

STRICTLY CONFIDENTIAL

THE PUBLIC ACCOUNTANTS EXAMINATION
COUNCIL OF MALAWI

2014 EXAMINATIONS

ACCOUNTING TECHNICIAN PROGRAMME

PAPER TC9: COSTING AND BUDGETARY CONTROL

MONDAY 2 JUNE 2014

TIME ALLOWED: 3 HOURS
9.00 AM – 12.00 NOON

SUGGESTED SOLUTIONS

the aggregate level and does not analyse the difference between actual and budgeted expenditure by price and quantity variances.

2. (a) (i) Joint products have relatively high sales value whereas byproducts have a low sales value compared with the sales value of a joint product.
- (ii) Joint products are also crucial to the commercial viability of an organization, hence are intended to be produced whereas by-products are incidental.
- (b) Since the by-product has a commercial value, the income earned from the sale of the by-product can be recognized in different ways: it may be added to the sales from the main product, treated as a separate incidental source of income, deducted from the production cost of sales of the main product or deducting the net realizable value of the by-product from the production cost of the main product.

$$(c) (i) \text{ Selling price per unit} = \frac{\text{sales}}{\text{Kgs sold}} = \frac{525,000}{300,000} = \text{K}1.75$$

Market value of product X at split off point:

| | |
|--------------------------------|----------------|
| | K |
| Sales | 525,000 |
| Closing stock(150,000 x K1.75) | <u>262,500</u> |
| | <u>787,500</u> |

(ii) Joint costs to be apportioned are Process 1 costs
Total notional sales value at split-off point:

| | |
|----------------------------------|--------------------|
| | K |
| Product X | 787,500 (as above) |
| Product Y(K1,507,500 – K280,000) | <u>1,227,500</u> |
| | <u>2,015,000</u> |

| | | | | |
|-----------|------------------|----------------------------------|----------------------------|------------------|
| (iii) | Notional sales | Joint costs apportioned | Post split off costs | Total costs |
| | K | K | K | K |
| Product X | 787,500 | 703,474 ² (W1) | - | 703,474 |
| Product Y | <u>1,227,500</u> | <u>1,096,526²(W2)</u> | <u>280,000¹</u> | <u>1,376,526</u> |
| | <u>2,015,000</u> | <u>1,800,000</u> | <u>280,000</u> | <u>2,080,000</u> |

$$\text{W1: Apportioned costs for X} = \frac{787,500}{2,015,000} \times 1,800,000 = \text{K}703,474$$

$$\text{W2: Apportioned costs for Y} = \frac{1,227,500}{2,015,000} \times 1,800,000 = \text{K}1,096,526$$

3. (a) (i) Fixed costs are a substantial and an increasing proportion of costs in modern industry. Production cannot be achieved without incurring fixed costs which thus form an inescapable part of the cost of production, so should be included in stock valuations. Marginal costing may give the impression that fixed costs are somehow divorced from production.
- (ii) Where production is constant but sales fluctuate, net profit fluctuations are less with absorption costing than with marginal costing.
- (iii) Where stock building is a necessary part of operations, the inclusion of fixed costs in stock valuation is necessary and desirable; otherwise a series of fictitious losses will be shown in earlier periods to be offset eventually by excessive profits when the goods are sold.
- (iv) The calculation of variable cost and the concentration upon contribution may lead to the firm setting prices which are below total cost. Absorption cost makes this less likely because of the automatic inclusion of fixed charges.
- (v) Accounting standard on stock valuation recommends the use of absorption costing for financial accounts because costs and revenues must be matched in the period when the revenue arises not when the costs are incurred. It also recommends that stock valuations must include production overhead incurred in the normal course of business even if such overheads are fixed.

(b) (i) Absorption costing

| | | |
|--------------------------------------|----------------|-----------------|
| | K'000 | K'000 |
| Sales (150,000xK700) | | 105,000 |
| Less: Production costs(170,000xK345) | 58,650 | |
| Closing stock (20,000 x K345) | <u>(6,900)</u> | <u>(51,750)</u> |
| | | 53,290 |
| Add: over absorption (10,000 x K100) | | <u>1,000</u> |
| | | 54,250 |
| Selling and distribution costs: | | |
| Variable (20% of K105,000,000) | 21,000 | |
| Fixed | <u>960</u> | <u>(21,960)</u> |
| Profit | | <u>32,290</u> |

(ii) Marginal costing

| | | | |
|--------------------------------------------|--------------|-------------------------------------|---------------|
| Cost per unit | = | Direct labour | K |
| | | Direct materials | 90 |
| | | Variable production o/h | 140 |
| | | Selling & distribution(20% of K700) | 15 |
| | | | <u>140</u> |
| | | | <u>385</u> |
| | | | |
| | | K'000 | K'000 |
| Sales (150,000 x K700) | | | 105,000 |
| Less marginal costs: | | | |
| Production costs (170,000xK385) | 65,450 | | |
| Closing stock(20,000xK385) | <u>7,700</u> | | <u>57,750</u> |
| Contribution | | | 47,250 |
| Less fixed costs [(160,000xK100)+K960,000] | | | <u>16,960</u> |
| Profit | | | <u>30,290</u> |

(c) Reconciliation statement

| | |
|----------------------------------------------------------------------|---------------|
| | K'000 |
| Marginal costing profit | 30,290 |
| Add: fixed production o/h carried forward in stocks (20,000xK100) | <u>2,000</u> |
| Absorption costing profit | <u>32,290</u> |

4. (a) (i) All costs can be resolved into fixed and variable elements
(ii) Total fixed costs will remain constant and total variable costs will vary proportionately with activity
(iii) Over the relevant range being considered, costs and revenues behave in a linear fashion.
(iv) Technology, production methods and efficiency remain unchanged
(v) The only factor that affects costs and revenues is volume
(vi) There are no stock level changes or stocks are valued at variable costs only.
(vii) Particularly for graphical method, the analysis relates to one product only or a constant product mix

(b) Calculation of total contribution

| | |
|-------------------------------|------------------|
| | (K) |
| Product A (460,000 x K1.80) | = 828,000 |
| Product B (1,000,000 x K0.78) | = 780,000 |
| Product C (380 000 xK1.40) | = <u>532,000</u> |
| | <u>2,140,000</u> |

Calculation of total sales revenue

| | K |
|------------------------------|--------------------|
| Product A (460,000 xK3) | = 1,380,000 |
| Product B (1,000,000 xK2.45) | = 2,450,000 |
| Product C (380,000 xK4) | = <u>1,520,000</u> |
| | <u>5,350,000</u> |

$$\begin{aligned} \text{Break-even point (sales revenue basis)} &= \frac{\text{fixed costs (K1,710,000)} \times \text{total sales (K5,350,000)}}{\text{total contribution (K2,140,000)}} \\ &= \text{K4,275,000} \end{aligned}$$

(c) K2.75 selling price

| | K |
|------------------------------------------------|----------------|
| Total contribution 590,000 x (K2.75 - K1.20) | 914 500 |
| Existing planned contribution (460,000 x 1.8) | <u>828,000</u> |
| Extra contribution | 86,500 |
| Less additional fixed costs | <u>60,000</u> |
| Additional contribution to general fixed costs | <u>26,500</u> |

K2.55 selling price

| | K |
|----------------------------------------------|-----------------|
| Total contribution 650,000 x (K2.55 - K1.20) | 877,500 |
| Existing planned contribution | <u>828,000</u> |
| Extra contribution | 49,500 |
| Less additional fixed costs | <u>60,000</u> |
| Contribution to general fixed costs | <u>(10,500)</u> |

It is worthwhile incurring the expenditure on advertising and sales promotion at a selling price of K2.75.

$$\begin{aligned} \text{(d) Required contribution} &= \text{existing contribution} + \text{additional fixed costs} \\ &= \text{K828,000} + \text{K60,000} \\ &= \text{K888,000} \end{aligned}$$

$$\begin{aligned} \text{The required sales volume (at selling price K2.75)} &= \text{K888,000} / \text{K1.55 contribution per unit} \\ &= 572,903 \text{ units} \end{aligned}$$

5. (a) (i) By ensuring that it can always meet its commitments, the company will maintain a satisfactory credit rating
- (ii) If a cash shortage is forecast, arrangements can be made in advance to overcome the problem
- (iii) Arrangements can be made in advance to invest a forecast cash surplus
- (iv) Advantages can be taken of a cash surplus, e.g. prompt payment to obtain discounts

(b) BECK PLC

CASH BUDGET FOR WEEKS 1-6

| | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 |
|------------------------|---------------|----------------|--------------------|---------------|---------------|---------------|
| | K | K | K | K | K | K |
| Opening cash balance | 1,000 | 700 | (3,500) | 9,100 | 28,100 | 41,100 |
| Cash receipts (W1) | <u>24,000</u> | <u>24,000</u> | <u>28,200</u> | <u>25,800</u> | <u>19,800</u> | <u>5,400</u> |
| | 25,000 | 24,700 | 24,700 | 34,900 | 47,900 | 46,500 |
| Creditors (W2) | 8,000 | 12,500 | 6,000 ¹ | nil | nil | nil |
| Direct workers (W3) | 3,200 | 4,200 | 2,800 ¹ | nil | nil | nil |
| Variable overheads(W4) | 4,800 | 3,200 | nil | nil | nil | nil |
| Fixed overhead | <u>8,300</u> | <u>8,300</u> | <u>6,800</u> | <u>6,800</u> | <u>6,800</u> | <u>6,800</u> |
| | 24,300 | 28,200 | 15,600 | 6,800 | 6,800 | 6,800 |
| Closing cash balance | <u>700</u> | <u>(3,500)</u> | <u>9,100</u> | <u>28,100</u> | <u>41,100</u> | <u>39,700</u> |

W1: Cash receipts

| | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 |
|-----------------------|---------------|---------------|---------------|---------------|---------------|--------------|
| Units sold | 400 | 500 | 400 | 300* | - | - |
| Sales (K) (@K60/unit) | <u>24,000</u> | <u>30,000</u> | <u>24,000</u> | <u>18,000</u> | - | - |
| Cash received: 70% | | 16,800 | 21,000 | 16,800 | 12,600 | - |
| 30% | | | 7,200 | 9,000 | 7,200 | 5,400 |
| Existing bal. | <u>24,000</u> | <u>7,200</u> | - | - | - | - |
| Total receipts(K) | <u>24,000</u> | <u>24,000</u> | <u>28,200</u> | <u>25,800</u> | <u>19,800</u> | <u>5,400</u> |

*Sales in week 4 = opening stock + production in weeks 1 and 2 – sales in weeks 1-3
= 600 + (600+400) – (400+500+400) = 300

W2: Creditors

| | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 |
|--------------------------------|--------------|--------|--------|--------|--------|--------|
| Materials consumed at K15/unit | 9,000 | 6,000 | - | - | - | - |
| Increase in stocks | <u>3,500</u> | - | | | | |
| Materials purchase | 12,500 | 6,000 | | | | |
| Payment to suppliers | 8,000 | 12,500 | 6,000 | - | - | - |

W3: Wages

| | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 |
|----------------------|--------|--------|--------|--------|--------|--------|
| Wages consumed at K7 | 4,200 | 2,800 | | | | |
| Wages paid | 3,200 | 4,200 | 2,800 | | | |

W4: Variable overhead = budgeted production x budgeted cost per unit

W5: Fixed overhead: Payment for weeks 1-2 = fixed overhead per week – weekly depreciation
 =K9,000 – K700
 = K8,300

Payment for weeks 3-6= K8,300 normal payment – K1,500 per week
 =K6,800

- (c) (i) Revenues and expenses may not be attributed to the period when the associated inflows and cash outflows occur.
 (ii) Some items of expense do not affect cash outflow e.g. depreciation

6. (a) (i) Whether to make a product or buy it in.
 (ii) Whether or not to accept an order at a reduced price.
 (iii) Whether or not to discontinue producing an apparently loss making product.
 (iv) When allocating a scarce resource so as to maximize profits

- (b) (i) Provides a more logical and constant profit picture
 (ii) Fixed costs are time based and should be charged against the period in which they are incurred
 (iii) Many consider it more relevant to decision making for management

- (c) Component A should be bought-in. It should always be bought in regardless of any limiting factors as the variable cost of production is higher than the buy-in price.

- (d) (i) If production is limited to 4,000 machine hours:

| | Component | |
|----------------------------------------------|--------------|--------------|
| | B | C |
| Variable cost (K) | 8.00 | 14.00 |
| Buy-in cost | <u>12.00</u> | <u>26.00</u> |
| Additional cost per unit | 4.00 | 12.00 |
| Machine hours per unit | 0.50 | 2.00 |
| Additional cost per machine hour (K) (4/0.5) | 8.00 | (12/2)6.00 |

Component C has the lowest additional cost per limiting factor and should therefore be bought-in

(ii) If production is limited to 4,000 labour hours

| | Component | |
|-------------------------------------|--------------|--------------|
| | B | C |
| Variable cost (K) | 8.00 | 14.00 |
| Buy-in cost | <u>12.00</u> | <u>26.00</u> |
| Additional cost per unit | 4.00 | 12.00 |
| Labour hours per unit | 2.00 | 4.00 |
| Additional cost per labour hour (K) | (4/2) 2.00 | (12/4) 3.00 |

Component B has the lowest additional cost per limiting factor and should therefore be bought-in

7. (a)(i) Advantages of a standard costing system

- A useful basis for budgetary control
- Can be used for setting targets to motivate staff
- Management by exception can be instigated whereby management's attention is directed to items that deviate from plan
- Standard costing can lead to cost reduction
- Standard costing provides a simple basis for stock valuation
- Positive variances can be enhanced, and negative ones eliminated
- Standard costing can ensure that the most efficient use of resources is made.

(ii) Disadvantages of a standard costing system

- It may be expensive to install and maintain
- In times of inflation standard costs may soon become out-dated
- Responsibility for variances may not always be easy to identify

(b) (i) Direct cost: An item of cost that is directly attributable to a particular cost unit.

(ii) Prime cost: The total of direct materials cost, direct labour cost and direct expenses.

(iii) Conversion cost: The additional direct materials, direct wages, direct overheads and absorbed production overhead incurred in converting material input into semi-finished or finished product.

(a) (i) High-Low method

This involves the examination of historical data and comparing the changes in activity levels with the changes in costs. The variable cost per unit of activity may be found by dividing the increase in costs by the increase in activity.

(ii) Regression method

This involves the plotting of activity levels against corresponding cost levels on a graph. The 'line of best fit' can then be drawn to show the fixed and variable elements of the cost.

(b) (i) Methods of apportioning joint costs

- Weight of output (physical measures) method
- Net realizable value method
- Gross profit percentage method

(ii) Methods of apportioning overheads

- Repeated distribution method
- Simultaneous equation method
- Direct allocation method
- Specific order of closing

END