考 試 科 目	成本與管理會計學	系 所 別	會計學系／會計組	考試時間	2 月 7 日(五)第三節

一、選擇題 (10%)

1. BB Corp. sells universal bags and laptop bags during the recruiting seasons. During the current year, 15,000 bags were sold, two-fifths of them are laptop bags was universal bags. Universal bags sold resulting in $540,000 of sales revenue, $135,000 of variable selling costs and $18,000 of fixed costs. Also, there was $ 5 of variable delivering costs per unit. If sales from universal bags increase by $60,000, operating income would increase by ________.

A) $22,000 B) $38,000 C) $40,000 D) $41,000

2. Sales and average operating assets for Company P and Company Q are given below:

	Sales	Average Operating Assets
Company P............	$20,000	$8,000
Company Q...........	$50,000	$10,000

What is the margin that each company will have to earn in order to generate a return on investment of 20%?
A) 2.5% and 5% B) 8% and 4% C) 12% and 16% D) 50% and 100%

3.Which of the following statements is true?
A) In a process-costing system, there is always a separate work-in-process account for each different process.
B) In a process-costing system, underestimating the degree of completion of ending work in process leads to increase in operating income.
C) In a job-costing system, overheads are allocated to all units equally.
D) In a job-costing system, average production cost is calculated for all units produced.

4. Which of the following is a problem related to cost analysis?
A) inflationary effects are removed
B) extreme observations are adjusted or removed
C) a company keeps accounting records on the accrual basis
D) Indirect manufacturing costs are credited to Manufacturing Overhead Control.

備 註	一、作答於試題上者，不予計分。 二、試題請隨卷繳交。

考試科目	成本與管理會計學	系所別	會計學系／會計組	考試時間	2月7日(五)第三節

5. NCC Corporation has two divisions, Manufacturing and Distribution. The company's primary product is high-end optical lens. They pack two lens to one unit for sold. Each division's costs are provided below:

Manufacturing:	Variable costs per len	$0.68
	Fixed costs per len	$2.885
Distribution:	Variable costs per unit	$1.30

The Distribution Division has been operating at a capacity of 4,009,000 units a week and usually purchases 2,004,500 units from the Manufacturing Division and 2,004,500 units from other suppliers at $13.00 per unit. The Distribution Division incurs $2,004,500 of fixed costs under capacity of 4,009,000 units a week. Assume 110,000 units are transferred from the Manufacturing Division to the Distribution Division for a transfer price of $8.00 per unit. The Distribution Division sells the 110,000 units at a price of $18 each to customers. What is the operating income of both divisions together?

A) $347,600 B) $392,150 C) $997,700 D) $1,052,700

二、(25%)

Wudi Industrial Gas Corporation supplies acetylene and other compressed gases to industry. Facing keen competitive market, CEO Leo would like to use budgeting system to manage cash flow and financing policy. Data regarding the company's operations follow:

- Sales are budgeted at $320,000 for November, $340,000 for December, and $330,000 for January.
- Collections are expected to be 75% in the month of sale, 20% in the month following the sale, and 5% uncollectible.
- The cost of goods sold is 65% of sales.
- The company desires ending merchandise inventory to equal 80% of the following month's cost of goods sold. Payment for merchandise is made in the month following the purchase.
- Other monthly expenses to be paid in cash are $21,000.
- Monthly depreciation is $16,000.
- Ignore taxes.

Wudi's balance sheet for Oct. 31 follows.

考試科目	成本與管理會計學	系所別	會計學系／會計組	考試時間	2月7日(五)第三節

Wudi Balance Sheet as of Oct. 31

Assets	
Cash	$22,000
Accounts receivable (net of allowance for uncollectible accounts)	82,000
Merchandise inventory	166,400
Property, plant and equipment (net of $658,000 accumulated depreciation)	1,170,000
Total assets	$1,440,400
Liabilities and Stockholder's Equity	
Accounts payable	$199,000
Common stock	840,000
Retained earnings	401,400
Total liabilities and stockholders' equity	$1,440,400

Required:

a. Prepare a Schedule of Expected Cash Collections for November and December.
b. Prepare a Merchandise Purchases Budget for November and December.
c. Prepare Cash Budgets for November and December.
d. Prepare Budgeted Income Statements for November and December.
e. Prepare a Budgeted Balance Sheet for the end of December.

三、(35%)

Toy Manufacturing Corporation (TMC) is a toy company located in South Asia. The design team at TMC have developed a new electronic game for sale in 2020. The game is called 'Trophy' and it requires the player to press buttons on the game as quickly as possible.

Players can link Trophy to the internet to play contests against other players online and compare their scores. The following costs and target prices have been forecast for Trophy:

- Further investment required to build and test prototypes to get certification $300,000
- Unit cost per game from outsourced manufacturer $24

考 試 科 目	成本與管理會計學	系 所 別	會計學系／會計組	考 試 時 間	2 月 7 日(五) 第 三 節

- Target retail market price of Trophy $69
- Retailer mark up on Trophy 50% resulting in a selling price by TMC of $46

An alternative outsourced manufacturer has submitted a quotation of $20 per game. However, this alternative supplier is unwilling to provide details on the safety procedures in place at their factory.

The cost of the design team of TMC is regarded as a fixed cost. The budgeted sales volume for Trophy is 15,000 units but because Trophy is a new toy this volume cannot be guaranteed.

Required:

1. George Brown, the CEO, has asked you to calculate: (1) the budgeted gross profit for Trophy, (2) breakeven point by volume and revenue, (3) the margin of safety for volume and revenue in the budget before the project will fail to repay the additional investment required. (16%)
2. He has asked what other factors should be taken into consideration before committing investment funds to this toy, and he requires your recommendation on whether to proceed and develop Trophy. (9%)
3. Please construct a strategic map for the new game “Trophy” based on the concept of Balanced Scorecard, including strategic objectives and strategic measures. (10%)

四、(30%)

Chinan Manufacturing Company, a small toy manufacturer, just completed its first year of operations. It is his first year in business, the company’s owner, Victor Lee kept detailed records of the business. However, his business records consist primarily of entries in his checkbook plus information using a simple method of adding and subtracting cash on a spreadsheet. He is hiring you as the management accountant of the company and would like to have your advice and recommendations on the issues he would like to know

Victor has been reviewing the actual results for the year and is concerned about the allocation of production overhead. He also feels the need to prepare financial statements for various uses. Victor uses the following information to assess operations.

- Chinan’s equipment consists of several machines with a combined cost of $2,200,000 and no residual value. Each machine has an output of five units of product per hour and a useful life of 20,000 hours.
- Selected actual data of Chinan’s operation for the year just ended is presented here.

考試科目	成本與管理會計學	系所別	會計學系／會計組	考試時間	2 月 7 日(五)第三節

Product manufactured	500,000 units
Machine utilization	130,000 hours
Direct labor usage	35,000 hours
Labor rate	$15 per hour
Total production overhead	$1,130,000
Cost of goods sold	$1,720,960
Finished goods inventory (at year-end)	$430,240
Work in process inventory (at year-end)	$0

- Total production overhead is allocated to each unit using an estimated plantwide rate.
- The budgeted activity for the year included 20 employees, each working 1,800 productive hours per year to produce 540,000 units of product. The machines are highly automated, and each employee can operate two to four machines simultaneously. Normal activity is for each employee to operate three machines. Machine operators are paid $15 per hour.
- Budgeted production overhead costs for the past year for various levels of activity are shown here.

Units of product	360,000	540,000	720,000
Labor hours	30,000	36,000	42,000
Machine hours	72,000	108,000	144,000
Production overhead costs:			
Plant supervision	$70,000	$70,000	$70,000
Plant rent	40,000	40,000	40,000
Equipment depreciation	288,000	432,000	576,000
Maintenance	42,000	51,000	60,000
Utilities	144,600	216,600	288,600
Indirect material	90,000	135,000	180,000
Other costs	11,200	16,600	22,000
Total	$685,800	$961,200	$1,236,600

Required:

Write a memo to the business owner in response to his request. Include the following aspects in your memo.

(1) Victor believes that Chihnan Manufacturing Company should use direct labor hours to allocate manufacturing overhead but would like to have your opinion about the appropriate allocation base. Using the data given, choose the budgeted level of activity (in units) closest to actual activity for the period and

考試科目	成本與管理會計學	系所別	會計學系／會計組	考試時間	2 月 7 日(五)第三節

determine the amount of total over/underapplied production overhead. Provide a discussion to justify your suggestions. (12%)

(2) Victor has asked your advice about the kind of financial statements that would be helpful to his business. He would like you to prepare information for the following uses. First, he needs a small bank loan to provide cash during the low season at the end of summer. Most of his sales are made in December. He has a steady, low volume of sales most of the rest of the year, but sales drop to near zero in August. He wants to approach his bank about a line of credit upon which he could draw in August and then pay off in January. In addition, he would like to be able to analyze information from his operations to make decisions about whether to develop a new product, what price to set, and how much he could devote to advertising. (8%)

(3) He also recently hired a manager to whom he assigned a great deal of responsibility for general operations. He would like to be able to monitor and reward her performance in some way. He is thinking about writing a bonus contract that ties the manager's bonus to the bottom line number of the income statement prepared for the bank loan and wondering if there are any undesirable effects of doing so and what can be done to reduce the undesirable effects. (10%)

Outline your response in bullet form or numbered points and provide your recommendations, **with reasons,** to address the issues that the business owner would like to know and **the issues he must consider in making this decision. (Note: Recommendations without justifications will score no points.)**