

STRICTLY CONFIDENTIAL

THE PUBLIC ACCOUNTANTS EXAMINATION
COUNCIL OF MALAWI

2011 EXAMINATIONS

ACCOUNTING TECHNICIAN PROGRAMME

PAPER TC9: COSTING AND BUDGETARY CONTROL

(JUNE 2011)

TIME ALLOWED : 3 HOURS

SUGGESTED SOLUTIONS

1. Chilumba Rice Milling Company

(a)	<u>Milling</u>	<u>Packing</u>	<u>Maintenance</u>	<u>Stores</u>	
	K	K	K	K	K
Actual costs	65,000	45,000	25,000	20,000	155,000
Maintenance	15,000	7,500	(25,000)	2,500	
Stores	6,750	11,250	4,500	(22,500)	
Maintenance	2,700	1,350	(4,500)	450	
Stores	135	225	90	(450)	
Maintenance	54	27	(90)	9	
Stores	3	5	2	(9)	
Maintenance	<u>1</u>	<u>-</u>	<u>(2)</u>	<u>-</u>	<u>155,000</u>
	<u>89,643</u>	<u>65,357</u>	<u>-</u>	<u>-</u>	

(b) Absorption rates

Milling	90,000/3,000 =	K30 per hour
Packing	75,000/5,000 =	K15 per hour

	<u>Milling</u>	<u>Packing</u>
Overhead absorbed (2,900x30)	K87,000	(5,200x15) K78,000
Overhead incurred	<u>K89,643</u>	<u>K65,357</u>
	<u>K2,643</u> Under	<u>K12,643</u> Over

(c) Under/over absorption of overheads is caused by the increase or decrease in (difference between) the actual amount spent compared with the budgeted amount, and an increase or decrease in (difference between) the actual production hours compared with the budgeted hours.

(d)	<u>Milling</u>	<u>Packing</u>
Budgeted overhead	90,000	75,000
Actual overhead	<u>89,643</u>	<u>65,357</u>
	357 Over	9,643 over
Budgeted hours	3,000	5,000
Actual hours	<u>2,900</u>	<u>5,200</u>
Increase(decrease)	(100)	200
	<u>xK30</u>	<u>xK15</u>
	<u>K3,000</u> Under	<u>K3,000</u>
Total (K3,000-K357)	K2,643	under (K9,643+K3,000)K12,643

2. (a) (i) Ideal standard – that which can be attained under a perfect operating environment: no wastage, inefficiencies, idle time or breakdowns.
- Can be seen as long term targets and not really useful for day to day control purposes
 - They cannot be achieved.
- (ii) Attainable standard – that which can be achieved if production is carried out efficiently, machines are properly operated and materials are of right quality and properly used. Some allowance is made for wastage and inefficiencies.
- Used for product costing cost control and stock valuation.
- (iii) Current standard – that which is based on prevailing working conditions (current wastage rates, inefficiencies etc).
- provide the best basis for budgeting since they represent what can be achieved.
 - can easily be adjusted in times of inflation.
 - assume that current levels of achievement cannot be improved.
- (iv) Basic standard – long term standard which remains unchanged for a number of years.
- Used to show trends
 - Used to show efficiency of performance over a long period
 - Least useful and least common type in use.

(b) (i)	Material price variance	K
	9,500 litres should have cost (K9,500 x 25)	237,500
	But did cost	<u>247,000</u>
	Variance	<u>9,500 A</u>

(ii)	Material usage variance	Litres
	1,000 units should have used (1,000 x 10)	10,000
	But did use	<u>9,500</u>
	Variance	500 F
	Standard price per litre	<u>xK25</u>
		<u>K12,500 F</u>

(iii)	Labour rate variance	K
	1,900 hours should have cost (K1,900 x 45)	85,500
	But did cost	<u>94,000</u>
	Variance	<u>8,500 A</u>

(iv)	Labour efficiency variance	Hours
	1,000 units should have taken (K1,000 x 2)	2,000
	But did take	<u>1,900</u>
	Variance	100 F
	Standard rate per hour	<u>xK45</u>
		<u>K4,500 F</u>

- (c) (i) More expensive materials might have been purchased giving rise to the adverse price variance. They were easy to work with resulting in low wastage thereby giving rise to favourable usage variance.
- (ii) More skilled labour might have been engaged requiring a higher rate of pay, giving rise to the adverse labour rate variance but due to probably their experience, they worked more efficiently thus saving on time which gave rise to the favourable efficiency variance.

3. (a) Total labour cost = 30 employees x 38 hour per week x 4 weeks x K30 per hour
= K136,800

$$\begin{aligned}\text{Labour cost per unit} &= \text{K}136,800/456 \text{ units} \\ &= \text{K}300/\text{unit}\end{aligned}$$

(b) Operative	Sharon	Steve	Verrah
	K	K	K
Basic pay (157xK30)	4,710	(172xK30) 5,160	(140xK30) 4,200
Overtime (17xK30x50%)	<u>255</u>	(22xK30x50%) <u>330</u>	(20xK30x50%) <u>300</u>
Total	<u>4,965</u>	<u>5,490</u>	<u>4,500</u>

- (c) (i) Basic wages = 4,200 hours x K30/per hour = K126,000
(ii) Bonus

Time allowed (450 units x 10 hours/unit)	4,500 hours
Time taken	<u>4,200</u> hours
Time saved	<u>300</u> hours

$$\begin{aligned}\text{Bonus} &= 300 \text{ hours} \times 50\% \times \text{K}30 \text{ per hour} \\ &= \underline{\text{K}4,500}\end{aligned}$$

- (iii) A bonus scheme is usually introduced to encourage increased production but it is also possible that in attempting to produce goods more quickly, carelessness can occur resulting in an increase in faulty products being produced. The company may have to introduce additional inspection to combat these problems.

4. (a) (i) Equivalent units are the equivalent whole units of product produced during a period. The opening and closing work in progress has to be adjusted to take account of the differing degrees of completion for the various elements. For example; 100 units 50% complete are the equivalent of 50 equivalent whole units.
- (ii) Joint products are two or more products which are output from the same processing operation but are indistinguishable from each other up to their point of separation. They have a substantial sales value.
- (iii) By-products are supplementary products arising as a result of a process. They have a relatively low sales value in comparison to the main product.

- (b) (i) Cost per unit (CPU)

	Units	WIP units	% comp.	WIP EU	Total EU	Total K	CPU K
Material	400	100	100	100	500	10,250	20.50
Labour	400	100	40	40	440	33,000	75.00
Overhead	400	100	40	40	440	<u>18,040</u>	<u>41.00</u>
Total						<u>61,290</u>	<u>136.50</u>

- (ii) Transferred to Process 2 400 x K136.5 K54,600

(iii) Closing WIP:

	Materials	Labour	Overheads	Total K
	100 x K20.50	40 x K75.00	40 x K41.00	2,050
				3,000
				<u>1,640</u>
				<u>6,690</u>

- (c) (i) Process 1 Account

	Units	K		Units	K
Direct materials	500	10,250	Transferred to Process 2	400	54,600
Direct labour		33,000	Closing WIP	100	6,690
Production overhead		<u>18,040</u>			
	<u>500</u>	<u>61,290</u>		<u>500</u>	<u>61,290</u>

- (ii) Process 2 Account

	Units	K		Units	K
Transferred from Process 1	400	54,600	Transferred fin goods	350	87,500*
Direct materials		11,300	Scrap proceeds	50	800**
Direct labour		14,280			
Production overhead		<u>8,120</u>			
	<u>400</u>	<u>88,300</u>		<u>400</u>	<u>88,300</u>

*As there is no closing work in progress in process 2, all costs incurred, less the value of proceeds from the sale of scrap, must relate entirely to the finished stock.

**Value of scrap = K16 x 50 = K800

5. (a) Identify and define activities and activity pools.
 Identify appropriate cost drivers.
 Directly trace costs to activities and cost centres.
 Assign costs to cost pools.
 Calculate activity rates.
 Assign costs to cost objects using activity rates and measures.
- (b) It is easier to identify costs with the activities which cause them.
 Cost drivers perform two functions; acting as a cost measure and acting as a performance measure.
- Highlights unprofitable products thus providing management with the option of either improving the profitability or removing the product from the range being produced.

- (c) Labour hour overhead absorption rate = $\frac{\text{K}54,310}{14,360 \text{ hrs}} = \text{K}3.78/\text{hr}$

	X K	Y K	Z K
Direct Costs (materials & labour)	54,880	24,220	49,000
Overhead (K3.78 x 6,520)	<u>24,646</u>	<u>8,921</u>	<u>20,714</u>
Total costs	79,526	33,141	69,714
Unit Cost (79,526/1,320)	60.25	K43.04	59.08

(d)

		X K	Y K	Z K
Set-up (9,890/45)	219.78	(15x219.78) 3,297	(10x219.78) 2,198	(20x219.78) 4,396
Processing (20,060/1,700)	11.80	(630x11.80) 7,434	(310x11.80) 3,658	(760x11.80) 8,968
Purchasing & Inv (12,840/105)	122.29	(30x122.29) 3,669	(25x122.29) 3,057	(50x122.29) 6,115
Maintenance (11,520/190)	60.63	(80x60.63) <u>4,850</u>	(50x60.63) <u>3,032</u>	(60x60.63) <u>3,638</u>
		19,250	11,945	23,117
Direct costs		<u>54,880</u>	<u>24,220</u>	<u>49,000</u>
		74,130	36,165	72,117
Unit Cost	(74,130/1.320)	56.16	(36,165/770) 46.97	(72,117/1,180) 61.12

6. (a)

	X	Y	Z
Cost	K	K	K
Material	16	18	24
Labour Dept 1	18	24	24
Labour Dept 2	36	24	24
Labour Dept 3	25	10	15
Variable overhead	<u>15</u>	<u>14</u>	<u>13</u>
	110	90	100
Sales Price	<u>140</u>	<u>150</u>	<u>160</u>
Contribution	30	60	60
Sales (units)	10,000	5,000	6,000
Total contribution	300,000	300,000	360,000
			<u>960,000</u>
Fixed Cost			<u>500,000</u>
Profit			<u>460,000</u>

(b) Limiting factor is Labour in Department I
Therefore:

	X	Y	Z
Contribution	30	60	60
Hours per unit	3	4	4
Contribution per hour	10	15	15

Ranking	3	1	1
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Hours available in Department 1	X: 10,000x3	= 30,000
	Y: 5,000 x 4	= 20,000
	Z: 6,000 x 4	= <u>24,000</u>
		<u>74,000</u>

Units to be produced per product and hours allocated

:	Y: 6000* x 4	= <u>(24,000)</u>
		50,000
	Z: 7,200** x 4	= <u>(28,800)</u>
		21,200
	X: 7,067*** x 3	= <u>(21,200)</u>
		0

*Y = 5,000 x 20% = 6,000 units

**Z = 6,000 x 20% = 7,200 units

***X = 21,200/3 = 7,067 units

Maximum profit	X	Y	Z	TOTAL
Production (Units)	7,067	6,000	7,200	
Contribution per unit (K)	30	60	60	
Total contribution (K)	212,000	360,000	432,000	<u>1,004,000</u>

Fixed Cost (K) 500,000

MAXIMUM PROFIT (K) 504,000

- (c) (i) The company may lose customers who usually purchase X.
- (ii) The company may lose customers who take all three products if sufficient of X cannot be supplied.
- (iii) If X is curtailed there may be redundancies in Departments 2 and 3.
- (iv) There may be under-absorbed overhead in Departments 2 and 3.
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7. (a) (i) (1) An interlocking system keeps separate ledger accounts for the cost accounting function and the financial accounting function.
- (2) An integrated system combines the cost accounting function and the financial accounting function into one system of ledger accounts.
- (ii) (1) Financial accounts and cost accounts are combined in one set of self-balancing ledger accounts.
- There is no need to operate the cost ledger control accounts.
- There is no need to reconcile the respective cost and financial profits.
- (2) Advantage
- There are savings in administration costs as one set of accounts are maintained.
- Disadvantage

One set of accounts is expected to fulfill the need of external reporting and the provision of internal management information which may be difficult.

(b) Similarities

- Both involve forward looking and forecasting.
- Both are used for control purpose (A budget helps with control by setting financial targets or limits in a period. Actuals are compared with budgets and corrective action is taken to correct variances. A standard also achieves control by comparing actual results against pre-determined target).
- Standard unit production cost is an input in formulating production cost budget.

Differences

- A budget gives planned total costs for a function/center, a standard shows the amount of resources that should be used to produce a single unit.
- A standard need not be expressed in monetary terms.
- Differing accounting treatments: budgets are memorandum accounts whereas standards do form part of the double entry accounting standards.
- Standards are limited to situations where repetitive actions are performed and budgets are not.

(c) Advantages

- It is simple to understand and apply.
- It concentrates on the controllable aspects of business by separating fixed and variable costs.
- It is a useful short-term survival technique in a competitive environment or where a recession is being experienced. In such circumstances orders may be accepted as long as there is spare capacity and variable costs are covered. Any contribution will be offset against fixed costs so that losses are kept to a minimum.

Disadvantages

- Marginal costing tends to make use of historical data whilst management decisions relate to the future.

- It is often difficult to classify fixed and variable costs. This is especially so when some costs may be classified as semi-variable whilst fixed costs may have to be stepped.
- It is not good technique in the long run for pricing decisions as it ignores fixed costs. Ultimately management has to consider the total costs and not simply the variable costs.

END

NOT FOR SALE