QUESTION 1 [20]

QUESTION 1 – PROCESS COSTING

(a) Quantity statement

			Equivalent production					
Input	**Details**	**Output**	**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 000②	13 000	100	13 000	100	13 000	100
	Completed and transferred	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 x 5%) = 19 000

② Balancing figure

③ (56 000 – 15 000) x 5% = 2 050

(b) Production cost statement

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

(c) Cost allocation statement

(i) Calculation and allocation of cost of normal loss

	R
3 260 (2 050 x 1,59) + 3 260 (1 230 x 2,65)	6 520

This normal loss of R6 520 is allocated as follows:

	Units	**Ratio**	**Rand amount allocated**
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	38 950		6 520

(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	241 222
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	306 225
Rounding difference	275
Total costs to be allocated as per production cost statement (calc. (b))	306 500

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

Notes:

[1] Manufacturing cost 2010:

Variable (6 000 units x R20)	R120 000
Fixed	R30 000
	R150 000

Opening stock units 2011:

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

Opening stock 2011: 150 000/6 000 x 1000 = 25 000

[2] Closing stock 2011: 213 600 /7 400 x (1000 + 6400 – 7000) = 11 546

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

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

[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		
Total variance	13,650.00	Unfavourable	1

b) Material (Plastic) quantity variance:

Actual quantity at Actual price		Actual quantity at Standard price 310kg x R90 x 21 Cars
618,450.00		585,900.00
Variance	32,550.00	Unfavourable

Total variance		13,650.00	Unfavourable
Purchase price variance		32,550.00	Unfavourable
Quantity variance:		18,900.00	Favourable 1

or

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

c) Material (Metal) purchase price variance:

Actual quantity at Actual price		Actual quantity at Standard price 1,150kg x R158 x 21 Cars
3,719,100.00		3,815,700.00
Variance	(96,600.00)	Favourable 2½

d) Calculate the material quantity (Metal) variance

Actual quantity at standard price		Standard quantity at Standard price	
1,150kg x R158 x 21 cars		1,100kg x R158 x 21 Cars	
3,815,700.00		3,649,800.00	
Variance	165,900.00	Unfavourable	2½

e) Labour rate variance

Actual hours at Actual rate		Actual hours at standard rate 910 hours x R149 x 21 cars	
2,770,950.00		2,847,390.00	
Variance	(76,440.00)	Favourable	2½

f) Labour efficiency variance

Actual hours at Standard rate 910 hours x R149 x 21 cars		Standard hours at standard rate 900 hours x R149 x 21 cars	
2,847,390.00		2,816,100.00	
Variance	31,290.00	Unfavourable	2½

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

Actual hours at Actual rate		Actual hours at Standard rate 910 hours x R62 x 21 cars	
1,146,600.00		1,184,820.00	
Variance	(38,220.00)	Favourable	2½

h) Calculate the variable overhead efficiency variance in respect of overheads varying with hours worked

Actual hours at Standard rate			Standard hours at standard rate	
910 hours x R62 x 21 cars			900 hours x R62 x 21 cars	
1,184,820.00			1,171,800.00	
Variance	13,020.00	Unfavourable		2½

i) Calculate the sales price variance

Actual quantity at Actual rate			Actual quantity at Standard rate	
			21 cars x 520,375	
10 717 938			10 927 875	
Variance	209,937.00	Unfavourable		1½

j) Calculate the variable selling and administrative overhead spending variance

Actual quantity at Actual rate			Actual quantity at Standard rate	
			21 cars x R23,800	
532,350.00			499,800.00	
Variance	32,550.00	Unfavourable		1½

QUESTION 4 **[40]**

PART A **[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)	**Sales value at split-off point**	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)	22 500	(12 960)	500	
	Further processed	Yes	No	Yes	[7½]

Alternative to (b)

Cornia split-off: 20,000 x R2,50 = R50,000

Cornia further processing: (20,000 x R15,75) – R242,500 = R72,500

Thus: More profitable to sell after further processing, Yes

Kiekie split-off: 16,000 x R9,50 = R152,000

Kiekie further processing: (16,000 x R25,20) – R264,160 = R139,040

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

Fafa split-off: 12,000 x R1,75 = R21,000

Fafa further processing: (12,000 x 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

= Sales – variable cost
= R200 – (R50 x 1.1)
= R200 – R55
= R145 per trip [2]

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

Trips sold for target profit = $\frac{\text{Fixed cost + target pre-tax profit}}{\text{Marginal income per trip}}$

= $\frac{\text{(R200 000 x 1.2) + (36 000 / 0.72)}}{\text{R145 (answer in (a))}}$

= $\frac{\text{R240 000 + R50 000}}{\text{R145}}$

= 2000 trips per year

= 40 trips per week [5]

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

Break-even volume for 2011 = $\frac{\text{Total fixed cost}}{\text{Marginal income per unit}}$

= $\frac{\text{(R200 000 x 1.2)}}{\text{R145 (answer in (a))}}$

= 1 656 trips (rounded-up in order to break-even)

Pre-tax profit if sales volume changes:

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

[5]

(d) Margin of safety ratio

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

$$= \frac{1\,800 - 1656}{1\,800} \times \frac{100}{1}$$

= 8% [2]

(e) True/False

= TRUE [1]

QUESTION 4 (continued)

PART C **[10]**

(a) Primary and secondary allocation of overheads

		Production		Service		Total
Overhead	**Basis**	**Ndou**	**Ndau**	**Phala**	**Tholo**	
		R	**R**	**R**	**R**	**R**
Insuarance	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
Primary allocation		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)		
Secondary allocation		74 527	57 973	-	-	