The Institute of Certified Management Accountants

MANAGEMENT ACCOUNTING

INSTRUCTIONS TO CANDIDATES

1. CANDIDATE ID No:____
.
EXAM PAPER IS TO BE HANDED IN INTACT INSIDE YOUR ANSWER SCRIPT BOOKS AT CONCLUSION OF EXAM.

2. READING TIME IS OF 10 MINUTES DURATION
3. EXAMINATION IS OF 3 HOURS DURATION
4. This paper consists of 8 questions. PLEASE CHECK BEFORE COMMENCING.
5. This is a FINAL paper.
6. **THIS IS AN OPEN BOOK EXAM**. All material is permitted excepting for laptop computers, and mobile phones
7. Please read instructions at the top of each section carefully before answering.
8. Each section has an equal weighting in the allocation of marks.
9. Electronic hand held calculators are permitted.

PART A

Answer ALL Questions in this Part

Question One

(i) You have been asked to prepare the December cash budget for Fitness Gear Company, a distributor of exercise equipment. The following information is available about the company's operations:

(a) The cash balance on December 1 will be $40,000.

(b) Actual sales for October and November and expected sales for December are as follows:

	October	**November**	**December**
Cash sales	$ 65,000	$ 70,000	$ 83,000
Credit sales	400,000	525,000	600,000

Credit sales are collected over a three month period in the following ratio: 20% collected in the month of sale, 60% collected in the month following sale, and 18% collected in the second month following sale. The remaining 2% is uncollectible.

(c) Purchase of inventory will total $280,000 for December. Thirty percent of a month's inventory purchases are paid during the month of purchase. The accounts payable from November's inventory purchases total $161,000, all of which will be paid in December.

(d) Selling and administrative expenses (paid in the month incurred) are budgeted at $430,000 for December. Of this amount $50,000 is for depreciation.

(e) A new web server for the Marketing Department costing $76,000 will be purchased for cash during December, and dividends of $9,000 will be paid during the month.

(f) The company must maintain a minimum cash balance of $20,000. An open line of credit is available from the company's bank to bolster the cash position as needed.

Required:
1. Prepare a schedule of expected cash collections for December.
2. Prepare a schedule of expected cash disbursements for purchases of inventory in December.
3. Prepare a cash budget for December. Indicate in the financing section any borrowings that may be needed during the month.

(4 + 2 + 4 = 10 marks)

(ii) The chief executive of your company has asked you to recommend an approach to be used in preparing budgets and to draft guidelines for senior managers on managing performance using budgets. As the management accountant prepare a report to the chief executive describing your selected approach and your recommended guidelines for senior managers. In preparing your report you should consider the behavioural consequences of using budgets in planning and control. **(10 marks)**

(Total = 20 marks)

Question Two

Icon Company produces a single product. It sold 25,000 units last year with the following results:

	Total	Per Unit
Sales	$625,000	$25.00
Variable costs	$375,000	$15.00
Contribution margin	$250,000	$10.00
Less Fixed costs	$150,000	
Net profit before tax	$100,000	
Income tax @ 30%	$30,000	
Net profit after tax	$70,000	

In an attempt to improve the product, Icon Company is considering replacing one of its component parts that has cost $3.00 in the past, with a new and better component part costing $6.00 per unit in the coming year. A new machine would also be needed to increase plant capacity to 40,000 units per year. The machine would cost $90,000 with a useful life of 3 years and no salvage value. The company uses straight-line depreciation on all plant assets. The changes would also result in additional fixed costs (other than additional depreciation) of $20,000.

Required:
1. What was Icon Company's break-even point in units last year?
2. How many units of product would Icon Company have had to sell last year to earn $91,000 profit after tax?

3. If Icon Company makes the suggested changes, how many units of product must be sold in the coming year to break even? (Assume no change in the selling price.)
4. If Icon Company wishes to maintain the same contribution margin ratio as last year, what selling price must it charge in the coming year?
5. Assume that Icon Company decided to increase the selling price in the coming year to $30.00 per unit. At what volume of sales units will it earn the same profit before tax as last year?
6. Draw a Profit/Volume graph (PV) to show the Old (last year) and New (coming year at a selling price of $30.00 per unit) situations.

(3 + 4 + 3 + 3 + 3 + 4 = 20 marks)

Question Three

Sherrideng Textiles Limited manufactures natural fabrics for the clothing industry. The following data relate to the Weaving Department for the month of September:

Total equivalent units of direct material	60,000
Total equivalent units of conversion	52,000
Units completed and transferred out during September	50,000

The cost data for September were as follows:

Work in process 1 September:	
Direct material	$94,000
Conversion	44,400
Costs incurred during September:	
Direct material	$164,000
Conversion	272,800

Required:
Calculate each of the following amounts using weighted average process costing:

1. Cost of goods completed and transferred out of the Weaving Department during September.
2. Cost of the 30 September work in process inventory in the Weaving department.

(15 marks)

PART B

Answer any THREE questions from Part B

Question Four

The Components Division of Bronson Electric Motors manufactures a starter with the following standard costs:

Direct materials	$5.00
Direct labour 2 hours @$15.00	$30.00
Variable overhead 2 hours @$2.50	$5.00
Total variable costs	$40.00

The Components Division has a capacity of 10,000 motors (or 20,000 labour hours).

The starters sell for $75 each, and the division is currently operating at 8,000 units for the year. All inter divisional transfers at Bronson are made at the market price. If mutually agreed upon, the divisional managers are permitted to negotiate transfer prices.

The Motor Division of Bronson Electric Motors currently purchases 2,000 starters from the Components Division. (This 2,000 is part of the 8,000 starters that the Components Division currently manufactures.) The manager of the Motor Division has indicated that she can purchase the starters from a foreign supplier for $65. Since she is free to select a supplier, she has indicated that she would like to negotiate a new transfer price with the manager of the Components Division. The manager of the Components Division indicated that the foreign supplier is attempting to gain entry into the market by selling the starters at what he considers to be an excessively low price.

Required:

1. From the perspective of Bronson Electric Motors, should the Motor Division purchase the starters internally or externally? Explain. By how much will the firm's pre-tax profit change if the starters are purchased from the foreign supplier at a price of $65.00 per unit?
2. From the perspective of the Motor Division, should the starters be purchased from the Components Division or the foreign supplier? By how much will the pre-tax profit of the Division change if the Motor Division purchases the starters from the foreign supplier? (Assume that the Components Division refused to drop the price to $65.)
3. From the perspective of the Components Division by how much will its pre-tax profit change if the Motor Division purchases the starters from the foreign supplier? What is the minimum price at which the Components Division would transfer the starters? What is the change in the pre-tax profit of the Component Division (from its present profit) if the starters are transferred at $65?
4. If the Components Division were operating at full capacity and all the starters could be sold to external customers at the existing market price, and the Motor Division wanted to purchase the starters from the foreign supplier, what should be done from the point of view of:

   (i) The company,
   (ii) The Components Division, and
   (iii) The Motor Division.

   Explain your answers briefly.

(4 + 4 + 4 + 3 = 15 marks)

Question Five

(i) For many years Futura Company has purchased the starter motors that it installs in its standard line of farm tractors. Due to a reduction in output of certain of its products, the company has idle capacity that could be used to produce the starters. The production manager has recommended against this move, however, pointing out that the cost to produce the starters would be greater than the current $8.40 per unit purchase price:

	Per Unit	Total
Direct materials	$3.10	
Direct labour	2.70	
Supervision	1.50	$60,000
Depreciation	1.00	40,000
Variable overhead	0.60	
Rent	0.30	12,000
Total costs	$9.20	

Supervisors would have to be hired to oversee production of the starters. However, the company has sufficient idle tools and machinery so no new equipment would have to be purchased. The rent charge above is based on space utilised in the factory. The total rent on the factory is $80,000 per period.

Required:
Prepare a brief report with computations to show whether Futura Company should make the starter motors. Your report should consider both financial and non-financial issues and explain any assumptions.

(7 marks)

(ii) Cotton Company has met all production requirements for the current month and has an opportunity to produce additional units of product with its excess capacity. Unit selling prices and unit costs for three models of one of its product lines are as follows:

	Plain Model	Regular Model	Super Model
Selling price	$30.00	$32.50	$40.00
Direct material	9.00	10.00	9.50
Direct labour ($5/hour)	5.00	7.50	10.00
Variable overhead per unit	4.00	6.00	8.00
Fixed overhead per unit	8.00	7.50	7.50

There is sufficient demand for the additional production of any model of the product line.

Required:

1. If Cotton Company has excess machine capacity and can add more labour as needed (i.e., neither machine capacity nor labour is a constraint), which product is the most attractive to produce?
2. If Cotton Company has excess machine capacity but a limited amount of labour time available, which product or products should the excess production capacity be devoted to producing?

(8 marks)

(Total = 15 marks)

Question Six

(i) The following data relates to the Victorian Division of the Addams Company for 2000/01:

Sales revenue	$6,900,000
Cost of goods sold	4,200,000
Operating expenses	2,250,000
Average Invested Capital	3,000,000

The Addams Company currently charges divisions an imputed interest cost of 8% on average invested capital.

Required:

1. Calculate the profit margin, asset turnover and ROI for the Victorian Division for 2000/01.
2. Calculate the Residual Income for the Victorian Division for 2000/01 based on the imputed interest charge above.
3. Return on investment (ROI) and residual income (RI) are commonly used measures of performance. As with any performance measure, they are not perfect. Describe some of the problems in using these measures. What would you recommend for a firm wanting to assess performance of its divisional managers?

(3 + 1 + 4 = 8 marks)

(ii) 'Companies should focus on financial measures of performance because these measures are directly linked to the bottom line and shareholder value. Customers, competitors, quality and innovation are less important in driving shareholder value.' Do you agree? Explain.

(7 marks)

(Total = 15 marks)

Question Seven

(i) The following data relate to Noel Company which produces a standard product:

Budgeted fixed overhead	$300,000	
Budgeted volume of output	40,000	units
Budgeted machine hours	60,000	hours
Standard variable overhead rate per machine hour	$3.00	

The actual data for the period just ended were as follows:

Number of units produced	42,000
Actual machine hours	64,000
Actual variable overhead costs	$185,000
Actual fixed overhead costs	$302,000

Required:

1. Compute the variable overhead price (or spending) and efficiency variances.
2. Compute the fixed overhead budget and volume variances.
3. Show journal entries to record the actual costs, standard costs and variances.

(3 + 3 + 4 = 10 marks)

(ii) Kamanthi Fashions began production of a new product on June 1. The company uses a standard cost system and has established the following standards for one unit of the new product:

	Standard Quantity or Hours	Standard price or Rate	Standard Cost
Direct Materials	2.5 metres	$14 per Metre	$35.00
Direct Labour	1.6 hours	8 per hour	12.80

During June, the following activity was recorded relative to the new product:

(a) Purchasing acquired 10,000 metres of material at a cost of $13.80 per metre.

(b) Production used 8,000 metres of the material to manufacture 3,000 units of the new product.

(c) Production reported 5,000 hours of labour time worked directly on the new product; the cost of this labour time was $43,000.

Required:

1. Compute the direct material price and quantity (usage) variances indicating whether they are favourable or unfavourable.
2. Compute the direct labour price (rate) and efficiency variances indicating whether they are favourable or unfavourable. **(5 marks)**

(Total 10 + 5 = 15 marks)

<u>Question Eight</u>

Berry Manufacturing Company produces two guitars Standard and Custom. Each of the guitars takes ten direct labour hours to manufacture. However, the materials used and the demands on manufacturing resources are quite different for the two models. The Standard is made with standard grade components and labour, and does not require extensive testing and supervision. The Custom requires high quality materials, is made by specialised personnel, and requires greater use of factory resources such as inspection and testing.

In the past the company has allocated total overhead costs to the two guitars on the basis of direct labour hours. The direct labour hour rate for overhead allocation for last year was $13.50, and each guitar was allocated $135.00 of overhead since each took 10 hours to manufacture. The company management is concerned that this overhead allocation method may not be generating accurate product cost information and that the selling price of the Custom guitar may not be covering its true costs. Management is considering changing the overhead allocation system to an Activity Based allocation system.

The following is the company's sales, production, and cost information for last year:

	Standard Guitar	Custom Guitar
Unit selling price	$600	$900
Sales and production volume units	900	100
Unit Costs:		
Direct materials	$150	$375
Direct labour	180	240
Manufacturing overhead	135	135
Total unit costs	$465	$750

Manufacturing overhead costs:	
Building depreciation	$40,000
Maintenance	15,000
Purchasing	20,000
Inspection	12,000
Indirect materials	15,000
Supervision	30,000
Supplies	3,000
Total manufacturing overhead	$135,000
Total direct labour hours worked	10,000
Overhead allocation rate per labour hour	$13.50

Required:

1. How would activity based cost allocation improve the company's overhead cost allocation? Explain your answer.
2. The company's management accountant has developed the following data for the purpose of activity based cost allocation:

Manufacturing Overhead Cost	Amount	Cost Driver	Standard Guitar	Custom Guitar	Total
Building depreciation	$40,000	Square metres	3,000	1,000	4,000
Maintenance	15,000	D. labour hours	9,000	1,000	10,000
Purchasing	20,000	No. of purchase orders	1,500	500	2,000
Inspection	12,000	No. of inspections	400	600	1,000
Indirect materials	15,000	No. of units	900	100	1,000
Supervision	30,000	No. of inspections	400	600	1,000
Supplies	3,000	No. of units	900	100	1,000

Use activity-based costing to allocate the overhead costs to the two models of guitars and calculate the overhead costs allocated per unit and in total for each model of guitar.

3. Calculate the cost of a Custom guitar using activity-based costing. At the current selling price, is the company covering its true costs of production? Explain your answer.

(4 + 8 + 3 = 15 marks)