

**QUESTION 1****[20]****QUESTION 1 – PROCESS COSTING**

(a) Quantity statement

Input	Details	Output	Equivalent production					
			Material		Labour		Overheads	
Units		Units	Units	%	Units	%	Units	%
20 000	Work-in-process (1/1)							
36 000	Put into production							
	Completed from:							
	Opening stock	19 000	-	-	13 300	70	13 300	70
	Current production	13 000 <sup>②</sup>	13 000	100	13 000	100	13 000	100
	Completed transferred and	32 000	13 000		26 300		26 300	
	Spoilage:							
	Normal	2 050	2 050	100	1 230	60	1 230	60
	Abnormal	6 950	6 950	100	4 170	60	4 170	60
	Work-in-process (31/12)	15 000	15 000	100	6 750	45	6 750	45
56 000		56 000	37 000		38 450		38 450	

**Notes:**

①  $20\,000 - (20\,000 \times 5\%) = 19\,000$

② Balancing figure

③  $(56\,000 - 15\,000) \times 5\% = 2\,050$

(b) Production cost statement

	<b>Costs for 2011</b>	<b>Equivalent production</b>	<b>Costs per unit</b>
	R	Units	R
Material	59 000	37 000	1,59
Conversion costs	102 000	38 450	2,65
			<hr/>
			4,24
			<hr/> <hr/>
Work in process on 1 January 2011 (45 300 + 68 200 + 32 000)	145 500		
Total cost to allocate	<hr/> 306 500 <hr/>		

(c) Cost allocation statement

(i) Calculation and allocation of cost of normal loss

	<b>R</b>
$3\,260 (2\,050 \times 1,59) + 3\,260 (1\,230 \times 2,65)$	6 520

This normal loss of R6 520 is allocated as follows:

	<b>Units</b>	<b>Ratio</b>	<b>Rand amount allocated</b>
Units completed and transferred	32 000 (calc. (a))	32 000/38 950  (multiplied by the total cost of normal loss of R6 520)	5 357
Abnormal loss	6 950 (calc. (a))	6 950/38 950 (multiplied by the total cost of normal loss of R6 520)	1 163
Total	<hr/> 38 950 <hr/>		<hr/> 6 520 <hr/>

(ii) Statement

Work-in-process 1 January 2010	145 500
Material (given)	45 300
Conversion costs (68 200 + 32 000)	100 200
Current production	95 722
Material (13 000 x 1,59)	20 670
Conversion costs (26 300 x 2,65)	69 695
Cost of normal loss allocated (from calc. (b)(i) above)	5 357
Cost of production transferred	<u>241 222</u>
Abnormal loss	23 265
Material (6 950 x 1,59)	11 051
Conversion costs (4 170 x 2,65)	11 051
Cost of normal loss allocated (from calc. (b)(i) above)	1 163
Work-in-process 31 January 2010	41 738
Material (15 000 X 1,59)	23 850
Conversion costs (6 750 X 2,65)	17 888
Total costs allocated	<u>306 225</u>
Rounding difference	275
Total costs to be allocated as per production cost statement (calc. (b))	<u><u>306 500</u></u>

**QUESTION 2****[20]****(a) Budgeted income statement for the year ended 31 December 2011  
(Absorption costing method; weighted average method of stock valuation)**

	R	
Sales (7 000 units x R60)	420 000	
<u>Less: Cost of Sales</u>	(202 054)	
Opening stock	25 000 <sup>1</sup>	see below
Variable manufacturing costs (6 400 units x R24)	153 600	
Fixed manufacturing costs	35 000	
	213 600	
<u>Less: Closing stock</u>	(11 546) <sup>2</sup>	see below
Gross profit	217 946	
<u>Less: Selling and administrative costs</u>	(90 000)	
Variable (7000 units x R10)	70 000	
Fixed	20 000	
Net profit	<u>127 946</u>	

**Notes:**<sup>1</sup> Manufacturing cost 2010:

Variable (6 000 units x R20)	R120 000
Fixed	<u>R30 000</u>
	R150 000

Opening stock units 2011:

Completed uniforms at beginning of the year 2010	Nil
Manufactured 2010	6 000
<u>Less: Sales 2010</u>	<u>(5 000)</u>
	1 000

Opening stock 2011:  $150\,000 / 6\,000 \times 1000 = 25\,000$

<sup>2</sup> Closing stock 2011:  $213\,600 / 7\,400 \times (1000 + 6400 - 7000) = 11\,546$

**(b) Budgeted income statement for the year ended 31 December 2011  
(Direct costing method; FIFO method of stock valuation)**

	<b>R</b>
Sales (7 000 units x R60)	420 000
<u>Less: Cost of Sales</u>	<u>(234 000)</u>
Opening stock (1000 x R20)	20 000
Variable manufacturing costs (6 400 units x R24)	153 600
<u>Less: Closing stock (400 units X R24)</u>	<u>(9 600)</u>
	164 000
<u>Add: Variable selling and administrative cost (7000 units x R10)</u>	<u>70 000</u>
Marginal income	186 000
<u>Less: Fixed costs</u>	<u>(55 000)</u>
Manufacturing cost	35 000
Selling and administrative cost	20 000
Net profit	<u><u>131 000</u></u>

[8]

- (c) (i) TRUE [1]  
(c) (ii) FALSE [1]

**QUESTION 3**

**[20]**

**STANDARD COSTING: ALFA ROMEO**

**Solution**

**a) Total variance Direct Material plastic**

Standard cost for 21 Cars (21 x R28,800)	604,800.00		
Actual cost (given)	618,450.00		
<b>Total variance</b>	<b>13,650.00</b>	<b>Unfavourable</b>	<b>1</b>

**b) Material (Plastic) quantity variance:**

Actual quantity at Actual price	618,450.00	Actual quantity at Standard price 310kg x R90 x 21 Cars	585,900.00	
		Variance	32,550.00	Unfavourable
Total variance			13,650.00	Unfavourable
Purchase price variance			32,550.00	Unfavourable
<b>Quantity variance:</b>			<b>18,900.00</b>	<b>Favourable</b>

1

or

Actual quantity at standard price	585,900.00	Standard quantity at Standard price 320kg x R90 x 21 Cars	604,800.00	
		Variance	(18,900.00)	Favourable

**c) Material (Metal) purchase price variance:**

Actual quantity at Actual price	3,719,100.00	Actual quantity at Standard price 1,150kg x R158 x 21 Cars	3,815,700.00	
		Variance	(96,600.00)	Favourable

2½

**d) Calculate the material quantity (Metal) variance**

Actual quantity at standard price 1,150kg x R158 x 21 cars 3,815,700.00	Standard quantity at Standard price 1,100kg x R158 x 21 Cars 3,649,800.00
<hr/>	
<b>Variance</b>	<b>165,900.00 Unfavourable</b>

2½

**e) Labour rate variance**

Actual hours at Actual rate 2,770,950.00	Actual hours at standard rate 910 hours x R149 x 21 cars 2,847,390.00
<hr/>	
<b>Variance</b>	<b>(76,440.00) Favourable</b>

2½

**f) Labour efficiency variance**

Actual hours at Standard rate 910 hours x R149 x 21 cars 2,847,390.00	Standard hours at standard rate 900 hours x R149 x 21 cars 2,816,100.00
<hr/>	
<b>Variance</b>	<b>31,290.00 Unfavourable</b>

2½

**g) Calculate the variable overhead spending variance in respect of overheads varying with hours worked**

Actual hours at Actual rate 1,146,600.00	Actual hours at Standard rate 910 hours x R62 x 21 cars 1,184,820.00
<hr/>	
<b>Variance</b>	<b>(38,220.00) Favourable</b>

2½





**QUESTION 4**  
**PART A**

[40]  
[15]

(a)	Cornia	Kiekie	Fafa	
Input in kg	12,000	12,000	12,000	
Three kg	4,000	4,000	4,000	
Delivers	20,000	16,000	12,000	[7½]
<b>(b) Sales value at split-off point</b>	2.50	9.50	1.75	
After further processing	15.75	25.20	5.25	
Incremental income	13.25	15.70	3.50	
Total income	265,000	251,200	42,000	
Further processing costs	242,500	264,160	41,500	
Profit/(loss)	<u>22 500</u>	<u>(12 960)</u>	<u>500</u>	
Further processed	Yes	No	Yes	[7½]

**Alternative to (b)**

Cornia split-off:  $20,000 \times R2,50 = R50,000$

Cornia further processing:  $(20,000 \times R15,75) - R242,500 = R72,500$

Thus: More profitable to sell after further processing, Yes

Kiekie split-off:  $16,000 \times R9,50 = R152,000$

Kiekie further processing:  $(16,000 \times R25,20) - R264,160 = R139,040$

Thus: More profitable to sell after split-off point, No

Fafa split-off:  $12,000 \times R1,75 = R21,000$

Fafa further processing:  $(12,000 \times R5,25) - R41,500 = R21,500$

Thus: More profitable to sell after further processing, Yes

**QUESTION 4 (continued)**

**PART B**

[15]

**(a) Marginal income per trip**

$$\begin{aligned} &= \text{Sales} - \text{variable cost} \\ &= R200 - (R50 \times 1.1) \\ &= R200 - R55 \\ &= R145 \text{ per trip} \end{aligned}$$

[2]

**(b) Trips per week in order to make an after-tax profit of R36 000**

$$\begin{aligned} \text{Trips sold for target profit} &= \frac{\text{Fixed cost} + \text{target pre-tax profit}}{\text{Marginal income per trip}} \\ &= \frac{(R200\,000 \times 1.2) + (36\,000 / 0.72)}{R145 \text{ (answer in (a))}} \\ &= \frac{R240\,000 + R50\,000}{R145} \\ &= 2000 \text{ trips per year} \\ &= 40 \text{ trips per week} \end{aligned}$$

[5]

**(c) Pre-tax profit if sales volume is 25% more than break-even volume for 2011**

$$\begin{aligned} \text{Break-even volume for 2011} &= \frac{\text{Total fixed cost}}{\text{Marginal income per unit}} \\ &= \frac{(R200\,000 \times 1.2)}{R145 \text{ (answer in (a))}} \\ &= 1\,656 \text{ trips (rounded-up in order to break-even)} \end{aligned}$$

Pre-tax profit if sales volume changes:

Sales (1 656 trips X 1,25 ) x R200	R
<u>Less: Variable cost (2 070 trips x R55)</u>	414 000
	113 850
	<hr/>
	300 150
<u>Less: Fixed costs</u>	240 000
	<hr/>
	60 150

[5]

**(d) Margin of safety ratio**

$$= \frac{\text{Sales quantity} - \text{Break-even quantity}}{\text{Sales quantity}} \times \frac{100}{1}$$

$$= \frac{1\,800 - 1\,656}{1\,800} \times \frac{100}{1}$$

$$= 8\%$$

[2]

**(e) True/False**

$$= \text{TRUE}$$

[1]

**QUESTION 4 (continued)****PART C****[10]****(a) Primary and secondary allocation of overheads**

<b>Overhead</b>	<b>Basis</b>	<b>Production</b>		<b>Service</b>		<b>Total</b>
		<b>Ndou</b>	<b>Ndau</b>	<b>Phala</b>	<b>Tholo</b>	
		<b>R</b>	<b>R</b>	<b>R</b>	<b>R</b>	<b>R</b>
Insurance	Floor area	9 375	8 125	4 375	3 125	25 000
Salaries	Direct	-	-	-	100 000	100 000
Canteen	No. of employees	3 000	2 400	1 500	600	7 500
<b>Primary allocation</b>		12 375	10 525	5 875	103 725	132 500
Allocation of Tholo costs		45 098	36 078	22 549	(103 725)	
		57 473	46 603	28 424	-	
Allocation of Phala costs		17 054	11 370	(28 424)		
<b>Secondary allocation</b>		74 527	57 973	-	-	