PRINCIPLES OF MANAGEMENT ACCOUNTING

MAC2601

MAY/JUNE 2014 EXAMS: SUGGESTED SOLUTIONS

Department of Management Accounting

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1. INTRODUCTION

Dear Student

These are the solutions to May/June 2014 examination papers. It is important to work through the suggested solutions in conjunction with the May/June 2014 examination paper and your own attempt at the answers.

Kind regards,

	Telephone number	Room number	E-mail
JM Verster (Mrs)	012 429 4767	1-50	MAC2601-14-S2@unisa.ac.za
M Ramaleba (Mr)	012 429 4334	1-47	
BM Ramokhele (Mr)	012 429 4624	1-61	
N Dumalisile (Mrs)	012 429 4437	1-35	

LECTURERS: MAC2601

2. WORKINGS AND NOTES

QUESTION 1

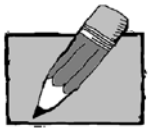
Number	Correct alternative		Workings and notes
1.1	c)	R80 750	1.1
1.2	d)	R59 500	1.2
1.3	b)	R162 350	1.3
1.4	c)	Theory	1.4
1.5	b)	Theory	1.5
1.6	b)	R180 000	1.6
1.7	a)	13.33%	1.7
1.8	c)	Loss of R5 000	1.8
1.9	d)	Unfavourable variance of R1 500	1.9
1.10	c)	Favourable variance of R1 500	1.10

Workings

1.1 The value of closing inventory end of 2013 – Absorption costing system:

Unit cost = Variable production cost per unit + Fixed production cost per unit
= (R25 + R10) + (R25 000/2 000)
= R35 + R12,50
= R47,50

Total value = Unit cost x total number of units in closing inventory
= R47,50 x (1 500 + 2 000 – 1 800)
= R47,50 x 1 700
= R80 750 (Option c))



Note:
Remember that for **Financial Accounting purposes or IFRS, the absorption costing method is prescribed**. If a question requires you to value inventory for Financial Accounting or IFRS purposes, always use the absorption costing method.

The direct costing method is used for decision making purposes.

The question did not specify whether the FIFO or the weighted average method should be used and no information was provided for 2012. It should therefore be assumed that the absorption cost per unit for 2012 was the same as in 2013. This would lead to the same closing inventory values at the end of the 2013 financial year for both the FIFO and the weighted average methods.

1.2 The value of closing inventory end of 2013 – Direct costing system:

Unit cost = Variable production cost per unit
= R25 + R10
= R35

Total value = Unit cost x total number of units in closing inventory
= R35 x 1 700
= R59 500 (Option d))

1.3 Net profit before tax – Direct Costing (FIFO) – 2014

	R
Sales (2 500 x R135)	337 500
Less: Variable costs	107 650
Opening inventory (1 700 x R35)	59 500
Variable manufacturing cost (3 000 x R43①)	129 000
Cost of goods available for sale	188 500
Less: Closing inventory (2 200 x R43)	94 600
Variable manufacturing cost of sales	93 900
Variable selling and administrative cost (2 500 x R5,50)	13 750
Contribution	229 850
Less: Fixed cost	67 500
Manufacturing	39 000
Selling and administrative	28 500
Net profit before tax	**162 350**
	(Option b))

① 28 + 15 = 43

1.4 Product cost in an absorption costing system is the variable plus fixed costs incurred in the manufacturing of a product. When the absorption costing method is used, budgeted fixed manufacturing costs are recovered on the basis of budgeted number of units manufactured during the period or budgeted total production hours. Statements (ii) and (iv) are correct.
(Option c))

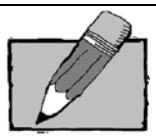
1.5 Administrative costs are the costs incurred in directing and controlling the business and conversion costs are the costs incurred when converting raw material into finished products. Fixed costs remain constant in total regardless of changes in the level of activity. The high-low method is suitable for all types of companies, therefore statement (iii) is incorrect. Statements (ii) and (iv) are the only correct statements. **(Option b))**

1.6 Breakeven sales value:

Per unit data	**R**
Selling price	15,00
Less: Variable cost	12,50
Direct material	7,50
Direct labour	5,00
Contribution	2,50

Breakeven units = Fixed cost/Contribution per unit
= R30 000/R2,50 = 12 000 units

Breakeven sales value = 12 000 x R15 = **R180 000 (Option b))**



Note:
You can also use the formula Breakeven value = Fixed cost/Contribution ratio to get to the answer (unrounded contribution ratio of 0,1666...).

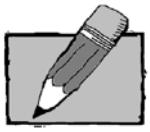
1.7 Required percentage increase on sales:

Per unit data (Including levy of R2)	**R**
Selling price	15,00
Less: Variable cost	14,50
Direct material	7,50
Levy	2,00
Direct labour	5,00
Contribution	0,50

	R
Required contribution	2,50
Contribution after the levy	0,50
Difference	2,00

In order to get a contribution of R2,50 per unit the company needs to increase the selling price by R2,00.

The percentage increase is R2/R15 x 100% = **13,33% (Option a))**



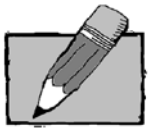
Note:
In order for Boom Ltd to achieve the same monthly profit of R12 000, they must earn a contribution of R2,50 per unit. If everything related to variable costs per unit, fixed costs in total and number of units produced and sold remains unchanged, except for the additional levy of R2, then the selling price will have to increase by R2 in order to sustain a contribution of R2,50 per unit. Boom Ltd will recover the levy of R2 from the customers.

1.8 Budgeted profit/(loss) from 4 000 units

	R
Sales (R240 000/12 000 x 4 000)	80 000,00
Less: Cost of sales (R180 000/12 000 x 4 000)	60 000,00
Less: Fixed cost	25 000,00
Net profit/(loss)	**(5 000,00)**
	(Option c))

1.9 Sales variance

Sales variance = Actual sales – Sales per flexible budget
= R98 500 - 5 000 units x R240 000/12 000
= R98 500 - 5 000 units x R20
= R98 500 - R100 000
= R1 500 unfavourable **(Option d))**



Note:
The above sales variance will be calculated in the same way as a selling price variance will be calculated in MAC2601 when a standard costing system is used, as the actual sales and the sales per flexible budget in this question will only differ due to a difference in the selling price used. Both actual sales and the sales per flexible budget were based on 5 000 actual sales units.

1.10 Profit variance

	Actual results	Flexed budget
No. of units	**5 000**	**5 000**
Sales	**98 500**	**100 000**
(Given)	98 500	
(R240 000/12000 x 5 000)		100 000
Less: Cost of sales	**69 500**	**75 000**
(Given)	69 500	
(R180 000/12 000 x 5 000)		75 000
Less: Fixed cost	**27 500**	**25 000**
Net Profit/(loss)	**1 500**	**-**

Profit variance = R1 500 – 0
= R1 500 favourable **(Option c))**

QUESTION 2

a) Material purchase price variance: Zall Hillen

Actual quantity @ actual price (5 000 x 15kg x R18)	R 1 350 000
Actual quantity @ standard price (5 000 x 15kg x R15)	R 1 125 000
Unfavourable variance	**R 225 000**

b) Material purchase price variance: Patriotic Lille

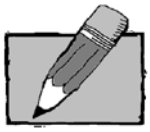
Actual quantity @ actual price (5 000 x 10kg x R14,50)	R 725 000
Actual quantity @ standard price (5 000 x 10kg x R12)	R 600 000
Unfavourable variance	**R 125 000**

c) Selling price variance

Actual revenue (5 000 x R1 750)	R 8 750 000
Actual units at standard price (5 000 x R1 500)	R 7 500 000
Favourable variance	**R 1 250 000**

d) Variable selling costs variance

All students who attempted this question were given the marks because there was missing information and the question did not specify that it required calculation of the variable selling cost RATE variance. We need the budgeted number of units manufactured and sold to calculate this.



Note: The formula for calculating the variable selling cost rate variance **requires the actual quantity (number of units) sold, the actual rate and the standard rate** (SG2 pg. 89).

e)

(i) True
(ii) False

QUESTION 3

a) High-low method

Variable cost per unit = $\frac{\text{R160 000 – R100 000}}{\text{40 000 – 10 000}}$
= R60 000/30 000
= R2,00

At the highest activity level

Fixed costs = R160 000 - (40 000 x R2)
= R160 000 - R80 000
= R80 000

OR at the lowest activity level

Fixed costs = R100 000 - (10 000 x R2)
= R100 000 - R20 000
= R80 000

b) Total cost if 35 000 units are manufactured

y = a + bx
= R80 000 + (R2 x 35 000)
= R80 000 + R70 000
= R150 000

c) Linear equation

y = R80 000 + R2x

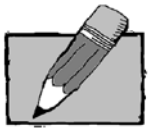
QUESTION 4

PART A:

Number of units with highest chance of occurring = 60 000
(Highest % chance of occurring = 30%)

Contribution per unit with highest chance of occurring = R7.50
(Highest % chance of occurring = 35%)

Most probable contribution = 60 000 x R7,50
= R450 000



Note:
The most probable contribution is the one that is most likely to occur (SG2 pg 222). It must have the highest probability to occur.

PART B:

Option	Description	Calculation	Amount
1	**Do not increase fees**		**R 100 000,00**
2	**Increase fees by 20%**	**(R100 000 x 80%) x 120%**	**R 96 000,00**
3	**Appointing two full-time employees**	**Expected value = 94 000 + 18 000**	**R 112 000,00**
	Increase capacity - 80%	((R100 000 x 150% x 85%) - (R10 000)) x 80%	R 94 000,00
	Capacity does not increase	(R100 000 - R10 000) x 20%	R 18 000,00

The most beneficial option is to appoint two full-time employees to assist.

QUESTION 5

(a) Budgeted statement of profit or loss and other comprehensive income for the year ended 31 March 2014

(i) FIFO: Direct costing

	R
Sales (7 000 x R395)	2 765 000
Less: Variable cost	1 610 000
Opening inventory (①3 500 x ②R215)	752 500
Variable manufacturing cost (8 000 x ③R225)	1 800 000
Cost of goods available for sale	2 552 500
Less: Closing inventory (④4 500 x R225)	1 012 500
Variable manufacturing cost of sales	1 540 000
Variable selling and administrative cost (7 000 x R10)	70 000
Contribution	1 155 000
Less: Fixed cost	545 000
Manufacturing	470 000
Selling and administrative (R45 000 + R30 000)	75 000
Net profit before tax	**610 000**

Workings:

① Opening inventory units = 1 500 + 7 000 – 5 000
= 3 500

② R120 + R40 + R55 = R215

③ R125 + R30 + R70 = R225

④ 3 500 + 8 000 - 7 000 = 4 500

(ii) FIFO: Absorption costing

	R
Sales (as in (a)(i) above)	2 765 000
Less: Manufacturing cost of sales	2 170 630
Opening inventory(3 500 x ①R336,43)	1 177 505
Manufacturing cost:	
Variable manufacturing cost (as in (a)(i) above)	1 800 000
Fixed	470 000
Cost of goods available for sale	3 447 505
Less: Closing inventory (4 500 x ②R283,75)	1 276 875
Gross profit	594 370
Less: Selling and administrative cost	145 000
Variable (as in (a)(i) above)	70 000
Fixed (as in (a)(i) above)	75 000
Net profit before tax	**449 370**

Workings:

① Opening inventory cost per unit = variable cost per unit + fixed cost per unit
= R215 + R850 000/7 000
= R215 + R121,43
= R336,43

② Closing inventory cost per unit = variable cost per unit + fixed cost per unit
= R225 + R470 000/8 000
= R225 + R58,75 = R283,75

(b) Reconciliation of profit before tax

	R
Profit before tax according to:	
Direct costing method	610 000
Absorption costing method	449 370
Difference to be reconciled	160 630
Opening inventory according to:	
Direct costing method	752 500
Absorption costing method	1 177 505
Difference	425 005
Closing inventory according to:	
Direct costing method	1 012 500

Absorption costing method	1 276 875
Difference	264 375

Reconciliation in rand value:

Opening inventory difference	425 005
Closing inventory difference	264 375
Difference in profits	160 630

Reconciliation in units:

Fixed costs in opening inventory (R121,43 x 3 500)	425 005
Fixed cost in closing inventory (4 500 x R58,75)	264 375
Difference	160 630

(c)

(i) True
(ii) False

QUESTION 6

1. Quantity statement - Dogtail (Pty) Ltd

Physical units			Equivalent units			
Input		Output	Raw materials		Conversion	
(units)	Details	(units)	Units	%	Units	%
	Input					
250 000	Opening WIP					
550 000	Put into production					
	Output					
	Completed from:					
	- Opening WIP	③ 225 000		- 0	90 000	40
	- Current production	② 225 000	225 000	100	225 000	100
	Completed and transferred	450 000	225 000		315 000	
	Normal loss	① 80 000	80 000	100	60 000	75
	Abnormal loss	② 120 000	120 000	100	90 000	75
	Closing WIP	150 000	150 000	100	127 500	85
800 000		800 000	575 000		592 500	

Workings:

① 800 000 x 10% = 80 000
② Balancing figure
③ 250 000 x 90% = 225 000

2. Production cost statement

	Total	Material	Conversion cost
	R	R	R
Opening WIP	①6 250 000		
Current production	75 000 000	30 000 000	45 000 000
Total	81 250 000		
Equivalent units		575 000	592 500
Equivalent cost per unit	**128,12**	**52,17**	**75,95**

Workings:

① Opening WIP = Material + Labour + Overheads
= R2 500 000 + R2 250 000 + R1 500 000
= R6 250 000

3. Normal Loss:

NLR = NLM + NLC
= (80 000 x R52,17) + (60 000 x R75,95)
= R4 173 600 + R4 557 000
= R8 730 600

4. Abnormal loss:

Abnormal Loss in Rands = AL Material + AL Conversion
= (120 000 x R52,17) + (90 000 x R75,95)
= R6 260 400 + R6 835 500
= R13 095 900

QUESTION 7

a) Overhead allocation:

(i) Activity Based Costing (ABC)

	Clocks	Watches	Total
	R	R	R
Production set-up cost:			
(R2 500① x 18)	45 000		
(R2 500① x 12)		30 000	
			75 000
Material handling:			
(R245① x 25)	6 125		
(R245① x 35)		8 575	
			14 700
Packaging and shipping			
(R12① x 1 000)	12 000		
(R12① x 1 500)		18 000	
			30 000
Total cost	**63 125**	**56 575**	**119 700**

Workings:

①	Activity level		Total cost driver volume	Cost	Activity rate
	Clocks	**Watches**			
Number of set-ups	18	12	30	75 000	R2 500 per set-up
Number of parts	25	35	60	14 700	R245 per part
Number of units shipped	1 000	1 500	2 500	30 000	R12 per unit shipped

(ii) Traditional method – Direct labour hours

Total Labour hours = 15 620②

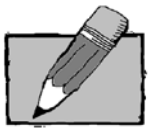
Total overheads = R119 700 (Given)

Rate = R119 700/15 620
= R7,66 per direct labour hour (rounded)

Clock overheads = R7,66 x 10 420 hours ①
= R79 817,20

Watches overheads = R7,66 x 5 200 hours ①
= R39 832,00

②	Labour hours		
	Clocks	**Watches**	**Total**
Production set-up	10 000	5 000	**15 000**
Material handling	300	120	**420**
Packaging and shipping	120	80	**200**
Total	**10 420**	**5 200**	**15 620**



Note:
If you did not round off the predetermined overhead rate, your answers should have been R79 851,09 for clock overheads and R39 848,91 for the watches' overheads.