

Midterm Exam SOLUTION
ADM2341 Managerial Accounting Fall 2012

Your Professor: Check one **Adjaoud** **Ding** **Eden**

150 minutes

STUDENT NAME:

STUDENT NUMBER:

You may separate the pages but ensure that you put them back together and staple before handing in.

1. Please limit your answer to the space provided. Please indicate if you use the back of a page.
2. The use of standard abbreviations (O/H for Overhead and CM% for Contribution Margin Percentage) is quite acceptable.
3. Budget your time wisely.
4. Please do not ask the invigilators questions. Make reasonable assumptions where necessary.
5. Language dictionaries and calculators are allowed.
6. **You must show calculations.**

<u>Questions</u>	<u>Max Grade</u>
Q.1	20
Q.2	20
Q.3	20
Q.4	20
Q.5	20
Total	100

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 headsets), 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.

QUESTION 1 (20 points)

Question #	Solution
1*	A
2	A
3	C
4	B
5	C
6	D
7	B
8	A
9	B
10	D

QUESTION 2 (20 POINTS)

1. COGS: Not FC and average cost drops at higher output so.. mixed cost.

$$VC = (\$355,000 - \$275,000)/(35,000 - 250,000) = \$8 \text{ (2 points)}$$

$$FC = \$355,000 - (35,000 \times 8) = \$75,000 \text{ (1 point)}$$

Selling Expenses: Average cost VC = \$3.00 at all three levels so pure VC. (2 points)

Admin expenses, Not FC and average cost drops at higher output so, mixed cost

$$VC = (\$25,000 - \$20,000)/(35,000 - 25,000) = \$0.50 \text{ (2 points)}$$

$$FC = \$25,000 - (35,000 \times 0.50) = \$7,500 \text{ (1 points)}$$

2. Give two examples of likely components of the above **selling expenses** for this producer of metal window frames.

Possible examples, must be variable: selling commissions, variable shipping expense, bad debt expense %, packaging for shipping, Other reasonable? (2 points, 1 for any two)

3. Prepare an income statement in the contribution margin format for **2012**, assuming the cost structure remains the same and sales in 2012 are 40,000 units.

Year	2012		
	Per unit	Total	
Units sold		40,000	
Sales \$s	\$16.00	\$640,000	(2 points)
VCOGS	8.00	320,000	(2 points)
VSelling	3.00	120,000	(1 point)
VAdmin	.50	20,000	(1 point)
Contribution Margin	4.50	180,000	(1 point)
FC Mnf		75,000	(1 point)
FC Admin		7,500	(1 point)
Income		\$97,500	(1 point)

QUESTION 3 (20 POINTS)

1.

<u>DM Used</u>		
Beginning Balance, Direct Materials	\$40,000	
+ Purchases	300,000	
= Available for use	340,000	
- Ending Balance, Direct materials? Plug	210,000	(1 point)
Direct material used(from COGM)	130,000	
<u>COGM</u>		
Direct material used***	130,000	(1 point)
Direct labour**	390,000	(2 points)
Manufacturing Overhead*	780,000	(2 points)
= Manufacturing costs incurred	1,300,000	(1 point)
+ Beginning inventory, WIP	90,000	(1 point)
- Ending Inventory, WIP Plug	110,000	(1 point)
= Cost of Goods manufactured	1,280,000	(1 point)
<u>COGS</u>		
Beginning Inventory, FG	250,000	(1 point)
+ COGM	1,280,000	(1 point)
Available for sale	1,530,000	
- Ending Inventory, FG Plug	130,000	(1 point)
COGS	\$1,400,000	(1 point)

* MOH = 60% x \$1,300,000 = 780,000

** MOH = 200%*DI; So DL = 780,000/200% = 390,000

*** DM = 1,300,000 – 780,000 – 390,000 = 130,000

2. Prepare an income statement for 2011

Year	2011	
	Total	
Sales \$s	\$2,000,000*	(2 points)
- COGS	1,400,000	(1 points)
= Gross Margin	600,000	(1 points)
Operating Expense	220,000	(1 points)
Income	\$380,000	(1 points)

* Sales = COGS + Gross Margin = 1,400,000 + 600,000 = 2,000,000

Mortgage Outstanding is a balance sheet item, not an expense (- 2 points)

QUESTION 4 (20 POINTS)

(a) **Collections** and other calculations

The numbers in brackets (.5, for example) add to the (points)

Cash receipts and disbursements

a.	July	August	Sept
Cash receipts from Sales			
Sales (0.5)	6,000	50,000	
Receipts: 10%	600(.5)	5,000(.5)	
40%		2,160(.5)	
48%	--	--	
Total	600	7,160	(2 points)
b.			
Cash disbursements for purchases for Cost of Sales			
Cost of sales: 80%	4,800(1)	40,000(1)	320,000 (2 points)
+ EB @ 10%	4,000(.5)	32,000(.5)	(1 point)
- BB	480(.5)	4,000(.5)	(1 point)
= Purchases	8,320	68,000	
c. Cash disbursements:			
30%(this month)	2,496(.5)	20,400(.5)	(1 point)
70% (last month)	336(.5)	5,824(.5)	(1 point)
Total	2,832	26,224	

d) Prepare a monthly cash budget covering **the two month period** from July 1 to August 31.

Cash Budget

	July		August	
Opening balance – Cash	75,000		37,708	
Collections	600		7,160	
Available	75,600	(.5)	44,868(.5)	(1 point)
Disbursements:				
Purchases	2,832	(.5)	26,224(.5)	(1 point)
Other expenses	25,000	(.5)	--(.5)	(1 point)
Sales and Admin \$10,000 + 1%*Sales	10,060	(.5)	10,500(.5)	(1 point)
Total Disbursements	37,892	(.5)	36,724(.5)	(1 point)
Excess(Deficiency)	37,708	(.5)	8,144(.5)	(1 point)
				(1 points)
(Borrowings)Repayments			18,000(0.5)	
Interest			1%*18,000=180(0.5)	
Ending Balance – Cash	37,708	(1)	25,964**(1)	(2 points)

Details: 1, 1,1

IF INTERESTS UNPAID, THEN BORROWINGS = 17,000

ENDING BALANCE = \$25,144

Variable expense ratios:	
Cost of sales	60%
Commissions	<u>5%</u>
Total	65%
Contribution margin ratio (100% - 65%)	35%

Fixed expenses:	
Sales manager	\$ 160,000
3 salespersons @ \$30,000 each	90,000
Administrative	<u>100,000</u>
Total	<u>\$ 350,000</u>

Fixed expenses	\$ 350,000
Contribution margin ratio	<u>+ 0.35</u>
Break-even point	<u>\$1,000,000</u>

OR COMMISSIONS 5 % X 3 = 15 %

TOTAL VC = 75 %

CM = 25 %

BEP = 350,000/.25 = \$1,400,000

1 mark for calculating VC%, 1 mark for CM%, 0.5 marks for 160K (sales manager), 0.5 for 90K (salespersons), and 0.5 for 100K (administrative). 1.5 marks for calculating the BEP in dollars.

c)

VC % = 60% (cost of sales) + 25% (commissions) = 85%

CM% = 1 - VC% = 15%

Sales volume = (FC + Profit objective) / CM% = (100K + 1,900K) / 15% = \$13,333,333.

1.5 marks for VC%, 1 mark for CM%, 1 mark for adding up FC and Profit objective, i.e. \$2,000,000, and 1.5 marks for the sales volume.

d) VC% = 60% (cost of sales) + 5% (sale commission) = 65% **OR 60% + 5% X3 = 75 %**

CM% = 1 - VC% = 35% **OR 100% - 75 % = 25 %**

Total FC = **160K + 90K + 100K** = \$350K

Sale volume required = (FC + Profit) / CM% = (350K + 1,900K) / 35% = \$6,428,571

OR (350 + 1,900) / 25 % = \$9,000,000

1.5 marks for VC%, 1 mark for CM%, 1.5 marks for total FC (i.e., 0.5 for each number highlighted), 1 mark for adding up FC and Profit, and 1.5 marks for calculating the sale volume.

