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ADM 2341X
Managerial Accounting
Summer, 2015
Final Exam
August 6, 2015

Instructor: **B. La Rochelle, Ph.D., C.P.A**
Duration: **180 minutes**
Value: **50% of your final grade**

Note to students: This is a closed-book exam, containing 7 questions, worth 75 marks in total. Apart from a standard electronic calculator, without text retention capabilities, plus sundry writing materials (pens, pencils and the like), no examination aids are permitted

NAME: ______________________________

STUDENT #: ____________________

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Statement to be signed by the student:

I have read the text on academic integrity and I pledge not to have committed or attempted to commit academic fraud in this exam.

Signed: ______________________________

Note: An exam without this signed statement will not be graded and will receive a grade of zero.

Question 1

The contribution margin format income statement for ABC Inc. for its most recent fiscal period is as follows:

	Totals	Per Unit
Sales	$600,000	$60.00
Variable expenses	400,000	40.00
Contribution margin	200,000	20.00
Fixed expenses	130,000	
Operating income	70,000	
Income taxes at 40%	28,000	
Net income	$ 42,000	

The company had average operating assets of $300,000 during the period.

Required (20 marks total):

(a) Compute the ROI for ABC Inc. under the following circumstances: Show reasoning, as considered to be appropriate.

(i) (2 marks) The company's current ROI.
(ii) (2 marks) The company achieves cost savings of $8,000 per period, through using less costly materials.
(iii) (2 marks) Using lean production, ABC Inc. is able to reduce the average level of inventory by $60,000. The released funds are used to pay bank loans.
(iv) (3 marks) Sales are increased by $54,000, while operating assets remain unchanged.
(v) (3 marks) The company issues bonds and uses the proceeds to purchase $100,000 in machinery and equipment at the beginning of the period. Interest on the bonds is $6,000 per period. Sales remain unchanged. The new, more efficient equipment reduces production costs by $5,000 per period.
(vi) (2 marks) The company invests $30,000 in cash, received from collecting accounts receivable, in a plot of land that is to be held for possible future use as a plant site.
(vii) (2 marks) Obsolete inventory, carried on the books at cost of $7,000, is scrapped and written off as a loss.

(b) (4 marks) Using margin and turnover measures, comment on your results in parts (v) and (vii), above.

Question 2

Required (8 marks total):

(a) (6 marks) Discuss the nature and components of a budget, the purpose of budgeting and best budgeting practices.

(b) (2 marks) Discuss how government budgeting processes are comparable to those of the private sector. Why, if at all, is it unwise for the public to primarily focus on published government budgets?

Question 3

XYZ Inc. has two divisions, Division A and Division B. Division A produces a component that is used in automobile braking systems. It has a capacity to produce 3,000 units per period. The component can be sold on the open market at $85 per unit. Division B manufactures the braking systems, which are then sold to automobile manufacturers. The capacity of Division B is such that it requires 2,400 components per period. The average unit component costs to Division A are as follows:

Direct materials	$40
Variable expenses	15
Fixed costs	22
	$77

If the component is sold by Division A on the open market, Division A would have to pay a $5 per unit shipping cost. If Division A sold the component internally, Division A would have to pay a $1 shipping cost.

Required (14 marks total):

(a) (4 marks) If Division A is operating at full capacity, what is the best transfer price, or range of transfer prices, to justify an internal transfer that benefits XYZ Inc. overall?

(b) (4 marks) If Division A is operating at 60% capacity, what is the best transfer price, or range of transfer prices, to justify an internal transfer that benefits XYZ Inc. overall? What is the maximum number of units that could be transferred?

(c) (4 marks) Suppose that Division B can purchase a substitute for the component for an outside supplier for $75, including shipping costs. What transfer price, if any, would motivate the managers to transfer internally (i) in accordance with part (a); (ii) in accordance with part (b)?

(d) (2 marks) What qualitative considerations, including effects on division managers, should be addressed in relation to transfer pricing in these circumstances?

Question 4

Fabricatum Inc. currently produces 8,000 units of Product X per month. The costs of producing and selling one unit of Product X are as follows:

Direct materials	$2.50
Direct labour	$3.00
Variable manufacturing overhead	$0.50
Fixed manufacturing overhead	$4.25
Variable selling and admin	$1.50
Fixed selling and admin	$2.00

The normal selling price is $18 per unit. The company's capacity is 10,000 units per month. A special order has been received from a potential customer for 2,000 units. The customer is offering to purchase if the price is $14 per unit, based on the volume of the order. The order would not affect regular sales.

Required (8 marks total):

(a) (5 marks) Should Fabricatum Inc. accept the order?

(b) (3 marks) Assume that Fabricatum Inc. has 500 units of Product X left over from last year. Last year's version of Product X is inferior to the current model, and not suitable for the special order. These units must be disposed of at reduced prices. What is the minimum sales price that would be acceptable to Fabricatum Inc.?

Question 5

The following cost information relates to the manufacturing activities of Magnum Inc. during the past fiscal year:

Purchase of raw materials	$32,000
Property taxes, factory	3,000
Work in process, ending	7,500
Utilities, factory	5,000
Direct labour cost	40,000
Indirect labour	10,000
Raw materials, beginning	8,000
Insurance, factory	6,000
Work in process, beginning	6,000
Raw materials, ending	7,000
Depreciation, factory	24,000

Magnum Inc. uses an overhead rate of $3 per machine hour. 10,000 machine hours were recorded for the year. All raw materials ultimately become direct materials.

Required (6 marks total):

(a) (4 marks) Compute the amount of underapplied or overapplied overhead cost for the year.
(b) (2 marks) What is a typical accounting treatment for underapplied or overapplied overhead?.

Question 6

Glide Inc. budgeted for sales of 200,000 units. Its budgeted and actual results are as follows:

	Budgeted Amount Per Unit	Budget	Actual
Sales	$30,00	$6,000,000	$6,270,000
Direct materials	4.00	800,000	869,000
Direct labour	10,00	2,000,000	2,244,000
Variable manufacturing overhead	1.00	200,000	228,800
Variable selling and administrative	2,00	400,000	426,800
Fixed manufacturing overhead		1,005,000	1,012,000
Fixed selling and Administrative		408,000	402,000

During the period, Glide Inc. sold 220,000 units.

Required (9 marks total):

(a) (7 marks) Evaluate the performance of Glide Inc., using flexible budgeting.

(b) (2 marks) Discuss why flexible budgeting is important in evaluating performance.

Question 7

Bakem Inc. makes three types of luxury pastries, with the following unit costs:

	Pastry A	Pastry B	Pastry C
Sales price	$4.00	$3.00	$2.50
Variable direct costs	2.10	.90	2.00
Fixed overhead allocated per unit	.40	.50	1.00

The fixed costs are allocated to each pastry type based on the quantity produced. Bakem Inc. currently has excess capacity.

Required (10 marks total):

(a) (4 marks) Which pastry product should Bakem Inc. promote, if the promotion would result in an increase in sales of 100 units of that pastry product?

(b) (4 marks) Should Pastry C be dropped from the product line? Why or why not?

(c) (2 marks) How, if at all, does a decision as to whether to drop Pastry C from the product line change, if Bakem Inc. is currently producing at full capacity?

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Question I

a. i. $ROI = \frac{70,000}{600,000} \times \frac{600,000}{300,000}$

$= 11.66\% \times 2$

$= 23.32\%$

2

ii $ROI = \frac{78,000}{600,000} \times \frac{600,000}{300,000}$ → operating expenses are reduced by \$8,000 therefore we know that operating income increases by \$8,000 to \$78,000

$= 13\% \times 2$

$= 26\%$

2

iii $ROI = \frac{70,000}{600,000} \times \frac{600,000}{240,000}$ → inventory is reduced by \$60,000, therefore the average operating assets are reduced by \$60,000 to \$240,000; so the turnover rate increases from 2 to 2.5

$= 11.66\% \times 2.5$

$= 29.15\%$

2

iv. Contribution margin ratio = 33.33% → Sales are increased by \$54,000 to \$654,000 ∴ operating income increases by \$18,000 to \$88,000 from the 33.33% contribution margin ratio

Increase in operating income $= \$54,000 \times 0.3333$

$= \$18,000$

$ROI = \frac{88,000}{654,000} \times \frac{654,000}{300,000}$

$= 13.45\% \times 2.18$

$= 29.32\%$

3

v $ROI = \frac{75,000}{600,000} \times \frac{600,000}{400,000}$ → the company acquire \$100,000 operating assets thereby increases the average operating assets to \$400,000. This reduces operating expenses, so operating income increases to \$75,000. Interest is a financing expense, therefore it can be ignored here

$= 12.5\% \times 1.5$

$= 18.75\%$

2

vi $ROI = \frac{70,000}{600,000} \times \frac{600,000}{270,000}$ → \$30,000 are removed from the average operating assets to invest in a non operating assets, that is why average operating assets decreases to \$270,000

$= 11.66\% \times 2.22$

$= 25.91\%$

2

vii ROI = $\frac{63,000}{600,000} \times \frac{600,000}{293,000}$
= 10.5% × 2.047
= 21.50%

$7000 was reduced from the original average operating assets since it was obsolete and written, therefor it was written off as a loss so the operating income reduced to $63,000

b From example (a)(v) the operating income increased by $5,000 to $75,000 therefor the margin increases from 11.66% to 12.5%. The company acquired $100,000 operating assets, this depressed the turnover, decreasing it from 2 to 1.5, Overall the ROI decreases from 23.32% to 18.75%, which is not a good thing in the of mangers. From example (a)(vii), inventory became obsolete and so was written off as loss, This action decrease the average operating assets and reduced the Operating income. As of a result the margin decreased from 11.66% to 10.5%, and the turnover rate increases from 2 to a 2.047. The overall R.O.I decreases, and is seen as a bad thing according to the managers.

Question 2

a) A budget is plan for the future in finincial ~~terms~~, it sets the target sales, production, distribution, selling" and financial expense associated with achieving these goals. These estimates are communication though varies budget such as the sales budget, production buget, and essentially it all leads up to the cash buget, the budgeted income statement, and a budgeted balance sheet. The second important purpose a budget serves is the controlling factor. It serves as a bench marking to assess the actual budget with the budgeted one, managers will need to evaluated why the performance was either under achieve or over achieve and should take corrective action to control its desired outcome.
It was argue that the best budgeting practices are ones that are very challenging but are still attainable, that way there is effort and motivation to attain hard achievable goals. ~~Goals that are~~ too difficult can lead to lack in morale and ethics to attain the goal. Budgets that are set way below expectation will lead to a lack of efforts.

d) The qualitative issues that can evolve around transfer pricing is that a dispute can happen if both managers hold onto the higher benefit, that is why some simply set the transfer pricing according to the market or at cost. However; transfer pricing does enhance the autonomy of the division as the higher managers allow lower levels of management to set their own decision making to get their own forth, this enhances decentralization. Also managers involved in transfer pricing are better informed about to cost involved within the company than those who aren't, so it can actually lead to better control in the organizational system.

2

Question 4.

a

	Per Unit	Total Amount (2,000)
Incremental revenue	$14	$ 28,000
Incremental cost :		
Variable cost :		
Direct material	2.50	5,000
Direct Labour	3.00	6,000
Variable manufacturing overhead	0.50	1,000
Variable selling and administrative expense	1.50	3,000
Total incremental cost	7.5	15,000
Increase in operating income	$ 6.5	$13,000

5

∴ Although the special order price is less than the regular selling price, it's incremental revenue is larger than the incremental cost so accepting this order will increase the operating income by $13,000 so the company should accept this order.

9.00

b) Opportunity cost :

Regular selling price	$ 18
Direct material	(2.50)
Direct labour	(3.00)
Variable manufacturing overhead	(0.50)
Variable selling and administrative expense	(1.50)
Contribution margin foregone	10.5
Incremental cost	7.5
Price per unit to charge special order	$ 18

1 ✗

∴ The minimum sale price that would be acceptable ~~is~~ $18

Question 5.

a Manufacturing overhead

$3,000	$ 30,000
5,000	
10,000	
6,000	
24,000	
bal. 18,000	

4

∴ there is $18,000 of underapplied manufacturing overhead ✓

2 b) For underapplied ~~overhead~~ overhead rate you would need to adjust your cost of goods sold by adding the amount of underapplied overhead rate to the unadjusted cost of goods sold, to arrive at the adjusted cost of goods sold. For overapplied overhead, you ~~would~~ would determine your ending work in process, finished good, and cost of goods account. Find the amount each account contributes to the total those 3 values add together and allocate the overapplied overhead according to the percentages these accounts make up and then ✓

deduct the amount allocated to cost of goods sold to the unadjusted cost of goods sold to arrive at the adjusted cost of goods sold.

Question 6

a).

	Flexible Budget - 220,000	Actual - 220,000	Flexible budget variance	
Sales	$ 6,600,000	6,270,000	(330,000)	U
Direct material	880,000	869,000	11,000	F
Direct labor	2,200,000	2,244,000	(44,000)	U
Variable manufacturing overhead	220,000	228,800	(8,800)	U
Variable selling and administrative	440,000	426,800	(13,200)	U
fixed manufacturing overhead	1,005,000	1,012,000	(7,000)	U
fixed selling and administrative	408,000	402,000	6,000	F

+ evaluate

b) Flexible budget is important in evaluating performance because it can have different amount of activity units assigned to it, unlike the static budget, its activity levels are planned, so it only has one activity level assign to it. It is difficult to evaluate whether the manger did a poor or good performance if the actual budget levels varies from the static budget. That is why a flexible takes into account of actual and static activity levels, and it removes the difference from the activity levels and adjust the static budget to the actual activity levels. Now the manager can be evaluated fairly from the removal of the difference in activity levels.

Question 7

a)

	Pastry A	Pastry B	Pastry C
Sale price	$4	$ 3	$ 2.50
Variable direct cost	2.1	0.90	2
Contribution margin per unit	$1.9	$ 2.1	$ 0.50
Increased sales unit	100	100	100
Addition contribution margin	$ 190	$ 210	$50

4

∴ Pastry B should be promoted because it has the highest CM out of all the 3 pastry. ✓

b.

Contribution margin lost	(0.5)
Less fixed cost avoided	1
Increase in operating income	0.5

1.5 +

∴ By dropping pastry C, it will increase the operating by $0.5 so it should be drop

c. When there's idle capacity, there is no opportunity cost associated with it. However, when a firm is operating at full capacity there is a opportunity cost. For example, dropping segment Pastry C, may affect sales in other segment. If the firm is operating at full capacity, then whether to drop segment C or not, depends on whether when the opportunity cost and the contribution margin together are greater than the fixed cost that can be avoided or not. If together the two combined are greater than the fixed cost that can be avoided, the Pastry C should not be dropped, and vice versa.

1.5

7.7.

b.

Question 3

a) For Division A : Transfer price $\geq$ Variable expense + $\frac{\text{Contribution margin lost on sales}}{\text{\# of units transferred}}$

$= \text{Transfer price} \geq \$6 + \frac{25 \times 2\,400}{2400}$

$\text{Transfer price} \geq \$81$ ✓

4 ∴ the transfer price for division A has to be greater than or equal $81 for it to be profitable and less than the price that division B can get from an outside supplier, or if it doesn't have one, less than the profit omit of one unit. ✓

b) $\text{Transfer price} \geq \$6 + \frac{25 \times 1200}{2{,}400}$

$\text{Transfer price} \geq \$68.50$ ✓

3.5 ∴ the transfer price has to be greater than or equal to $68.50. It also has to be less than or equal to the outside supplier's price which Division B can purchase for, or if it does not have one, less than the profit it can earn on one unit. ✓ MAXIMUM ??

c) In accordance to part (a) no transfer would occur since the selling division needs the price to be higher or equal to $81, and the buying division needs the price to be equal to or less $75. If an transfer occurs in this case, both division are result in loses ✓

4 In acordance to part (b) a transfer should take place because both division will benefit from the transfer, where the transfer price lies between $68.50 - $75 Overall the company will benefit from this transfer ✓