Midterm Exam Managerial Accounting
Solution ADM2341 All Sections

Grade /55

Section	Time	Professor	Check one v

90 Minutes

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.
7. **You must show calculations.**

Questions	Max Grade
Qs 1 to 5	11
Q.6	20
Q.7	10
Q.8	14
Total	55

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.

The number in brackets is the grade for the question.

Q1.(1) Which of the following businesses would be likely to use process costing?

1) a defence contractor that makes tanks, stun guns, and laser weapons as well as other commercial products
2) √ a plant that produces latex house paint
3) a firm that provides real estate services
4) a bridal boutique

Q.2(1) Which of the following is an example of a discretionary fixed cost?

1) Insurance.
2) Taxes on real estate.
3) √ Management training.
4) Amortization of buildings and equipment.

Q.3(2) Expense A is a fixed cost; expense B is a variable cost. During the current year, the activity level has increased but is still within the relevant range. In terms of cost per unit of activity, you would expect which of the following statements to be true?

1) Expense A has remained unchanged.
2) Expense B has decreased.
3) √ Expense A has decreased.
4) Expense B has increased.

Q.4(1) Raw Materials can be classified as what following type(s) of costs:

1) prime cost
2) conversion cost
3) manufacturing overhead cost
4) √ both a. and c.

Q.4(2) The amortization of the factory lunchroom equipment should typically be classified as:

1) variable and a product cost
2) fixed and a period cost
3) √ fixed and a product cost
4) variable and a period cost

Q.5(4) Theta Corporation has the following income statement for the period ending December 31, 2007:

Sales	$200,000
Less: Variable Expenses	130,000
Contribution Margin	70,000
Less: Fixed Costs	41,000
Income	$ 29,000

Required: The following two parts are independent

5.1(2) Using the **concept of operating leverage**, if Theta' s sales increase by 30%, calculate the new net income.

O/L = CM/Income = $70,000/29,000 = 2.41

Sales increase = 30%, Income increase = 2.41*30% = 72.4% *(1 point)*

New income = $29,000 + 72.4%*29,000 = 29,000 + 21,000 = $50,000 *(1 point)*

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5.2(2) The sales manager believes that a $10,000 increase in advertising will lead to a $20,000 increase in sales. Should the advertising be done?

CM% = 70,000/200,000 = 35%

So change in CM = $20,000 * 35% = + $7,000 *(1 point)*

Change in FC(Increase in advertising) = + $10,000 *(1 point)*

So worse off by $3,000

OR

Sales = $200,000 + 10,000	*$200,000 + 20,000*	*$220,000*	.....
VC	*65% *210,000*	*143,000*	.....
CM		*77,000*	
FC	*41,000 + 10,000*	*51,000*	.....
Income		*26,000*	

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Q.6(20) Smith's Falls Novelties has two models of mugs that it sells to retail outlets. An income statement for the two models for the latest month follows.

	Jiggs		*Maggie*		*Total*	
	$	*%*	*$*	*%*	*$*	*%*
Sales	$800	100	$480	100	$1,280	100
Variable expenses	480	60	96	20	576	45
Contribution margin	$320	40	$384	80	704	55
Fixed expenses					660	
Operating income					$ 44	

The unit selling prices, variable costs and unit sales are:

	Jiggs	*Maggie*
Selling Price	$4.00	$6.00
Variable expenses per unit	2.40	1.20
Unit sales	200	80

The company has a new mug, Popeye, that it plans to sell for $8 per mug and will sell 40 mugs a month. The variable costs are $6 per mug.

Required:

6.1. What is the break-even point in total **dollars** before the Popeye mug is added? (The dollar sales of the Jiggs and Maggie mugs is **not** required.) What is the margin of safety in mugs at this breakeven point?

Break-even sales = *Fixed expenses / CM ratio*
+ $660 / .55 = $1200 *(2 points)*

Margin of safety *$1280 - 1200 = $80* *(2 points)*

6.2 What is the break even point in total **mugs** before the Popeye mug is added?

Average CM = $704/280 = $2.514
BEP(Mugs) = $660/2.514 = 262.5, or 263 rounded. *(4 points)*

Or Average CM =

(200/280)$1.60(Jiggs) + (80/120)*$4.80(Maggie) =*

$1.14 + $1.37 = $2.51

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6.3. What is the new breakeven point in total mugs **after** the Popeye mug is added.?

Average CM =

200/320 $1.60(Jiggs) + 80/320*$4.80(Maggie) + 40/320*$2.00(Popeye)*

= $1.00 + $1.20 + $0.25 = $2.45 *(2 points)*

BEP(Mugs) = $660/$2.45 = 269.4 or 270 rounded *(2 points)*

***Or,** Average CM =*

*Total CM = 200*$1.60(Jiggs) + 80*$4.80(Maggie) + 40*$2.00(Popeye)*

$320 + $384 + $80 = $784

Average CM = $784/320 = $2.45

***Or,** just add the CM from the Popeye Mug to the $704 from the income statement*

$80 + $704 = $784

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6.4. What are the sales in **mugs** of the Jiggs, Maggie and Popeye mugs at the new breakeven point?

*Jiggs = 200/320 * 270 = 62.5% *270 = 168.75 or 169*

*Maggie = 80/320*270 = 25%* 270 = 67.5 or 68*

*Popeye = 40/320*270 = 12.5%*270 = 33.75 or 34*

(4 points)

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6.5. Briefly explain why the breakeven point decreased or increased with the addition of the Popeye mug?

*BEP **increased** because the Popeye mug lowered the **average** CM from $2.51 to $2.45. The Popeye mug has a much lower CM than the Maggie mug($2 vs $4.80) and only slightly higher than the Jiggs mug($2 vs $1.60)* .....

(4 points)

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Q.7(10) The Central Valley Company is a merchandising firm that sells a single product. The company's revenues and expenses for the last three months are presented below:

CENTRAL VALLEY COMPANY
Comparative Income Statement
for the Second Quarter

	April	May	June
Sales in units	4,500	5,250	6,000
Sales revenue	$630,000	$735,000	$840,000
Less: cost of goods sold	252,000	294,000	336,000
Gross margin	378,000	441,000	504,000
Less: operating expenses			
Shipping expense	56,000	63,500	71,000
Advertising expense	70,000	70,000	70,000
Salaries and commissions	143,000	161,750	180,500
Insurance expense	9,000	9,000	9,000
Depreciation expense	42,000	42,000	42,000
Total operating expenses	320,000	346,250	372,500
Net income	$ 58,000	$ 94,750	$131,500

Required:

7.1 Determine which expenses are mixed and, by use of the high-low method, separate each mixed expense into its variable and fixed components. State the cost formula for each mixed expense.

Ans: The cost of goods sold for this company is a variable cost and is $56 per unit. The Shipping Expense and the Salaries and Commissions Expense are mixed. All other expenses are constant for each of the months shown and are therefore fixed.

Shipping expense:

$$\frac{\$71,000 - \$56,000}{6,000 - 4,500} = \frac{\$15,000}{1,500} = \$10 \text{ per unit}$$

$56,000 - (4,500 x $10) = $11,000.

Cost formula = $11,000 per month plus $10 per unit.

Salaries and commissions:

$$\frac{\$180,500 - 143,000}{6,000 - 4,500} = \frac{\$37,500}{1,500} = \$25 \text{ per unit}$$

$143,000 - (4,500 x $25) = $30,500

Cost formula = $30,500 per month plus $25 per unit.

(*4 points)* .....

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7.2 Prepare an income statement in the **contribution format** for June.

Sales in units			*6,000*
Sales in dollars			*$840,000*
VC : COGS		*336,000*	
Ship @$10	*6,000*$10*	*60,000*	
Cmns @$25	*6,000*$25*	*150,000*	
VC – Total		*(3 points)*	*$546,000*
CM			*294,000*
FC Ship		*11,000*	
Adv		*70,000*	
Salary		*30,500*	
Insurance		*9,000*	
Depreciation		*42,000*	
FC – Total		*(3 points)*	*162,500*
Income			*$131,500*

Q.8(14) The accounts for a manufacturing company for an accounting period are listed below.

Sales	$41,500
Cost of goods sold	?
Purchases of direct materials	$12,500
Direct labour	$7,500
Finished goods inventory, beginning	$8,000
Work in process, beginning	$1,200
Work in process, ending	$1,700
Gross margin	$12,300
Finished goods inventory, ending	?
Accounts payable, beginning	$4,000
Accounts payable, ending	$2,800
Direct materials inventory, beginning	$3,700
Direct materials inventory, ending	$2,200
Indirect labour	$3,900
Indirect materials used	$2,200
Utilities expense, factory	$4,000
Amortization on factory equipment	$6,900

Required: Parts 1 and 2 are independent.

8.1 Find the missing values for Cost of goods sold and Finished Goods inventory.

Sales		$41,500
Cost of goods sold		$29,200
Gross margin		$12,300
Direct materials inventory, beginning	$3,700	
+ Purchases of direct materials	$12,500	
- Direct materials inventory, ending	$2,200	
= Direct Materials Used		$14,000
Direct Labour		$7,500
Indirect materials used	$2,200	
+ Indirect labour	$3,900	
+ Utilities expense, factory	$4,000	
+Amortization on factory equipment	$6,900	
= Total MOH		$17,000
Total Manufacturing Costs		$38,500
Add: WIP beginning		$1,200
Less: WIP ending		$1,700
= COGM		$38,000
Finished goods inventory, beginning	$8,000	
Add: COGM	$38,000	
Cost of Goods Available for Sale	$46,000	
Finished goods inventory, ending	$16,800	
COGS	$29,200	

(10 points)

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8.2 Assume that the company applied manufacturing overhead based on direct labour hours. The overhead rate was $4.00 per labour hour and the labour hours incurred was 4,400. Would overhead have been over – or under - applied. Would the over – or under - applied amount increase or decrease the Cost of Goods sold when the correction is made?

*Applied overhead = $4 *4,400 =$17,600*

Actual overhead 17,000(from schedule above) .....

Over-applied = 17,600 -17,000 = $600 (2 points)

It will have decreasing effect on COGS when the correction is made. (2 points)

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Topic not covered in F2012 .....

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