 0
Units started	175,000
Units completed	125,000
Units in ending inventory	50,000
Percentage completion of ending work in process units	95%
Spoiled units	25,000
Total costs added during current period:	
Direct materials	$1,638,000
Direct manufacturing labor	$1,589,000
Manufacturing overhead	$1,540,000
Work in process, beginning:	
Transferred-in costs	$ 207,250
Conversion costs	$ 105,000
Cost of units transferred in during current period	$1,618750

Conversion costs are added evenly during the process. Direct material costs are added when production is 90% complete. The inspection point is at the 80% stage of production. Normal spoilage is 10% of all good units that pass inspection. Spoiled units are disposed of at zero net disposal value.

1. For August, summarize total costs to account for and assign these costs to units completed and transferred out (including normal spoilage), to abnormal spoilage, and to units in ending work in process.

2. What are the managerial issues involved in determining the percentage of spoilage considered normal? How would your answer to requirement 1 differ if all spoilage were treated as normal?