Principles of Management Accounting

(MAC2601)

TUTORIAL LETTER 201
(Solution of assignment 1 – unique number: 274196)

DEPARTMENT OF MANAGEMENT ACCOUNTING

BAR CODE

CONTENTS

1 Introduction

Dear Student

Enclosed please find the suggested solution for assignment 01/2013 (first semester). It is in your own interest to compare the suggested solutions with your own answers and, should there be any differences, to establish whether calculation errors or errors of principle have been made.

Kind regards,

	Telephone number	Office number	E-mail
RK Nzhinga (Mr)	(012) 429-6937	1 – 49	MAC2601-13-S1@unisa.ac.za
M Ramaleba (Mr)	(012) 429-4334	1 – 47	
JM Verster (Mrs)	(012) 429-4767	1 – 50	

LECTURERS: MAC2601

2 Assessment plan – Assignment 01/2013 (First semester)

Number		Correct alternative	Question & reference
1.	(3)	Cost object	Question 1A; definition, Study Guide 1, p 6
2.	(4)	R2 350 000	Question 1A, calculation 1
3.	(4)	R1 190 000	Question 1A, calculation 2
4.	(2)	R6 000	Question 1B, calculation 3
5.	(3)	R514 100	Question 1B, calculation 4
6.	(1)	775 racquets and 645 racquets	Question 2A, calculation 5
7.	(4)	R3 886	Question 2A, calculation 6
8.	(2)	R52,64	Question 2A, calculation 7
9.	(1)	Credited with R6 500 overapplied overheads	Question 2B, calculation 8
10.	(1)	Apple: R72; Berry: R54	Question 2C, calculation 9
11.	(4)	FIFO: R4 275,00; WAM R4 225,10	Question 3, calculation 10
12.	(2)	R4 803	Question 3, calculation 10
13.	(2)	R4 734,75	Question 3, calculation 10
14.	(3)	R5 516	Question 3, calculation 10
15.	(4)	R5 584,25	Question 3, calculation 10
16.	(3)	Sales less variable cost of sales	Question 4; definition, Study Guide 1, p 33
17.	(3)	Sales less cost of sales	Question 4; Study Guide 1, p 156
18.	(1)	R86 400	Question 4, Calculation 11
19.	(1)	R108 000	Question 4, Calculation 12
20.	(3)	R167 200	Question 4, Calculation 13

3 Workings

1. In question 1, part A, the total operating costs for December 2012 amount to:

	Type ZWP R	Type XBR R	Total R
Manufacturing costs			2 316 000
Direct material	636 000	815 000	1 451 000
(159[①] x 4 000)			
(163[②] x 5 000)			
Direct labour			
(50 x 45/60 x 2 x 4 000)	300 000	375 000	675 000
(50 x 45/60 x 2 x 5 000)			
Manufacturing OH			
(125 000 + 15 000 + 50 000)			190 000
Non-manufacturing costs			34 000
Salary of the administrative assistant			12 000
Marketing costs			22 000
Total operating costs			2 350 000

[①] 35 + 15 + 80 + 29 = R159
[②] 40 + 10 + 80 + 33 = R163

2. Prime cost is the total of all the direct costs. It is the costs for direct materials and direct labour. R815 000 + 375 000 = R1 190 000 (only XBR was asked).

3. In question 1, part B, the total budgeted fixed printing cost for 2013 is:

Key formula: VARIABLE COST PER UNIT (HIGH-LOW METHOD)

$$= \frac{\text{The difference between cost at highest and lowest activity}}{\text{The difference between highest and lowest activity}}$$

$$= \frac{14\,000 - 10\,850}{9\,000 - 6\,900}$$

$$= \frac{3\,150}{2\,100}$$

= R1,50 per photo

Fixed costs
= total mixed costs for related activity level – (variable cost per unit x related activity level)
= 14 000 – (1,5 x 9 000)
= 14 000 – 13 500
= R500 (per month)

R500 x 12 = R6 000 for the full year (2012).

No changes expected for 2013, therefore 2013 also R6 000.

4. In question 1, part B, the margin of safety based on the budgeted figures for the year will be:

Key formula: CONTRIBUTION

Contribution = sales – total variable costs
= 20 – 0,15 (20) – 1,50
= 20 – 3 – 1,50
= R15,50 per unit

$$\text{Breakeven point in units} = \frac{\text{Total fixed cost}}{\text{Contribution per unit}}$$

$$= \frac{1252\,000}{15{,}50}$$

= 80 774,193 units rounded UP to 80 775 units

Key formula: MARGIN OF SAFETY (IN UNITS OR VALUE)

Margin of safety in units = Total sales (units) - breakeven sales (units)
= 96 800 x 1,1 - 80 775
= 106 480 - 80 775
= 25 705 units

Margin of safety in value = 25 705 units x R20/unit = R514 100

5. Economic order quantity of the proposed new products for Wimbledon Mania:

We ignore the warehouse rent, as it is a fixed cost that does not vary with the size of the order.

$$\text{Wacky Racquet EOQ} = \sqrt{\frac{2 \times U \times C}{H}}$$

= Square root of:

$$\sqrt{\frac{2 \times 100\,000 \times 15}{5}}$$

= 774,596
≈ 775 racquets

$$\text{Woza Racquet EOQ} = \sqrt{\frac{2 \times U \times C}{H}}$$

= Square root of:

$$\sqrt{\frac{2 \times (2\,500 \times 52) \times 16}{(9+1)}}$$

= 644,980
≈ 645 racquets

6. Weekly net wage of Mr. Wimbledon

	R
Normal wage (40 hours x R100)	4 000
Overtime (8 hours x R100 x 1,5)	1 200
Gross wage	5 200
Less: Pension (7,5% x R4000)	300
Taxable income	4 900
Less: Deductions:	1 014
Medical aid	80
UIF (1% x R5 200)	52
PAYE (18% x R4 900)	882
Weekly net wage	3 886

7. Step 1: Calculate the annual productive time

		Hours
Number of clock hours in a year	52 weeks x 40 hours	2 080,0
Less: Vacation hours	15 days x 8 hours	120,0
Less: Public holidays	10 days x 8 hours	80,0
Available clock hours		1 880,0
Less: Normal idle time	6% x 1 880 hours	112,8
Annual productive work hours		1 767,2

Step 2: Calculate the total annual labour cost

		R
Normal wage (52 – 3)	49 weeks x 40 hours x R40	78 400
Vacation pay	3 weeks x 40 hours x R40	4 800
Bonus pay	1 week x 40 hours x R40	1 600
Pension fund: employer contribution	8%① x R83 200	6 656
UIF: employer contribution	1% x R83 200	832
Medical aid fund: employer contribution		744
		93 032

① Refer errata on myUnisa.

Step 3: Calculate the hourly recovery rate

Labour recovery rate

$$= \frac{\text{Total annual labour cost (step 2)}}{\text{Total annual productive work hours (step 1)}}$$

$$= \frac{\text{R93 032}}{\text{1767,2 hours}}$$

= R52,64 per productive work hour

8. Applied versus actual overheads:

	R
Applied overheads	96 000
Actual overheads	89 500
	6 500

R6 500 over applied as applied overheads are more than actual overheads.
This R6 500 should be credited to the cost of sales account.

9. Primary & secondary allocation:

		Production		**Service**		
Overhead	**Basis**	**Apple**	**Berry**	**Cherry**	**Date**	**TOTAL**
Building Insurance	Floor area - m²	15 000	20 000	7 500	7 500	50 000
Cafeteria	No. of employees	30 000	20 000	20 000	5 000	75 000
Machine Insurance	Value of machines	200 000	150 000	100 000	0	450 000
Indirect material	Given	20 000	10 000	0	0	30 000
		265 000	200 000	127 500	12 500	605 000
Allocation of Date	50%; 30%; 20%	6 250	3 750	2 500	-12 500	
		271 250	203 750	130 000		
Allocation of Cherry	No. of employees	78 000	52 000	-130 000		
		349 250	255 750			
Round to nearest Rand		349 250	255 750			

Calculation of overhead allocation rates:

	Apple	**Berry**
Budgeted overheads	349 250	255 750
Budgeted labour hours	4 850	4 740
Allocation rate	72,01031	53,9557
Round to nearest Rand	72	54

10. FIFO METHOD

Date	Receipts			Issues			Balance		
Apr	Quantity	Price R	Amount R	Quantity	Price R	Amount R	Quantity	Price R	Amount R
1							200	5,00	1 000
2	400	5,50	2 200				200 400	5,00 5,50	1 000 2 200
5				200 100	5,00 5,50	**1 000** **550**	300	5,50	1 650
8	(50)	(5,50)	(275)				250	5,50	1 375
10	500	5,80	2 900				250 500	5,50 5,80	**1 375** **2 900**
12	480	5,30	2 544				250 500 480	5,50 5,80 5,30	1 375 2 900 2 544
15	(100)	(5,80)	(580)				250 400 480	5,50 5,80 5,30	1 375 2 320 2 544
20				**250** **400** **10**	**5,50** **5,80** **5,30**	**1 375** **2 320** **53**	470	5,30	2 491
23				**(90)**	**(5,50)**	**(495)**	90 470	5,50 5,30	495 2 491
25	440	5,75	2 530				90 470 440	5,50 5,30 5,75	495 2 491 2 530
							1 000		5 516

Value on 10 April which auditors can expect to find
= R1 375 + R2 900 = R4 275

Total value of issues of inventory for the month of April 2013
R1 000 + R550 + R1 375 + R2 320 + R53 - R495 = R4 803

The value of inventory at 30 April
R495 + R2 491 + R2 530 = R5 516

Explanation
Date

2 Two batches are available: 200 units @ R5,00, which came in first, and 400 units @ R5,50, which came in last.

5 A quantity of 300 units is issued: 200 units @ R5,00 are issued first, then the balance of 100 units from the 400 units @ R5,50.

8 The 50 units are returned @ the price at which they were purchased on 2 April 2013. (Returns to suppliers are treated as negative receipts and subtracted from the balance.)

10 Two batches are available: 250 units @ R5,50, which came in first, and 500 units @ R5,80, which came in last.

12 The freight charges of R144 must be added to the cost of the batch. (480 x R5,00 + R144 = R2 544; R2 544 ÷ 480 = R5,30)

15 The 100 units are returned @ the price at which they were purchased on 10 April. (Returns to suppliers are treated as negative receipts and subtracted from the balance.)

20 The first batch of 250 units @ R5,50 is issued, then subsequently, the batch of 400 units @ R5,80 is issued. Then 10 units are issued @ R5,30. 470 units @ R5,30 are still in inventory.

23 It is stated in the question that the units returned from production are from the last issues made on 5 April. (Returns from production are treated as negative issues and added to the balance.)

25 The freight charges of R330 must be added to the cost of the batch. (440 x R5,00 + R330 = R2 530; R2 530 ÷ 440 = R5,75)

The value of the inventory on hand at 30 April 2013 according to the FIFO method of inventory valuation is R5 516.

THE WEIGHTED AVERAGE METHOD

Date	**Receipts**			**Issues**			**Balance**		
	Quantity	**Price**	**Amount**	**Quantity**	**@ average price**	**Amount**	**Quantity**	**Average price (calc)**	**Amount**
Apr		**R**	**R**		**R**	**R**		**R**	**R**
1							200	5,000	1 000,00
2	400	5,50	2 200				200		1 000,00
							400		2 200,00
							600	5,333	3 200,00
5				**300**	**5,333**	**1 599,90**	600		3 200,00
							(300)		(1 599,90)
							300	5,334	1 600,10
8	(50)	5,50	(275)				300		1 600,10
							(50)		(275,00)
							250	5,300	1 325,10
10	500	5,80	2 900				250		**1 325,10**
							50		**2 900,00**
							750	5,633	**4 225,10**
12	480	5,30	2 544				750		4 225,10
							480		2 544,00
							1 230		6 769,10
15	(100)	(5,80	(580)				1 230		6 769,10
							(100)		(580,00)
							1 130	5,477	6 189,10
20				**660**	**5,477**	**3 614,82**	1 130		6 189,10
							(660)		(3 614,82)
							470	5,477	2 574,28
23				**(90)**	**(5,333)**	**(479,97)**	470		2 574,28
							90		479,97
							560	5,454	3 054,25
25	440	5,75	2 530				560		3 054,25
							440		2 530,00
							1 000	5,584	5 584,25

Value on 10 April which the auditors can expect to find
= R1 325,10 + R2 900,00 = R4 225,10

Total value of issues of inventory for the month of April 2013
R1 599,90 + R3 614,82 - R479,97 = R4 734,75

The value of inventory at 30 April
R3 054,25 + R2 530,00 = R5 584,25

Explanation
Date

2	The average price of the units in inventory after the receipt must be calculated: Add the units and the total cost Divide the total cost by the total units to obtain the weighted average price per unit.	 (200 + 400 = 600) (R1 000 + R2 200 = R3 200) (R3 200 ÷ 600 = R5,333)
5	All the units are issued at the average price. To determine the balance, calculate the value of the units in inventory at the average price. The rounding causes a small change in the average.	(300 x R5,333 = R1 599,90)
8	Units are returned to the supplier at the actual cost price. A new average price is calculated.	(R1325,10 ÷ 250 = R5,300)
10	The average price of the units in inventory after the receipt must be calculated: Add the units and the total cost Divide the total cost by the total units to obtain the weighted average price per unit.	 (250 + 500 = 750) (R1325,10 + R2 900 = R4 225,10) (R4 225,10 ÷ 750 = R5,633)
12	A new average price is calculated after each receipt.	(R6 769,10 ÷ 1 230 = R5,503)
15	Units are returned to the supplier at the actual cost price. A new average price is calculated.	(R6 189,10 ÷ 1 130 = R5,477)
20	All the units are issued at the average price.	
23	Units are returned from production at the average price at which they were issued on 5 April.	
25	A new average price is calculated after each receipt.	(R5 584,25 ÷ 1 000 = R5,584)

The value of the inventory on hand at 30 April 2013 according to the weighted average method of inventory valuation is R5 584,25.

11. R28,80① x 3 000 (25 000 – 22 000) = R86 400

① 10,80 + 12,00 + 6,00 = R28,80 (variable MANUFACTURING costs per unit)

12.

Variable manufacturing cost per unit	=	R28,80
Fixed manufacturing cost per unit (R180 000/25 000)	=	R 7,20
		R36,00

3 000 x R36 = R108 000

13.

Absorption costing net profit	188 800
Subtract: Fixed manufacturing cost in closing inventory (3 000 x R7,20)	(21 600)
Add: Fixed manufacturing cost in opening inventory	Nil
Direct costing net profit	167 200