

**Midterm Exam**  
**ADM2341 XX Managerial Accounting**

**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 are allowed.
6. **You must show calculations.**

<u>Questions</u>	<u>Max Grade</u>
<b>Q.1</b>	<b>20</b>
<b>Q.2</b>	<b>20</b>
<b>Q.3</b>	<b>30</b>
<b>Q.4</b>	<b>16</b>
<b>Q.5</b>	<b>14</b>
<b>Total</b>	<b>100</b>

**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)**

*For each of the following statements, circle the best answer and report your choice on the Scan Sheet.*

1. For a lamp manufacturing company, the cost of the insurance on its vehicles that deliver lamps to customers is best described as a:
  - A. Prime cost.
  - B. Manufacturing overhead cost.
  - C. Period cost.
  - D. Differential cost of a lamp.
  
2. Which of the following should NOT be included as part of manufacturing overhead at a company that makes office furniture?
  - A. Sheet steel in a file cabinet made by the company.
  - B. Manufacturing equipment depreciation.
  - C. Indirect labour.
  - D. Taxes on a factory building.
  
3. Anaconda Mining Company shipped 9,000 tons of copper concentrate for \$450,000 in March and 11,000 tons for \$549,000 in April. Use the high-low method to estimate the shipping costs for 12,000 tons to be shipped in May.
  - A. \$548,780.
  - B. \$549,020.
  - C. \$594,000.
  - D. \$598,500.
  
4. An analysis of past maintenance costs indicates that maintenance cost is an average of \$0.20 per machine hour at an activity level of 10,000 machine hours and \$0.25 per machine hour at an activity level of 8,000 machine hours. Assuming that this activity is within the relevant range, what is the total expected maintenance cost if the activity level is 8,700 machine hours?
  - A. \$400.
  - B. \$1,740.
  - C. \$2,000.
  - D. \$2,250.
  
5. At a sales level of \$300,000, James Company's gross margin is \$15,000 less than its contribution margin, its operating income is \$50,000, and its total selling and administrative expenses are \$120,000. At this sales level, what is the company's contribution margin?
  - A. \$155,000.
  - B. \$170,000.
  - C. \$185,000.
  - D. \$250,000.

6. Brasher Company manufactures and sells a single product that has a positive contribution margin. If the selling price and variable expenses both decrease by 5% and fixed expenses do not change, then what would be the effect on the contribution margin per unit and the contribution margin ratio?

<u>Contribution Margin per Unit</u>	<u>Contribution Margin Ratio</u>
A. Decrease	Decrease
B. Decrease	No change
C. No change	Decrease
D. No change	No change

7. The break-even in units sold will decrease if there is an increase in which of the following?

- A. Unit sales volume.
- B. Total fixed expenses.
- C. Unit variable expenses.
- D. Selling price.

8. If company A has a higher degree of operating leverage than company B, then which of the following statements is true?

- A. Company A has higher variable expenses.
- B. Company A's profits are more sensitive to percentage changes in sales.
- C. Company A is more profitable.
- D. Company A is less risky.

9. A company has provided the following data:

Sales	3,000 units
Sales Price	\$70 per unit
Variable Cost	\$50 per unit
Fixed Cost	\$25,000

If the sales volume decreases by 25%, the variable cost per unit increases by 15%, and all other factors remain the same, what will the outcome be for operating income?

- A. Decrease by \$31,875.
- B. Decrease by \$15,000.
- C. Increase by \$20,625.
- D. Decrease by \$3,125.

10. Capelli Hospital bases its budgets on patient-visits. The hospital's static budget for August appears below:

Budgeted number of patient-visits .....	8,300
Budgeted variable overhead costs:	
Supplies (@\$5.00 per patient-visit) .....	\$ 41,500
Laundry (@\$7.30 per patient-visit) .....	<u>60,590</u>
Total variable overhead cost .....	<u>102,090</u>
Budgeted fixed overhead costs:	
Wages and salaries .....	60,590
Occupancy costs .....	<u>73,040</u>
Total fixed overhead cost .....	<u>133,630</u>
Total budgeted overhead cost .....	<u><u>\$235,720</u></u>

What should be the total variable overhead cost at an activity level of 9,300 patient-visits per month?

- A. \$114,390.
- B. \$149,730.
- C. \$102,090.
- D. \$133,630.

**QUESTION 2 (20 points)**

The following data are taken from the accounting records of Woods Company for the year ended December 31, 2011:

Sales	\$1,380,000
Advertising	\$120,000
Ending finished goods inventory	to be determined
Beginning direct materials inventory	\$50,000
Purchases of direct materials	\$280,000
Ending direct materials inventory	to be determined
Direct Labour	\$210,000
Rent-factory	\$45,000
Rent-administration	\$15,000
Supplies-factory	\$198,000
Depreciation-factory	\$154,000
Office salaries	\$40,000
Beginning work in process inventory	\$20,000
Ending work in process inventory	\$10,000
Beginning finished goods inventory	\$105,500
Sales Commissions	\$32,000
Direct materials used	\$250,000

**ADDITIONAL INFORMATION:**

1. Sale price per unit is \$46 for year 2011
2. There were 10,000 units in the beginning finished goods inventory
3. There were 4,000 units in the ending finished inventory
4. Gross margin is 40 % of sales
5. Woods company uses FIFO method to evaluate inventory

**REQUIRED:**

1. Prepare a Schedule of Cost of Goods Manufactured for 2011 (Show all details)
2. Prepare an Income Statement for 2011( Show all details)
3. Compute the following:
  - a) The production in units
  - b) The sales in units
  - c) The cost of goods manufactured per unit of the beginning finished goods inventory



**QUESTION 3 (30 points)**

Best Books is a wholesale distributor of books and magazines. The management of Best Books puts a lot of emphasis in managerial planning and control, and prepares a master budget annually. A budgeting committee has been established by the management, involving both managers and employees. The committee has agreed on the following guidelines in preparing the budget:

1) Projected sales are as follows:

January, 2012	141,000
February, 2012	139,000
March, 2012	124,000
April, 2012	127,000

- 2) Sales are 20% for cash and 80 % on credit. Of the credit sales, 50% are received in the month of sale and 45% are received the second month of sale. The remaining 5 % are uncollectable. The accounts receivable at December 31, 2011 are \$47,880.
- 3) Selling and administrative expenses are 10% of sales plus a fixed expense of \$6,000 monthly. Included in the monthly selling and administrative expenses is \$1,500 of depreciation. Of the operating expenses incurred, 60% are paid in the month incurred and the remainder is paid in the next month. Selling and administrative expenses payable at December 31, 2011 are \$7,120.
- 4) When books and magazines are purchased, 40 % are paid in the month of purchase and 60 % are paid in the month following the month of purchase. The accounts payable at December 31, 2011 are \$49,608.
- 5) Desired ending inventory is set at 60% of the following month's cost of goods sold.
- 6) Ending inventory at December 31, 2011 is \$50,760.
- 7) Gross margin is 40 % of sales.
- 8) To support its operation in 2012, the company will purchase land costing \$80,000 in February 2012. It is a cash purchase.
- 9) The company wants a minimum monthly cash balance of \$10,000. The cash balance at December 31, 2011 is \$10,000.
- 10) The company has an agreement with a local branch of Bank of Montreal that allows the company to borrow in increments of \$1,000 at the beginning of each month; the interest rate on these loans is 12% per year. The company would, as far as it is able, repay the loan plus accumulated interest at the end of the quarter. Interest is not compounded.

***REQUIRED:***

Using the data above, complete the following statements and schedules for January, February, and March, 2012.

Show all supporting calculations below the cash budget.

**1. Sales collections budget**

**2. Merchandise Purchase budget**

**3. Cash disbursements-Merchandise Purchases Budget**

**4. Operating expenses budget**

**5. Cash disbursement- Operating expenses budget**

## 6. Cash Budget

**Supporting Calculations:**

**QUESTION 4 (16 points)**

The following data were obtained from the accounting information system of POC Corporation:

<u>Month</u>	Units <u>Produced</u>	Raw Materials <u>Used</u>	Factory <u>Supplies</u>	Production Manager <u>Salary</u>	Operating <u>Expenses</u>
January	60	\$1,560	\$550	\$3,000	\$465
February	80	2,080	700	3,000	575
March	50	1,300	475	3,000	410
April	30	780	325	3,000	300

**REQUIRED:**

- Describe the behaviour of each of the costs shown above as fixed, variable, or mixed.
- Use the high-low method to determine a cost function for any mixed cost(s).
- Estimate the total manufacturing costs in May if POC Corporation produces 70 units in May.
- Prepare a **contribution income statement** for the month of May if the sales revenues are \$8,160 with unit price \$96 (assuming unit production costs keep constant among different months).

**QUESTION 5 (14 points)**

Rawlings Company prepared the following budget information for the coming year:

	Product A	Product B	Total
Sales in units	20,000	100,000	120,000
Sales in dollars	\$85,714	\$1,000,000	\$1,085,714
Total variable cost	25,714	800,000	825,714

Total fixed cost is \$156,000 for the year.

**Required:**

- a) Prepare the **Income statement** for the coming year
- b) What is the company's break-even point given the sales mix above?
- c) How many units should be sold to make a total Net Income of \$200,000?

**Answers:**

**QUESTION 1 (20 points)**

1C            2A            3D            4C            5C            6B            7D  
8B            9A            10A

**QUESTION 2 (20 points)**

BI	50000	
Add: Purchases	280000	
Less: EI	<u>80000</u>	
DM used		250000
DL		210000
MOH		
Rent	45000	
Supplies- factory	198000	
Dep. factory	<u>154000</u>	397000
total		857000
Add: BIWIP	20000	
Less: EIWIP	10000	
COGM		867000

**1 point for format**

Sales		1380000
COGS		828000
BI	105500	
Add: COGM	867000	
Less: EI	144500	
GM		552000
S&A expenses		
Advertising	120000	
Office salaries	40000	
Sales commissions	32000	
Rent	<u>15000</u>	<u>207000</u>
Net Operating Income		<u>345000</u>

**Two marks for each requirement: Production and COGM, 1 for Sales**

Production                      24000 units  
Sales                              30000 units  
COGM LAST  
year                      \$105,500/10,000units=10.55

**QUESTION 3 (30 points)****1. Sales collections budget**

	<b>Jan.</b>	<b>Feb.</b>	<b>Mar.</b>
Cash sales	28,200	27,800	24,800
Credit sales-December	47,880		
Credit sales-January	56,400	50,760	
Credit sales-February		55,600	50,040
Credit sales-March			49,600
<b>Total collections</b>	<b>132,480</b>	<b>134,160</b>	<b>124,440</b>

**2. Merchandise Purchase budget**

	Jan	Feb	Mar	<b>Dec.2011</b>
Budgeted COGM	84600	83400	74400	<b>79800</b>
Add: Desired EI	50040	44640	45720	<b>50760</b>
Total needs	134640	128040	120120	<b>130560</b>
Less: BI	50760	50040	44640	<b>47880</b>
Purchases required	83880	78000	75480	<b>82680</b>

**3. Cash disbursements-Merchandise Purchases Budget**

	Jan	Feb	Mar
Dec, 2011	49608		
Jan, 2012	33552	50328	
Feb		31200	46800
Mar.			30192
<b>Total:</b>	<b>83160</b>	<b>81528</b>	<b>76992</b>

**4. Operating expenses budget**

	Jan	Feb	March
Variable 10 %	14,100	13,900	12,400
Fixed	<u>6,000</u>	<u>6000</u>	<u>6000</u>
	20,100	19,900	18,400
Depreciation	<u>1,500</u>	<u>1,500</u>	<u>1,500</u>
Total	18,600	18,400	16,900

## 5. Cash disbursement- Operating expenses budget

	Jan	Feb	March
December	7,120		
Jan	11160	7440	
Feb		11040	7360
Mar.			<u>10140</u>
	<b>18280</b>	<b>18480</b>	<b>17500</b>

## 6. Cash Budget

	Jan	Feb.	Mar.
Cash balance, beginning	10000	41040	10192
Add collections from sales	132480	134160	124440
Total cash available	142480	175200	134632
Less disbursements:			
For inventory purchases	83160	81528	<b>76992</b>
For selling & administrative expenses	18280	18480	17500
For land		80000	
Total disbursements	101440	180008	94492
Excess (deficiency) of cash available over disbursements	41040	-4808	40140
Financing:			
Borrowings		15000	
Repayment			15000
Interest			300
Cash balance, ending	41040	10192	24840

### QUESTION 4 (16 points)

- a. Description of cost behaviour:

**Cost of raw materials used: Variable**  
**Cost of factory supplies: Mixed**

**Operating expenses: Mixed.**

**Production manager salary: Fixed cost**

- b. High-low method analysis for factory supplies

**Cost function= 7.50 X + 100**

High-low method analysis for operating expenses

**Cost function = 5.50 X + 135**

- c. Raw material/unit= \$780/30 = \$26

Total manufacturing costs = raw material costs + factory supplies + Salary  
**= 26 x 70 + (100 + 7.5 x 70) + 3,000 = \$5,445**

d.

Contribution Income Statement  
POC Corporation

For the Month Ended May 31

Sales revenues		\$8,160
Variable expenses		
Raw materials (\$26 x 85)	\$2,210	
Factory supplies (\$7.50x 85)	637.5	
Operating expenses (\$5.50 x 85)	<u>467.5</u>	<u>3,315</u>
Contribution margin		\$ 4,845
Fixed expenses		
Production managers` Salary	\$3,000	
Factory supplies	100	
Operating expenses	<u>135</u>	<u>3,235</u>
Operating income		\$1,610

**QUESTION 5 (14 points)**

	A	B	Total
sales units	20000	100000	120,000
Sales dollars	85714	1000000	1,085,714
TVC	25714	800000	825,714
CM	60000	200000	260,000
TFC			156,000
OI			104,000
TFC	156000		
CM % average	0.239473747		
CM average	2.166666667		
BEP units	72000		
BEP dollars	651428.4		

Units to be sold to have NI=\$200,000

Numerator	356000	(156000+200000)
Denominator	2.166666667	
Units to be sold	164307.6923	