Midterm Solutions and Grading Key

WILFRID LAURIER UNIVERSITY

WATERLOO, ONTARIO

Session: Fall 2017 ***Name_____***

Course no: BU467 ***I.D. #:_____***

Title: Advanced Management Accounting ***Section: _____***

Professor(s): Maier

Number of pages: 7 Pages ***Length of examination: 2.0 hours***

Examination aids allowed: Personal Computer, Textbook, Non-Programmable Calculator

The doors of the examination room will be opened approximately 10 minutes before the start of the examination. Candidates will be permitted to enter the examination room quietly up to one half hour after the scheduled start of the exam. Candidates arriving late will not be allowed any extra time.

*Candidates must **not begin** the examination or attempt to read the examination questions **until instructed** to do so.*

***THE UNIVERSITY IS NOT RESPONSIBLE FOR THE LOSS OF VALUABLES BROUGHT INTO THE EXAM LOCATIONS OR CLASSROOMS WHERE EXAMS ARE BEING WRITTEN.*

*Candidates once having entered, may **not leave** the exam room before completing and submitting the exam **unless accompanied by a Proctor**. Candidates are **not** permitted to submit their examination and **leave the examination room until 1 hour** after the examination has begun, and in no case before their attendance has been taken. In no case may a candidate leave the room temporarily, for any reason, until 30 minutes after the start of the examination. In order that remaining candidates are not disrupted, candidates must remain seated and may not leave the examination room during the last 15 minutes of the examination session.*

*At the close of the examination period, candidates must stop writing immediately. The Presiding Officer may seize the papers of candidates who fail to observe this requirement, and a penalty may be imposed at the discretion of the instructor. Candidates must **submit all their work**, according to the instructions of the Presiding Officer, including all materials and a copy of the examination paper with their name and student ID number written on it. Unused examination booklets may not be taken from the examination room.*

A candidate who leaves before the examination is over must hand in all completed and attempted work, notes made during the exam, and a copy of the examination paper with their name and student ID number on it.

*Talk or any form of **communication between candidates** is absolutely **forbidden**. No information of any kind is to be written on the question paper or on scrap paper for the purpose of assisting other candidates. Responses to questions must not be done in an exaggerated way or in a manner that will involve transmission of information to others.*

*Candidates must remain seated during the examination period. A candidate needing to speak to the proctor (e.g. to ask for additional supplies or to request permission to leave the examination room for any reason) should so indicate by **raising** his or her **hand**.*

Questions concerning possible errors, ambiguities or omissions in the examination paper must be directed to the proctor who will investigate them through the proper channels. The proctor is not permitted to answer questions other than those concerning the examination paper.

*Candidates must **not use** or attempt to use any **improper source of information**. No candidates for an examination may bring into the examination room any books, notes or other material containing information pertaining to the examination unless the examiner has given instructions that such material will be allowed and this instruction is specified on the examination paper. Any item brought into the examination room is subject to inspection.*

***No briefcases, backpacks or other bags and carriers may be brought to the desk** site where the candidate is writing the examination. These bags should be left outside the examination room. If books, notes etc. cannot be left outside the examination room, they must be put at the front of the examination room in a place designated by the proctor before a candidate takes a seat. Candidates are advised not to bring valuables to the examination room.*

*Unless specified by the professor**, no calculator, electronic or communication devices will be allowed** in the examination room, including cell phones, smartphones, etc. Cell phones will be taken away if found and an Irregularity notice will be filed with the Integrity Office. Allowed aids must be indicated on the examination paper. **If non-programmable calculators are permitted, only those without lids,** authorized by the instructor, will be allowed. It is the candidate's responsibility to ascertain whether the use of calculators is permitted, and, if it is, whether any restrictions are imposed on the types of calculators that may be brought to the examination. **No pencil cases are allowed on the desks.***

*Translation **dictionaries** (e.g. English-French) or other dictionaries, (thesaurus, definitions, technical) **are not allowed unless specified** by the instructor and indicated on the examination paper. Electronic dictionaries are never allowed.*

***Except for bottled water (with label removed), no food or drink** is allowed in the examination room. Candidates with health problems that warrant relaxation of this regulation should provide medical documentation to the presiding officer prior to the beginning of the examination. Such students should restrict themselves to those items and packaging that will least distract other examinees.*

*Candidates are expected to write their examinations in an honest and straightforward manner. Where there are reasonable grounds for believing a **violation of exam protocol** has occurred, the candidate will be **subject to the disciplinary procedures** and sanctions according to the University Calendar.*

Only currently registered students will be permitted to write the final exam.

Examinations conducted at Wilfrid Laurier University will be bound by WLU regulations, regardless of where the candidate is registered.

Approved by Senate (Oct 27/2003) Updated July 2016

Instructions Please Read Carefully

1. This is a 2.0-hour examination. The total time allowance to complete the questions on this exam is 105 minutes. This leaves 15 minutes to deal with any technical problems that might arise. **It is your responsibility to ensure that your computer is in good working order for the exam. If you have any concerns about the reliability of your computer you should arrange to borrow, and become familiar with, a laptop from Prism Resources.**

2. You may use your computer, anything that is on your computer, and your textbook to complete this exam. You may not access or use any other materials.

3. You may not communicate with any other student for any reason. Any communication will be considered academic misconduct.

4. **You are required to have the radio (Wi-Fi) turned off your computer during the exam**. You may only turn on your Wi-Fi to upload any files created during the examination. The proctors will announce when there are 10 minutes remaining in the exam so you can turn on the Wi-Fi to ensure that you are ready to upload your files. Any student found to have the Wi-Fi turned on prior to this announcement – unless s/he is finished the examination – will be viewed as engaging in academic misconduct.

5. **You will be required to bring a USB flash drive with you to the examination**. In the event that you experience technical difficulties uploading your files, you will use the flash drive to store any files that you create during the examination. You will be provided with an envelope for your USB flash drive. You should indicate your name, student number, and section on the envelope. At the end of the exam you will put the USB flash drive in the envelope, seal the envelope, and submit the envelope along with this exam booklet. Your flash drive will be returned to you after your instructor has accessed the files on your flash drive.

6. In the spaces provided on this exam booklet you will write a word summary of the analysis that you have prepared and uploaded to MyLS (or stored on the USB flash drive). You should identify clearly the file name that contains the analysis of the question that you are answering.

Question	Maximum	Grade
1	55	
2	30	
3	20	
Total	**105**	

Question 1 (Maximum Grade: 55 points – Suggested Time: 55 minutes)

Flanders del Rio Inc. manufactures canoes for sale throughout Ontario. The company produces two different canoes: a solo model (12') and a deluxe model (16'). The company uses a standard costing system in their annual budgeting process.

The budget prepared for the year ending December 31, 2016 was as follows:

Flanders del Rio Inc.
Static Budget
For the year ending December 31, 2016

	12' Solo	16' Deluxe	Total
Sales data:			
Units	750	1,100	1,850
Price	$ 795	$ 1,400	
Revenue	$ 596,250	$ 1,540,000	$ 2,136,250
Variable costs			
Direct material	281,250	825,000	1,106,250
Direct labour	165,000	363,000	528,000
Overhead	22,500	66,000	88,500
Sub-total	**$ 468,750**	**$ 1,254,000**	1,722,750
Contribution margin	**$ 127,500**	**$ 286,000**	**$ 413,500**
Fixed costs			
Manufacturing			$ 50,000
Selling and admin			$ 35,000
			$ 85,000
Profit/(Loss) before taxes			**$ 328,500**

The unit prices and quantities used by Flanders to construct this budget were as follows:

	12' Solo	16' Deluxe
Direct material		
Standard quantity (kgs)	15	25
Standard price/unit (kg)	$ 25.00	$ 30.00
	$ 375.00	$ 750.00
Direct Labour		
Standard quantity (hours)	10	15
Standard rate/hour	$ 22.00	$ 22.00
	$ 220.00	$ 330.00
Variable Overhead		
Standard quantity	10	15
Standard rate/hour	$ 3.00	$ 4.00
	$ 30.00	$ 60.00
Total Unit Cost	**$ 625.00**	**$ 1,140.00**

The standard hourly rate for labour employed at Flanders was $22. Variable overhead included indirect labour and small purchased items that were fastened to the canoes. It has been established that variable overhead at Flanders varies directly with direct labour hours. Fixed costs (manufacturing and selling & administrative) are not applied to products.

The income reported for 2016 was $92,443 which much lower than budgeted as reported in the following exhibit:

Flanders del Rio Inc.
Actual Results
For the year ending December 31, 2016

	12' Solo	16' Deluxe	Total
Sales data:			
Units	695	1,050	1,745
Price	$ 795	$ 1,400	
Revenue	$ 552,525	$ 1,470,000	$ 2,022,525
Variable costs			
Direct material	278,000	740,250	1,018,250
Direct labour	175,140	365,400	540,540
Overhead	21,893	60,900	82,793
Sub-total	**$ 475,033**	**$ 1,166,550**	1,641,583
Contribution margin	**$ 77,493**	**$ 303,450**	**$ 380,943**
Fixed costs			
Manufacturing			$ 256,500
Selling and admin			$ 32,000
			$ 288,500
Profit/(Loss) before taxes			**$ 92,443**

These results reflected the following per unit costs for the two products:

	12' Solo	16' Deluxe
Direct material		
Standard quantity (kgs)	16	23.5
Standard price/unit (kg)	$ 25.00	$ 30.00
	$ 400.00	$ 705.00
Direct Labour		
Standard quantity (hours)	10.5	14.5
Standard rate/hour	$ 24.00	$ 24.00
	$ 252.00	$ 348.00
Variable Overhead		
Standard quantity	10.5	14.5
Standard rate/hour	$ 3.00	$ 4.00
	$ 31.50	$ 58.00
Total Unit Cost	**$ 683.50**	**$ 1,111.00**

Required:

a) (Maximum Points: 20) (Suggested Time: 20 Minutes)

Prepare a flexible budget for the year 2016 (in Excel). What is the net income for the flexible budget? (Write in the space below)

	Actual			Flex Budget	Flex Budget			Sales Volume		Budget	
	$/Kg	Units	Amount	Variance	Units	Amount		Variance		Units	Amount
Revenue											
12' Solo	$ 795.00	695	$ 552,525	$ -	695	$ 552,525	2	$ 43,725	$ 795.00	750	$ 596,250
16' Deluxe	$ 1,400.00	1,050	1,470,000	-	1,050	1,470,000	2	70,000.00	1,400.00	1,100	1,540,000
		1,745	$ 2,022,525	$ -	1,745	$ 2,022,525		$ 113,725		1,850	$2,136,250
Costs											
Direct Material											
12' Solo	$ 25.00	16.0	$ 278,000	$ (17,375)	15.0	$ 260,625	2	$ 20,625	$ 25.00	15	$ 281,250
16' Deluxe	$ 30.00	23.5	740,250	47,250	25.0	787,500	2	37,500.00	$ 30.00	25	825,000
			$ 1,018,250	$ 29,875		$ 1,048,125		$ 58,125			$1,106,250
Direct labour											
12' Solo	$ 24.00	10.5	$ 175,140	$ (22,240)	10.0	$ 152,900	2	$ 12,100	$ 22.00	10.0	$ 165,000
16' Deluxe	$ 24.00	14.5	365,400	(18,900)	15.0	346,500	2	16,500	$ 22.00	15.0	363,000
			$ 540,540	$ (41,140)		$ 499,400		$ 28,600			$ 528,000
Variable OH											
12' Solo	$ 3.00	10.5	$ 21,893	$ (1,043)	10.0	$ 20,850	2	$ 1,650	$ 3.00	10.0	$ 22,500
16' Deluxe	$ 4.00	14.5	60,900	2,100	15.0	63,000	2	3,000	$ 4.00	15.0	66,000
			$ 82,793	$ 1,058		$ 83,850		$ 4,650			$ 88,500
Total costs											
12' Solo			$ 475,033	$ (40,658)		$ 434,375		$ 34,375	$ 50		$ 468,750
16' Deluxe			$ 1,166,550	$ 30,450		$ 1,197,000		57,000	$ 56		$1,254,000
			$ 1,641,583	$ (10,208)		$ 1,631,375		$ 91,375	$ 106		$1,722,750
CM											
12' Solo			$ 77,493	$ 40,658		$ 118,150	1/2	$ 9,350	**$ 170**		$ 127,500
16' Deluxe			$ 303,450	$ (30,450)		$ 273,000	1/2	$ 13,000	**$ 260**		$ 286,000
			$ 380,943	$ 10,208		$ 391,150		$ 22,350			$ 413,500
Fixed Costs											
Manufacturing			$ 256,500	$(206,500)		$ 50,000	1	$ -			$ 50,000
Selling & Admin			$ 32,000	3,000		$ 35,000	1	-			$ 35,000
			$ 288,500	$(203,500)		$ 85,000		$ -			$ 85,000
Net profit			**$ 92,443**	**$ 213,708**		**$ 306,150**	1	**$ 22,350**			**$ 328,500**
						Total:	20				

b) (Maximum Points: 25) (Suggested Time: 25 Minutes)

Calculate the following variances for both the 12' solo and the 16' deluxe models (Write your answers in the spaces below):

i. Direct material – price & quantity **8 marks total**

DM - Rate Variance **1 (within bracket) + 1 outside**

Solo ($25-$25)*16*695 = 0

Deluxe ($30-30)*23.5*1,050 = 0

DM - Efficiency Variance **- 1 if no Fav or Unf**

Solo (16-15)*$25*695 = $17,375 U

Deluxe (23.5-25)*$30*1,050 = $47,250 F

ii. Direct labour – rate & efficiency **8 marks total**

DL - Rate Variance **1 (within bracket) + 1 outside**

Solo ($24-22)*10.5*695 = $14,595 U

Deluxe ($24-22)*14.5*1,050 = $30,450 U

DL - Efficiency Variance **- 1 if no Fav or Unf**

Solo (10.5-10)*$22*695 = $7,645 U

Deluxe (14.5-15)*$22*1,050 = $11,550 F

iii. Variable overhead – rate & efficiency **8 marks total**

Var OH - Rate **1 (within bracket) + 1 outside**

Solo ($3-$3)*10.5*695 = 0

Deluxe ($4-$4)*14.5*1,050 = 0

Var OH - Efficiency **- 1 if no Fav or Unf**

Solo (10.5-10)*$3*695 = $1,042.50 U

Deluxe (14.5-15)*$4*1,050 = $2,100 F

iv. Fixed manufacturing **1 mark total**

$256,500 - $50,000 = $206,500 U **(-1/2 if Selling & Admin included)**

c) (Maximum Points: 10) (Suggested Time: 10 Minutes)

Using the data in the master budget for 2016, determine the breakeven point in unit sales and dollar sales for Flanders del Rio Inc., assuming that the product mix remains constant overall sales volumes.

WACM

$170 * 750/1,850 + $260 * 1,400/1,850 = $223.51

1 mark for each correct CM + 1 mark for each correct porportion + 1 total = 5 marks

Breakeven

$85,000/$223.51 = 380.29 units

1 mark for correct fixed costs (master budget)

Amount

380.29 * 750/1,850 = 154 or 155 units	$ 122,566.44	
380.29 * 1,100/1,850 = 226 or 227 units	316,565.73	
	$ 439,132.17	4 marks

Question 2 (Suggested Time 30 minutes) (Maximum Grade 30)

Jasmine Singh, the Controller for Ecosmart Products Inc., is preparing a cash budget for the first quarter of the new fiscal year, which begins on January 1. The following information is available:

Balance Sheet Information as of December 31

Current Assets:	
Cash	$ 55,000
Accounts receivable	165,000
Inventory	75,000
Current Liabilities:	
Accounts payable	$40,000

Recent and Forecast Sales

November	$150,000
December	130,000
January	125,000
February	145,000
March	140,000
April	100,000

- Monthly sales are 25% cash and 75% credit. The credit sales are collected as follows: 40% in the month following the sale and 60% in the second month following the sale. Jasmine expects that bad debts will be about 2% of sales
- The gross margin averages 30% of sales.
- Operating costs include salaries and wages of $20,000, rent of $10,000 and miscellaneous cash expenses of $2,500 per month.
- Purchases for inventory are made in accordance with company policy of maintaining inventory balances of 60% of the forecast sales for next month with the remainder purchased in the month of sales. The company's suppliers offer terms of 2/10, n/30 and Ecosmart Products takes advantage of all available discounts by paying for inventory immediately upon receipt.
- During the month of December, Ecosmart took delivery of new furniture costing $40,000 for its corporate offices. Jasmine made arrangements to pay for the furniture in two equal installments; the first payment is due 30 days after delivery and the second payment is due 60 days after delivery.

Part 1 (Suggested Time 14 minutes) (Maximum Grade 14)

Prepare a schedule showing the cash receipts for the first three months of the new fiscal year. What is the total cash receipts for the first three months of the new fiscal year?

Budgeted monthly cash receipts

Item		November	December	January		February		March	1st Quarter	April
Total sales		$ 150,000	$ 130,000	$ 125,000		$ 145,000		$ 140,000		$ 100,000
Credit sales	0.75	112,500	97,500	93,750		108,750		105,000		1 mark each month
Cash sales		37,500	32,500	31,250		36,250		35,000		Total 3 marks
Receipts:										
Cash sales			Jan Cash	31,250	Feb Cash	36,250	Mar Cash	35,000	102,500	1 mark each month
AR Collections - 1 month	0.4		$97,500*40%	39,000	$93,750*40%	37,500	$108,750*40%	43,500	120,000	1 mark each month
AR Collections - 2 months	0.58		$112,500*58%	65,250	$97,500*58%	56,550	$93,750*58%	54,375	176,175	1 mark each month
				$ 135,500		$ 130,300		$ 132,875	$ 398,675	Total 12 marks
				1/2 mark total		1/2 mark total		1/2 mark to	1/2 mark total	
				(Final total if Bad debts recognized in month of sales: $398,705)						Grand total: 14 marks

Part 2 (Suggested Time 10 minutes) (Maximum Grade 10)

Prepare a schedule showing the payments for inventory purchases for the first three months of the new fiscal year. How much will Flanders pay for inventory in the first quarter?

Budgeted monthly cash disbursements (purchases)

	GM%								
Item	**0.7**	**(-1 mark if missed)**	**January**		**February**		**March**	**1st Quarter**	
Purchases - current month	0.4	**$125,000*70%*40%**	$ 35,000	**$145,000*70%*40%**	$ 40,600	**$140,000*70%*40%**	$ 39,200	$ 114,800	**1 mark each month**
Purchases - next month	0.6	**$145,000*70%*60%**	60,900	**$140,000*70%*60%**	58,800	**$100,000*70%*60%**	42,000	161,700	**1 mark each month**
Sub total			$ 95,900		$ 99,400		$ 81,200	$ 276,500	
Less: Discounts		**$95,900*2% (CF)**	1,918	**$99,400*2% (CF)**	1,988	**$81,200*2% (CF)**	1,624	5,530	**1 mark each month**
Total			$ 93,982		$ 97,412		$ 79,576	$ 270,970	**1 mark total**

Part 3 (Suggested Time 6 minutes) (Maximum Grade 6)

Prepare a schedule showing the forecast cash position (balance) for the first quarter assuming that Flanders pays interest of 5% on overdraft balances. What is the cash balance at the end of the first quarter?

Cash balances

Item		**January**	**February**	**March**	**1st Quarter**
Beginning cash balance	**1 mark (opening)**	$ 55,000	$ 44,018	$ 24,406	$ 55,000
Plus: receipts	**1 mark (carry fwd)**	135,500	130,300	132,875	398,675
Less: disbursements (inventory)	**1 mark (carry fwd)**	$ (93,982)	$ (97,412)	$ (79,576)	$ (270,970)
Less: operating expenses	**1 mark**	(32,500)	(32,500)	(32,500)	$ (97,500)
Less: capex (furniture)	**1 mark**	(20,000)	(20,000)		(40,000)
Ending balance	**1 mark**	$ 44,018	$ 24,406	$ 45,205	$ 45,205

Question 3. 20 marks – 20 minutes

Dora Chan of Red Leaf Pictures (RLP) is in negotiations with The Movie Channel (TMC) for the rights to a movie she is producing. TMC will pay RLP a fixed license fee of $2.5 million and 10% of the gross pay-per-view revenue. The key area of uncertainty is how many homes will order the movie. The price paid to view a movie is $9 per home.

Dora obtained the following probability distribution for homes purchasing the movie:

Demand	Probability
300,000	10%
500,000	50%
700,000	30%
1,000,000	10%

a) **(Maximum Grade: 15 points – Suggested Time: 15 minutes)**
What is the expected value of agreement with TMC?

Contribution margin:

	Royalty	
CM per unit		
Revenue	$ 9.00	
Variable Cost	$ 8.10	
Net royalty	$ 0.90	**2 marks**

1. License Fee

Units Sold	Contribution Margin Per Unit	Contribution Margin Total	Add: Fixed Fee	Profit/(Loss)	Probability	Expected Profit/(Loss)
300,000	$ 0.90	$ 270,000	$ 2,500,000	$ 2,770,000	10%	$ 277,000
500,000	$ 0.90	$ 450,000	$ 2,500,000	$ 2,950,000	50%	$1,475,000
700,000	$ 0.90	$ 630,000	$ 2,500,000	$ 3,130,000	30%	$ 939,000
1,000,000	$ 0.90	$ 900,000	$ 2,500,000	$ 3,400,000	10%	$ 340,000
		4 marks		**4 marks**		**$3,031,000**
						4 marks probabilities
						1 mark total

b) **(Maximum Grade: 5 points – Suggested Time: 5 minutes)**
If the production costs to produce the film were $3 million, should Dora accept the offer from TMC? Explain why or why not in the space below.

Decision criteria = EV > production costs

Yes, accept the offer.

5 marks