Midterm Exam Managerial Accounting Winter 2010
Solution ADM2341 All Sections

90 Minutes

Section	Time	Professor	Check √
M	Mon–Wed: 1600-1730,1430-1600	Rhonda Pyper	
N	Tues-Thurs: 10:00 - 11:30, 830-1000	Ronald Eden	
P	Mon-Wed: 100-230,1130-100	Ronald Eden	
Q	Tues: 13:00 - 14:30, 1130-1300	Sheldon Weatherstone	
R	Wed: 19:00 - 22:00	Marc Tassé	

STUDENT NAME: .....

STUDENT NUMBER: .....

Instructions:

1. Answer all questions in this booklet. Booklet is **not** to be removed from the examination room. You may separate the pages but ensure that you put them back together and staple before handing in.
2. Please limit your answer to the space provided. Please indicate if you use the back of a page.
3. The use of standard abbreviations (O/H for Overhead and CM% for Contribution Margin Percentage) is quite acceptable.
4. Budget your time wisely**.**
5. Please do not ask the invigilators questions. Make reasonable assumptions where necessary.
6. Language dictionaries are allowed. **Programmable calculators are not allowed.**
7. **You must show calculations.**

Questions	Max Grade
Q.1	**/4**
Q.2	**/6**
Q.3	**/20**
Q.4	**/6**
Q.5	**/5**
Q.6	**/10**
Q.7	**/15**
Total	**/66**

You must sign the following

Statement of Academic Integrity
The School of Management does not condone academic fraud, an act by a student that may result in a false academic evaluation of that student or of another student. Without limiting the generality of this definition, academic fraud occurs when a student commits any of the following offences: plagiarism or cheating of any kind, use of books, notes, mathematical tables, dictionaries or other study aid unless an explicit written note to the contrary appears on the exam, to have in his/her possession cameras, radios (radios with head sets), tape recorders, pagers, cell phones, or any other communication device which has not been previously authorized in writing.

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 examination.

Signed:_____
Note: an examination without this signed statement will not be graded and will receive an exam grade of zero.

Q.1 (4) Lee Company manufactured and sold 1,000 sabers during November. Selected data for November follow:

Sales	$100,000
Variable manufacturing expenses	50,000
Fixed manufacturing overhead	14,000
Variable selling and administrative expenses	?
Fixed selling and administrative expenses	?
Contribution margin	40,000
Operating income	22,000

There were no beginning or ending inventories.

Required:

1. What were the variable selling and administrative expenses for November?
2. What were the fixed selling and administrative expenses for November?

Sales		$100,000
Variable manufacturing expenses		50,000
Variable selling and administrative expenses		10,000[1]?
Contribution margin		40,000
Fixed manufacturing overhead		14,000
Fixed selling and administrative expenses		4,000[2]?
Operating income		22,000

[1] Plug , 100,000 – 50,000 - 40,000 = $10,000, (2) .....

[2] Plug , 40,000 – 14,000 - 22,000 = $4,,000 (2) .....

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Q.2 (6) Gamma Corporation has the following income statement for a recent period:

Sales	$400,000
Less: Variable Expenses	260,000
Contribution Margin	140,000
Less: Fixed Costs	50,000
Income	$ 90,000

Required: The following two parts are independent

1.(2) Using the **concept of operating leverage**, if Gamma's sales increase by 20%, calculate the new net income.

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O/L = $140,000/90,000 = 1.5555

Sales up by 20%, Income up by 20%*1.555 = 31.11%

New Income = $90,000 + .3111*90,000 = $117,990 (2)

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2(4). The sales manager believes that a $20,000 reduction in advertising will lead to a 10% decrease in sales. Should the advertising cut be done?

New CM = $140,000 - .10*140,000 = 126,000 (2)
New FC = 50,000 – 20,000 = 30,000
New Income = 96,000(126,000 – 30,000)
So better of by 6,000
(2)

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Or,

Change in CM = - 10% *140,000 = -14,000 .....
Change in FC = -20,000
Change in Income = - 14,000 - (- 20,000) = +6,000

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Q.3 (20) Soo Office Equipment manufactures and sells metal shelving. It began operations on January 1, 2009. Costs incurred for 2009 are as follows (V stands for variable; F stands for fixed):

Direct materials used costs	$140,000 V
Direct manufacturing labour costs	30,000 V
Plant energy costs	5,000 V
Indirect manufacturing labour costs	10,000 V
Indirect manufacturing labour costs	16,000 F
Other indirect manufacturing costs	8,000 V
Other indirect manufacturing costs	24,000 F
Marketing, distribution, and customer-service costs	122,850 V
Marketing, distribution, and customer-service costs	40,000 F
Administrative costs	50,000 F

Inventory data are as follows:

	Beginning January 1, 2009	**Ending, December 31, 2009**
Direct materials	0 kilograms	0 kilograms
Work in process	0 units	0 units
Finished goods	0 units	? units

Production in 2009: 100,000 units. Sales in 2009: 98,000 units.

Required

1. Calculate finished goods inventory, total costs, December 31, 2009.
2. What would **total manufacturing costs incurred** and **cost of goods manufactured** be in 2010 if production was 110,000 units? Assume no beginning or ending WIP inventories.

	2009 (100,000 units)	Per unit or Fixed	2010 110,000 units
Direct materials used costs	$140,000	$1.40	$154,000
Direct manufacturing labour costs	30,000	.30	33,000
VMOH Plant energy costs	5,000	.05	5,500
Indirect manufacturing labour costs	10,000	.10	11,000
Other indirect manufacturing costs	8,000	.08	8,800
FMOH Indirect manufacturing labour costs	16,000	16,000	16,000
Other indirect manufacturing costs	24,000	24,000	24,000
Manufacturing Costs Incurred	233,000*		$252,300***
WIP(BB)	0		0
WIP(EB)	0		0
COGM	$233,000*(8)		$252,300(8)
FG(BB)	0		
FG(EB)	$4,760** (4)		

Cost per unit = $233,000/100,000 = $2.33

FG(EB) Units = 100,000 – 98,000 = 2,000
FG(EB) $s = 2,000 * $2.33 = $4,660

*** Or VC = 140,000 + 30,000 + 5,000 + 10,000 + 8,000 = 193,000, or $1.93 per unit

Cost in 2010 = 110,000*$1.93 + 40,000 = 252,300

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Q.4 (6) Lynn Company uses a job costing system at its Mississauga plant. The plant applies overhead based on machine hours. At the beginning of 2009, the plant forecast that annual overhead would be $1,500,000 and machine hours would be 48,000.

Required

The actual costs and hours were

Direct materials used	$340,000
Direct manufacturing labour cost	$875,000
Manufacturing overhead	$1,605,000
Machine hours	49,200

The company adjusts any over or under allocated overhead to cost of goods sold. The cost of goods sold before adjustment was $2,960,000.

Required:

1. Determine the overallocated or underallocated manufacturing overhead.
2. Determine the cost of goods sold after adjustment.

Predetermined Overhead Rate $1,500,000/48,000 = $31.25

Applied = 49,700 * $31.25 = $1,537,500 (3)

Actual = $1,605,000

Underapplied = $1,537,500 - 1,605,000 = $67,500

COGS(Adjusted) = $2,960,000 + 67,500 = $3,027,500. (3)

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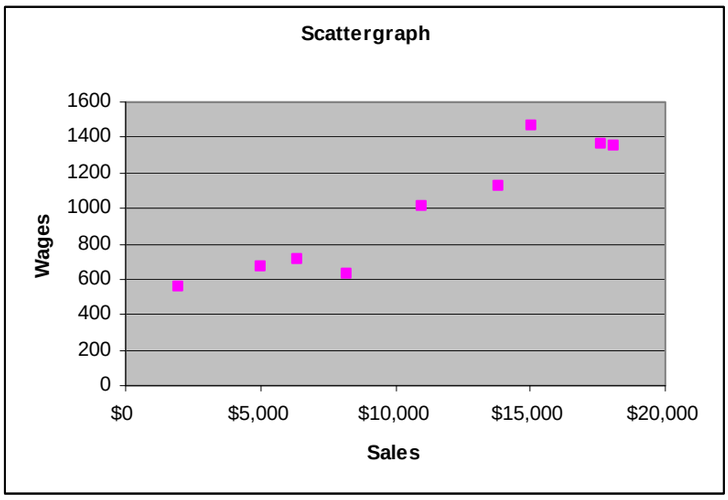
Q.5 (5) The owner of Bed and Bath Boutique regularly uses part-time help in addition to full-time employees. Some part-time help is needed every day for miscellaneous chores, and the owner arranges for additional hours based on her estimates of sales for the following week. The following is a record of the wages paid to part-time employees at recent monthly sales volumes and a scattergraph of the data.



Sales	Wages
$8,210	$629
1,950	558
6,340	710
17,650	1,360
18,100	1,350
13,800	1,130
15,040	1,466
5,050	675
11,000	1,014

The owner considers these months to be relatively normal; however, in the month with sales of $1,950, the Boutique was closed for over two weeks for repainting and installing new carpeting.

Required

1. Determine the variable cost rate and fixed costs using the high-low method. (3)
2. Very briefly, does the high-low method seem to give a good approximation of the cost behaviour? (2)

High: $18,100, 1,350; Low: $1,950, 558

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So,
1. VC = ($1,350 – 558)/($18,100 – 1,950) = 792/16150 = .049 or about 5% of sales.
FC = 1350 - .049*18100 = $463

2. The method appears to give reasonable approximation the Hi-Lo line runs close to the data. (Some students may point out that the low is not a normal month and should be left out bonus 1 point.)

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Q. 6 (10)

6.1(4) The Vancouver Hotel has 400 rooms, with a fixed cost of $400,000 per month during the peak season. Room rates average $124 per day with variable costs of $24 per room per day. Assume a 30-day month.

Required:

How many rooms must be occupied per month in the peak season to make a profit of $200,000 per month?

CM = $124 – 24 = $100 (2)
So target sales = ($400,000 + 200,000/100 = 6,000 rooms (2).....

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6.2.(6) Assume again The Vancouver Hotel has 400 rooms, with a fixed cost of $400,000 per month during the peak season; however the hotel averages 80 percent occupancy per day.

Required: What average rate per day must the hotel charge to make a profit of $200,000 per month?(Hint: How many rooms are occupied?)

Total rooms = 400 *30 = 12,000

Occupancy = 80% * 12,000 = 9,600 rooms (2)

Sales = (FC + Target profit)/CM per unit
9,600 *CM per unit = $400,000 + 200,000
CM per unit = 600,000/9,600 = $62.50 (4)

SP = VC + CM = 24 + 62.50 = $86.50

Or
Revenue – Variable cost – Fixed Cost = Profit

SP*Rooms - VC*Rooms - FC = $200,000
SP*9,600 - $24*9600 - $400,000 = $200,000

SP*9600 = 230,400 + 400,000 +200,000 = $830,400
SP = $830,400/9600 = $86.50

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Q.7 (15) The Frozen Delicacies Company specializes in preparing tasty main courses that are frozen and shipped to the finer restaurants in the Montreal area. When a diner orders the item, the restaurant heats and serves it. The budget data for 2010 are:

	PRODUCT	
	Chicken Cordon Bleu	**Veal Marsala**
Selling price to restaurants	$10	$14
Variable Expenses	$6	$8
CM per unit	**$4**	**$6**
Number of units	250,000	125,000

The items are prepared in the same kitchens, delivered in the same trucks, and so forth. Therefore the fixed costs of $840,000 are unaffected by the specific products.

Required:

1. Compute the break-even point in units – show the sales of each product - assuming that the planned sales mix is maintained.
2. Suppose 90,000 units of veal and 270,000 units of chicken were sold. Compute the new break-even point – show the sales of each product - if these relationships persisted in 2010.
3. Discuss briefly the reason for the difference in break- even point between parts 1 and 2 of this question.

Rounded numbers are fine.....

1. Average CM per unit

(250k/375k)*$4 + (125k/375k)*$6
.66667*$4 + .3333*$6 = $4.66667
Or

Total CM = 250k*$4 + 125k*$6 = 1,000k + 750k = 1,750k

Average CM = 1,750k/375k = $4.66667 (3) .....

BEP = $840k/4.6667 = 180k (2)

Chick = .66667 * 180k = 120k
Veal = .3333*180k = 60k (2)

2. New Average CM per unit

270k/360*$4 + 90/360*$6
.75*$4 + .25*$6 = $4.50 (3)

BEP = $840k/4.5 = 186,667 rounded up (1)

Chick: .75* 186,667 = 140,000

Veal: .25*186,667 = 46,667 (1).....

3. BEP is down because of the sales shift to Chicken, the lower CM product - from 67% of sales to 75% . This decreased the average CM from $4.67 to 4.50 – increasing the BEP (3)

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OR.....

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	Chick:	Veal:	Total
Sales #s	250,000	125,000	375,000
Sales $s @, $10, $14	2,500,000	1,750,000	4,250,000
VC @, $6, $8	1,500,000	1,000,000	2,500,000
CM	1,000,000	750,000	1,750,000
FC			840,000
Income			910,000
CM per unit			1,750,000/375,000 = $4.6667
BEP =			$840,000/4.6667 = 180,000 units
Sales of chick			250/375*180,000 = 120,000 units
Sales of veal			125/375*180,000 = 60,000units

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2.

	Chick:	Veal:	Total
Sales #s	270,000	90,000	360,000
Sales $s @, $10, $14	2,700,000	1,260,000	3,960,000
VC @, $6, $8	1,620,000	720,000	2,340,000
CM	1,080,000	540,000	1,620,000
FC			840,000
Income			780,000
CM per unit			1,620,000/360,000 = $4.5
BEP =			$840,000/4.5 = 186,667 units
Sales of chick			270/360*186,667 = 140,000 units
Sales of veal			90/360*186,667 = 46,667 units

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