

---

# Management Accounting

2<sup>nd</sup> Year Examination

**May 2011**

**Paper, Suggested Solutions & Examiner's Report**



### NOTES TO USERS ABOUT THESE SOLUTIONS

The solutions in this document are published by Accounting Technicians Ireland. They are intended to provide guidance to students and their teachers regarding possible answers to questions in our examinations.

Although they are published by us, we do not necessarily endorse these solutions or agree with the views expressed by their authors.

There are often many possible approaches to the solution of questions in professional examinations. It should not be assumed that the approach adopted in these solutions is the ideal or the one preferred by us. Alternative answers will be marked on their own merits.

This publication is intended to serve as an educational aid. For this reason, the published solutions will often be significantly longer than would be expected of a candidate in an examination. This will be particularly the case where discursive answers are involved.

This publication is copyright 2011 and may not be reproduced without permission of Accounting Technicians Ireland.

© Accounting Technicians Ireland, 2011.



**Accounting Technicians Ireland**  
**2<sup>nd</sup> Year Examination: Summer 2011**  
***Paper: MANAGEMENT ACCOUNTING***

Thursday 19<sup>th</sup> May 2011 – 2.30 p.m. to 5.30 p.m.

**INSTRUCTIONS TO CANDIDATES**

In this examination paper the €/£ symbol may be understood and used by candidates in Northern Ireland to indicate the UK pound sterling and by candidates in the Republic of Ireland to indicate the Euro.

Answer FIVE questions.

Answer all three questions in Section A. Answer any two of the three questions in Section B.

If more than the required number of questions is answered, then only the requisite number, in the order filed, will be corrected.

Candidates should allocate their time carefully.

All figures should be labelled, as appropriate, e.g. €/£'s, units etc.

Answers should be illustrated with examples, where appropriate.

Question 1 begins on Page 2 overleaf.

**Note:**

Examinees are permitted to use terminology of either International Accounting Standards (I.A.S's) or Financial Reporting Standards (F.R.S's) where appropriate (e.g. Receivables/Debtors) when preparing management accounting statements.

**SECTION A**  
**ANSWER ALL THREE QUESTIONS**

**QUESTION 1 (Compulsory)**

DAFO Ltd is a manufacturing company who are currently reviewing the costing arrangements for product OD35. During the first quarter of the year they sold 50,000 units of OD35 at €/£30 per unit. They produced 45,000 units of OD35 during the quarter and the following production cost information has been provided for the quarter:-

<b>OD35</b>	Per unit €/£	Total cost €/£
Direct materials	7.00	315,000
Direct labour	16.00	720,000
Production overhead	5.00	225,000

At the beginning of January, there is a stock of 10,000 units valued as follows:-

	Per unit €/£	Total cost €/£
Direct materials	6.50	65,000
Direct labour	16.25	162,500
Production overhead	5.00	50,000

Sales and administration overheads for the quarter are as follows:

	€/£
Variable	55,000
Fixed	50,000

It is estimated that 40% of production overheads are variable, while the remainder are fixed.

**Requirement:-**

(a) Prepare an income and expenditure for the quarter using:

- i. absorption costing
- ii. marginal costing

**14 Marks**

(b) Prepare a note setting out the key advantages and disadvantages of both approaches.

6 Marks  
**Total 20 Marks**

**QUESTION 2 (Compulsory)**

You are a student who has been deployed in the stores department to review efficiency and stock controls. You have ascertained the following information about the organisation's main raw material:-

Minimum usage.....	100 units per day.
Maximum usage.....	800 units per day.
Average usage.....	400 units per day.
Total projected usage...	20,000 units per quarter.
Lead time.....	4 - 8 days.
Cost per order.....	€/£20.
Unit Cost.....	€/£25.
Carrying cost.....	6% of total materials cost per annum.

**Requirement:-**

(a) To assist with an efficiency review, calculate the following stock control ratios:

- (i) Stock re-order level.
- (ii) Minimum stockholding level.
- (iii) Economic order quantity.
- (iv) Maximum stockholding level.

**16 Marks**

(b) Detail any other factors that you think may influence the choice of order quantity.

**4 Marks**

**Total 20 Marks**

**QUESTION 3 (Compulsory)**

Mr Green, a sole trader, has been asked by his bank to provide detailed budget projections for the year ahead and he has provided you with the following information:-

	<b>Product Alpha</b>	<b>Product Beta</b>
<u>Sales Forecast</u>		
Quarter 1	10,000 units	2,000 units
Quarter 2	10,000 units	5,000 units
Quarter 3	10,000 units	5,000 units
Quarter 4	10,000 units	8,000 units
Sales price per unit	€/£ 35.00	€/£ 50.00
<u>Production Costs</u>		
Material A (€/£3.00/kg)	0.75kg per unit	4kg per unit
Material B (€/£2.00/kg)	1kg per unit	2kg per unit
<u>Direct Labour</u>		
Department 1 (€/£12.00/hr)	15 mins per unit	30 mins per unit
Department 2 (€/£10.00/hr)	1 hour per unit	1 hour per unit
<u>Stock Holding – Finished Goods</u>		
Opening Stock (Quarter 1)	5,000 units	2,000 units
Required Closing Stock (Quarter 4)	2,500 units	1,000 units

Other information

- There are no opening or closing stocks of materials held.
- Production is assumed to be even across the year.
- Other Production costs per annum
  - Supervisory wages           €/£42,000
  - Heat, light and power       €/£90,000
  - Maintenance of equipment   €/£25,000
  - Depreciation of equipment   €/£84,000
- General business overheads of €/£350,000 are also anticipated.

**Requirement:-**

(a) Prepare the following budgets, set out on a quarterly basis for the year:

- Sales Budget.
- Production Budget.
- Purchasing Budget.
- Direct Labour Cost Budget.

**14 Marks**

(b) Draft a budgeted Profit and Loss account for the year.

**6 Marks**  
**Total 20 Marks**

**SECTION B**  
**ANSWER TWO OUT OF THE FOLLOWING THREE QUESTIONS**

**QUESTION 4**

Costs may be classified in a number of different ways depending upon their nature and their use. Discuss cost classification with specific reference to:

- Fixed and variable costs.
- Direct and indirect costs.
- Product and period costs.

**Total 20 Marks**

**QUESTION 5**

GELO Ltd manufactures three types of radiators – standard, retro and modern. The budgeted standard costs of each product are detailed below:

	Standard €/£	Retro €/£	Modern €/£
Direct materials	5.00	7.50	10.00
Direct Labour	5.00	10.00	8.00
Variable Overhead cost	5.00	8.00	12.00
Fixed Overhead cost	<u>7.50</u>	<u>15.00</u>	<u>12.00</u>
	<u>22.50</u>	<u>40.50</u>	<u>42.00</u>
Sales Price	27.00	48.00	50.00
Budgeted volumes (per quarter)	3,750	2,250	1,500

The following information has also been provided:

- Direct materials are a specialist mild steel which is priced at €/£10 per kg.
- Fixed overhead costs are attributed on the basis of direct labour hours.
- Production volumes are equal to sales volumes, with no stocks being held.

The purchasing manager has advised that due a problem with the normal supplier, it is likely that the specialist mild steel will be limited to 4,000kg in the incoming quarter.

**Requirement:-**

(a) Calculate the total breakeven point in units for a quarter.

**7 Marks**

(b) Using appropriate calculations, advise GELO Ltd on the optimum production plan detailing the mix of products that should be produced during the quarter in order to maximise profits in the context of the limited supply of specialist mild steel.

**8 Marks**

(c) Prepare a brief note setting out the assumptions and limitations of cost-volume-profit analysis.

**5 Marks**

**Total 20 Marks**

**QUESTION 6**

You have been provided with the following standard cost and production information for analysis:

**Standard cost information**

Direct materials	6kg @ €/£10.00
Direct Labour	2 hours @ €/£12.50
Total projected overheads	€/£840,000
Fixed	50%
Variable	50%

Projected level of activity is 60,000 units, which will be spread evenly throughout the year. The actual data for the month of March 2011 is as follows:

Production	4,800 units	
Materials	28,000kg	€/£ 273,000
Labour	10,000hrs	€/£ 126,000
Overhead	Variable	€/£34,500
	Fixed	€/£36,000

**Requirement:-**

- (a) Calculate the following variances:
- (i) Materials Price.
  - (ii) Materials Usage.
  - (iii) Labour Rate.
  - (iv) Labour Efficiency.
  - (v) Variable Overhead Expenditure.
  - (vi) Fixed Overhead Expenditure.

**12 Marks**

- (b) Standard costing can be used for control and performance measurement. Prepare a note describing different types of control and explaining the basic principle of performance management and its potential benefits to organisations.

**8 Marks**  
**Total 20 Marks**



**2<sup>nd</sup> Year Examination: Summer 2011****Management Accounting****Suggested Solutions**

**Students please note:** These are suggested solutions only; alternative answers may also be deemed to be correct and will be marked on their own merits.

**Question 1****DAFO Ltd**

## (a) (i) ABSORPTION COSTING STATEMENT

	<b>€ / £</b>	<b>€ / £</b>
Sales		1,500,000
Cost of Production		
Opening Stock	277,500	
Direct Materials	315,000	
Direct Labour	720,000	
Variable Production Overhead	90,000	
Fixed production Overhead	135,000	
Closing Stock	(140,000)	
Cost of Goods Sold		(1,397,500)
Gross Profit		102,500
Sales & Administration Overheads		(105,000)
<b>Net Loss</b>		<b>(2,500)</b>

## (b)(i) MARGINAL COSTING STATEMENT

	€/£	€/£
Sales		1,500,000
Cost of Production		
Opening Stock	247,500	
Direct Materials	315,000	
Direct Labour	720,000	
Variable Production Overhead	90,000	
Closing Stock	(125,000)	
Cost of Goods Sold		(1,247,500)
Variable Sales & Administration Overhead		(55,000)
Contribution		197,500
Fixed Production Overhead		(135,000)
Fixed Sales & Administration Overheads		(50,000)
Net Profit		12,500

**WORKINGS**

## 1. Opening Stock

	Absorption Costing	Marginal Costing
Direct materials	6.50	6.50
Direct Labour	16.25	16.25
Variable Production Overhead (40%)	2.00	2.00
Fixed Production Overhead (60%)	<u>3.00</u>	-
Total cost per unit	27.75	24.75
Total stock value	277,500	247,500

## 2. Closing Stock - 5000 units

	Absorption Costing	Marginal Costing
Direct materials	7.00	7.00
Direct Labour	16.00	16.00
Variable Production Overhead (40%)	2.00	2.00
Fixed Production Overhead (60%)	<u>3.00</u>	-
Total cost per unit	28.00	25.00
Total stock value	140,000	125,000

## (b) Absorption Costing

ADVANTAGES	DISADVANTAGES
<ul style="list-style-type: none"><li>• Consistent with external reporting requirements</li><li>• Fixed Production costs necessary part of production cost to be considered</li><li>• Less fluctuations in profit when production is constant</li></ul>	<ul style="list-style-type: none"><li>• Less useful for short term decision making as focussed on full cost</li><li>• Cost-Volume-Profit relationship is not considered</li><li>• Can mask problems when sales are declining or if stock suffers obsolesce</li></ul>

## Marginal Costing

ADVANTAGES	DISADVANTAGES
<ul style="list-style-type: none"><li>• Easily understood and administered</li><li>• Useful for short term decision making focusing on variable costs to operate and removing impact of stock fluctuations</li><li>• Relates impact of production and sales policies and links with other management accounting processes</li></ul>	<ul style="list-style-type: none"><li>• Ignores fixed costs which can have long term implications for business/organisation</li><li>• Some difficulties can be experienced in correctly classifying cost between variable and fixed</li><li>• Uses historical data for future decision making. Ignores inflationary issues.</li></ul>

## Question 2

**(a) (i) Stock re-order level**

Reorder level = Maximum usage per day x maximum lead time (in days)

$$800 \times 8 = \mathbf{6,400 \text{ units}}$$

**(a) (ii) Minimum stockholding level**

Reorder level – average usage (per day) in average lead time (in days)

$$6,400 - (400 \times 6) = \mathbf{4,000 \text{ units}}$$

**(a) (iii) Economic order quantity**

Annual Usage – 20000 x 4 = 80,000 units

EOQ formulae

$\sqrt{\frac{2 D C_o}{H}}$	Co	Cost per order
carrying cost)	D	Demand per annum
H	H	Holding Cost per Unit (purchase price X

$$= \sqrt{\frac{2 \times 20 \times 80000}{(25 \times 6\%)}} = \mathbf{1,461 \text{ units}}$$

**(a) (iv) Maximum stockholding level**

(Re-order level + economic order quantity) – (minimum usage x minimum lead time)

$$6400 + 1461 - 100 \times 4 = \mathbf{7,461 \text{ units}}$$

**(b) Other factors influencing order quantity**

- Security of supply – scarcity in the market, threat of industrial action or transportation difficulties may lead to an increased order quantity
- Possibility of obsolescence may lead to reduced order quantity supported by regular ordering
- Uncertainty around holding arrangements or related opportunity costs (it is a fundamental assumption of EOQ that holding costs remain constant)
- Negotiation of bulk discount arrangements or forward buying arrangements
- Inflationary or deflationary environments can generally influence buying policies.

**Question 3 Mr Green**

## (i) Sales Budget

	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Annual Total
Sales Forecast(units)	10,000	10,000	10,000	10,000	40,000
- Alpha	2,000	5,000	5,000	8,000	20,000
- Beta					
Sales Value					
- Alpha	€/£350,000	€/£350,000	€/£350,000	€/£350,000	€/£1,400,000
- Beta	€/£100,000	€/£250,000	€/£250,000	€/£400,000	€/£1,000,000
<b>TOTAL SALES VALUE</b>	<b>€/£450,000</b>	<b>€/£600,000</b>	<b>€/£600,000</b>	<b>€/£750,000</b>	<b>€/£2,400,000</b>

## (ii) Production Budget

	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Annual Total
<b>ALPHA</b>					
Sales requirement (units)	10000	10000	10000	10000	40000
Add Closing Stock				2500	2500
Less Opening Stock	(5000)				(5000)
Production requirement (units)	5000	10000	10000	12500	<b>37500</b>
Production spread evenly across year	<b>9375</b>	<b>9375</b>	<b>9375</b>	<b>9375</b>	<b>37500</b>
<b>BETA</b>					
Sales requirement (units)	2000	5000	5000	8000	20000
Add Closing Stock				1000	1000
Less Opening Stock	(2000)				(2000)
Production requirement (units)	0	5000	5000	9000	<b>19000</b>
Production spread evenly across year	<b>4750</b>	<b>4750</b>	<b>4750</b>	<b>4750</b>	<b>19000</b>

## (iii) Purchasing budget

	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Annual Total
Production requirement (units) - Alpha	9375	9375	9375	9375	37500
Material A requirement	7031.25kg	7031.25kg	7031.25kg	7031.25kg	28125kg
Production requirement (units) - Beta	4,750	4,750	4,750	4,750	19,000
Material A requirement	19000kg	19000kg	19000kg	19000kg	76000kg
Total Material A	26031.25kg	26031.25kg	26031.25kg	26031.25kg	104125kg
<b>Material A - Cost</b>	<b>€/£78,093.75</b>	<b>€/£78,093.75</b>	<b>€/£78,093.75</b>	<b>€/£78,093.75</b>	<b>€/£312,375</b>
Production requirement (units) - Alpha	9375	9375	9375	9375	37500
Material B requirement	9375kg	9375kg	9375kg	9375kg	37500kg
Production requirement (units) - Beta	4,750	4,750	4,750	4,750	19,000
Material B requirement	9500kg	9500kg	9500kg	9500kg	38000kg
Total Material B	18875kg	18875kg	18875kg	18875kg	75500kg
<b>Material B - Cost</b>	<b>€/£37,750</b>	<b>€/£37,750</b>	<b>€/£37,750</b>	<b>€/£37,750</b>	<b>€/£151,000</b>
<b>TOTAL Materials Purchasing Budget</b>	<b>€/£115843.75</b>	<b>€/£115843.75</b>	<b>€/£115843.75</b>	<b>€/£115843.75</b>	<b>€/£463,375</b>

## (iv) Direct Labour Cost Budget

	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Annual Total
Production requirement (units) - Alpha	9375	9375	9375	9375	37500
Dept 1 labour requirement	2343.75 hrs	2343.75 hrs	2343.75 hrs	2343.75 hrs	9375hrs
Production requirement (units) - Beta	4,750	4,750	4,750	4,750	19,000
Dept 1 labour requirement	2375 hrs	2375 hrs	2375 hrs	2375 hrs	9500hrs
Total Dept 1 Labour	4718.75 hrs	4718.75 hrs	4718.75 hrs	4718.75 hrs	18875hrs
<b>Dept 1 Labour - Cost</b>	<b>€/£56,625</b>	<b>€/£56,625</b>	<b>€/£56,625</b>	<b>€/£56,625</b>	<b>€/£226,500</b>
Production requirement (units) - Alpha	9375	9375	9375	9375	37500
Dept 2 labour requirement	9375 hrs	9375 hrs	9375 hrs	9375 hrs	37500 hrs
Production requirement (units) - Beta	4750	4750	4750	4750	19000
Dept 2 labour requirement	4750 hrs	4750 hrs	4750 hrs	4750 hrs	19000 hrs
Total Dept 2 Labour	14125 hrs	14125 hrs	14125 hrs	14125 hrs	56,500 hrs
<b>Dept 2 Labour - Cost</b>	<b>€/£141,250</b>	<b>€/£141,250</b>	<b>€/£141,250</b>	<b>€/£141,250</b>	<b>€/£565,000</b>
<b>TOTAL LABOUR BUDGET</b>	<b>€/£197,875</b>	<b>€/£197,875</b>	<b>€/£197,875</b>	<b>€/£197,875</b>	<b>€/£791,500</b>



**(c) Budgeted Profit and Loss Account**

	Quarter 1 €/£	Quarter 2 €/£	Quarter 3 €/£	Quarter 4 €/£	Annual Total €/£
Sales	450,000	600,000	600,000	750,000	<b>2,400,000</b>
Opening Stock	150,250	227,469	208,688	189,906	<b>150,250</b>
Direct Materials	115,844	115,844	115,844	115,844	<b>463,375</b>
Direct Labour cost	197,875	197,875	197,875	197,875	<b>791,500</b>
Other Production Overheads	60,250	60,250	60,250	60,250	<b>241,000</b>
Closing Stock	(227,469)	(208,688)	(189,906)	(751,250)	<b>(751,250)</b>
Cost of Sales	296,750	392,750	392,750	488,750	<b>1,571,000</b>
Gross Profit	153,250	207,250	207,250	261,250	<b>829,000</b>
General Business Overhead	87,500	87,500	87,500	87,500	<b>350,000</b>
<b>Net Profit</b>	<b>65,750</b>	<b>119,750</b>	<b>119,750</b>	<b>173,750</b>	<b>€/£479,000</b>

*NB – Quarterly breakdown not required by question – provided for completeness of workings only*

**FURTHER WORKINGS**

## Other Production Overheads

Supervisory wages	€/£42,000
Heat, light and power	€/£90,000
Maintenance of equipment	€/£25,000
Depreciation of equipment	€/£84,000
TOTAL	€/£241,000
Per Quarter	€/£60,250

## OPENING STOCK

Alpha – 5000 units @ €/£17.25	= €/£86,250
Beta – 2000 units @ €/£32.00	= €/£64,000
	€/£150,250

## CLOSING STOCK

Alpha – 2500 units @ €/£17.25	= €/£43,125
Beta – 1000 units @ €/£32.00	= €/£32,000
	€/£75,125

#### Question 4

Cost can be defined as 'the expenditure incurred on, or attributable to a specific thing or activity.' Costs can be classified according to the internal management accounting systems (eg: by activity, by department or by job or product) depending upon the nature of the business and its use of cost information.

The main classifications of cost are by:

- Fixed and variable costs determined by cost behaviour
- Direct or indirect costs determined by relationship to the cost objective
- Product and period costs

Costs behaviour is means of analysing and classifying costs which is particularly useful for decision making as it can examine how different activity levels influence costs. Typical cost behaviours patterns include:

**Fixed Costs** remain unchanged regardless of the activity level over a specified period of time. Examples of fixed costs include depreciation, rental costs or maintenance costs. Although the fixed costs of a business are static, the amount of fixed cost allocated to a unit will decrease with increased production and increase if unit output is reduced.

**Variable costs** normally vary with different levels of production. Examples of variable costs in most businesses include material or labour costs which increase or decrease according to levels of production. Some costs behave in a semi-variable manner – that is they contain a variable and a fixed cost element. An example of this could be certain sales costs which have an initial fixed cost and then a cost per unit of production. Certain other costs can be described as 'stepped' – where they are fixed up to a certain level of activity and then increase to a higher fixed amount above a certain activity level. Activity Based Costing approaches draw further analysis between short term and long term variable costs.

Within a management accounting system, as costs are incurred they are classified by means of the accounts coding system. An important primary classification is that into Direct and Indirect costs.

**Direct costs** can be exclusively attributed to a particular product, activity, job, service or department. An example of a direct costs would include:

Direct materials – raw materials used in production;

Direct labour - wages paid for work directly related to production;

Direct expenses or overheads - other costs which are related exclusively to a job or production unit

The total of direct costs is known as the 'Prime Cost'

**Indirect costs** cannot be directly traced to a particular product, activity or department – but are still very relevant to decision making or costing exercises. (eg: supervisory or inspection costs) In some instances, a direct cost will be treated as indirect because the amount of the cost is insignificant and the direct tracing to the cost object may not be cost effective (eg: small fittings such as screws or nails used in the production). Indirect costs are often assigned to products, activities, jobs or departments using cost allocations – which involves the estimation of the cost of resources used.

Using direct and indirect cost classifications ensures accurate costing for product costing and pricing decisions.

**Product costs** are costs related to a manufacturing process and will normally include the

Direct materials cost	X
Direct labour cost	X
Direct manufacturing overhead	<u>X</u>
Prime Cost	xx
Indirect materials cost	X
Indirect Labour cost	X
Indirect manufacturing overhead cost	<u>X</u>
Product Cost	<u>xx</u>

**Period Costs** are those which are associated running the business within an accounting period rather than directly related to manufacturing or production. Examples of period costs would include general administration costs or professional fees.

This distinction between product and period costs is an important difference between internal management accounting and external financial accounting in that stock valuations for external accounting should be based on product costs only, with period costs being directly expensed when incurred.

Cost classification is an important element of management accounting as it is required for

- allocating costs within the accounting system to cost of goods sold and stock to calculate profits/losses and enable the production of internal and external reports
- to provide relevant information to assist managers in making better decisions

- to provide information for planning, control and performance measurement.



**QUESTION 5**

## (a) Total Breakeven Point

	Standard €/£	Retro €/£	Modern €/£
Sales price	27.00	48.00	50.00
Variable cost	15.00	25.50	30.00
Contribution per unit	12.00	22.50	20.00
Current sales mix	50%	30%	20%
Weighted contribution	6.00	6.75	4.00

Total Weighted Contribution = €/£16.75

## Calculation of Fixed Costs

Standard	7.5 * 3750	= 28125
Retro	15.00 * 2250	= 33750
Modern	12 * 1500	= 18000
		<b>79875</b>

**Breakeven point in units**

$$\frac{\text{Fixed Costs}}{\text{Weighted contribution}} = \frac{79875}{16.75} = 4768 \text{ units}$$

## (b)

	<b>Standard</b>	<b>Retro</b>	<b>Modern</b>
Contribution per unit	€/£12.00	€/£22.50	€/£20.00
Direct Materials required per unit	0.5kg	0.75kg	1.00kg
Contribution per Kg of direct material	€/£24.00	€/£30.00	€/£20.00
<b>Ranking</b>	<b>2nd</b>	<b>1st</b>	<b>3rd</b>

The optimal production plan to maximise profits will concentrate on sales of Retro, followed by Standard and finally use any remaining materials for Modern production

### Optimal Plan – 4,000kg available

<b>2,250 units of Retro</b>	1687.5 kg required	2312.5 kg remaining
<b>3,750 units of Standard</b>	1875kg required	437.5 kg remaining
<b>437 units of Modern</b>	437kg required	-

This plan will yield the following contribution \*

	Standard	Retro	Modern	Total
Contribution per unit	€/£12.00	€/£22.50	€/£20.00	
Units produced and sold	3750	2250	437	6437
<b>Total contribution</b>	<b>€/£45,000</b>	<b>€/£50,625</b>	<b>€/£8,740</b>	<b>€/£104,365</b>

*\*not required but provided to enhance the solution*

(c )

Cost-volume profit analysis simplifies cost information and applies marginal costing principles for use in decision making and as such has a number of underpinning assumptions and limitations on use

#### Assumptions

Costs can be accurately analysed between fixed and variable;  
 Similarly sales prices are constant and there is no provision for discount or volume adjustments; this analysis is only applicable to a single product situation or where there is more than one product, the mix of sales remains static;  
 There is a linear relationship between costs throughout the range and also between sales and costs. This means that both the variable and fixed cost elements remain the same regardless of conditions and that all elements are related to output.

### Limitations

The assumptions create certain limitations on the use of cost volume profit analysis as rarely do actual costs, sales and production circumstances remain constant with linear relationships as required. For example, Cost volume profit analysis would not be applicable where discount on sales volumes are offered or where production efficiencies impact on costs. There are also few organisation which operate with a single product or with a standard sales mix where there is a number of sales items.

C-V-P analysis should only be applied for short term decision making as fixed costs and profit targets should be fully considered in long term financial planning scenarios.

**QUESTION 6**

(a)

(i) Material price variance

$$\begin{array}{rcl}
 \text{(Actual Quantity} \times \text{Actual price)} - \text{(Actual Quantity} \times \text{Standard Price)} & & \\
 (28,000 \times 9.75) & - & (28,000 \times 10.00) \\
 273,000 & - & 280,000 & = & \text{€ / £7,000 fav}
 \end{array}$$

(ii) Materials usage variance

$$\begin{array}{rcl}
 \text{(Actual Quantity} \times \text{Standard price)} - \text{(Standard Quantity required for actual output} \times \\
 \text{Standard price)} & & \\
 (28,000 \times 10.00) & - & (4800 \times 6 \times 10.00) \\
 280,000 & - & 288,000 & = & \text{€ / £8,000 fav}
 \end{array}$$

(iii) Labour rate variance

$$\begin{array}{rcl}
 \text{(Actual Hours} \times \text{Actual Rate)} - \text{(Actual Hours} \times \text{Standard rate)} & & \\
 (10,000 \times 12.60) & - & (10,000 \times 12.50) \\
 126,000 & - & 125,000 & = & \text{€ / £1,000 adv}
 \end{array}$$

(iv) Labour efficiency variance

$$\begin{array}{rcl}
 \text{(Actual Hours} \times \text{Standard rate)} - \text{(Standard Hours required for Actual Output} \times \text{Standard} \\
 \text{rate)} & & \\
 (10,000 \times 12.50) & - & (4800 \times 2 \times 12.50) \\
 125,000 & - & 120,000 & = & \text{€ / £5,000} \\
 \text{adv} & & & & 
 \end{array}$$

(v) Variable overhead expenditure variance

$$\begin{array}{rcl}
 \text{(Actual variable Overhead)} - \text{(Actual productivity} \times \text{Variable Overhead Recovery} \\
 \text{Rate)} & & \\
 34,500 & - & (4,800 \times 7.00) & = & \text{€ / £900 adv}
 \end{array}$$

Working Total variable overhead =  $840,000 \times 50\% = \text{€ / £}420,000 / 60,000 \text{ units} = \text{€ / £}7.00 \text{ per unit}$

Other calculation based on labour acceptable but efficiency variance not required

(vi) Fixed overhead expenditure variance

$$\begin{array}{rcl}
 \text{(Actual Fixed Overhead expenditure)} - \text{( Budgeted fixed overhead expenditure)} & & \\
 36,000 & - & (420,000 / 12) & = & \text{€ / £1,000 adv}
 \end{array}$$

(b)

**BRIEFING NOTE - TYPES OF CONTROL AND PERFORMANCE MANGEMENT**

Control is an essential feature of any organisation which can be supported by management accounting techniques and information. In the context of standard costing, variance analysis is used to highlight differences between actual and standard costs to prompt corrective or reactive action. Standard costing can also be used as a performance management tool as it provides benchmarks and targets to assist the organisation in determining if it is meeting its objectives.



There are three distinct types of control

- Action or behavioural control
- Personnel and cultural control
- Results or Output control

Action or behavioural controls involve observing or supervising actions of individuals involved in production to ensure that quantity and quality targets are met.

Personnel and cultural controls involve establishing expected values, behaviours and norms which are used to support achievement of targets.

Results or output controls involves collecting and reporting information on outputs. This type of control is focussed on quantitative information and can be most closely related to management accounting information produced. Such information may include variance analysis and other key target statistics. Results controls require performance targets to be set, establishment of actual results, measurement of performance and taking action accordingly.

Performance management is a collective term used to describe activities carried out to ensure that an organisations goals and objectives are being met in an effective and efficient manner. It is described by Armstrong and Baron (1998) as *'a strategic and integrated approach to increasing the effectiveness of organisations, by improving the performance of the people who work in them and developing the capabilities of teams and individual contributors'*.

Performance management normally operates at a number of levels- for the organisation as a whole, within departments or sections, in teams or for individuals. Performance management is used both in business orientated organisations and increasingly in not-for profit organisations (eg: public service departments).

Performance management can involve a range of qualitative and quantitative activities, but a main aim is to create 'goal congruence' within an organisation. Goal congruence entails everyone acting in the common interest of achieving the most important objectives of the organisation – these can be expressed as 'Key Performance Indicators' (KPI's).

From a financial perspective, performance management targets are likely to include market share, manufacturing efficiencies, profit achieved. From a service perspective, performance management is likely to focus on customer satisfaction measures, service output measures, repeat business, innovative developments or improvements

The benefits of good control and performance management can be direct financial gains, improved motivation and employee satisfaction and improved efficiency in systems and processes.



## 2<sup>nd</sup> Examination: Summer 2011

### Management Accounting

### Examiner's Report

#### Key Statistics

	Q1	Q2	Q3	Q4	Q5	Q6	Total
No attempting	936	868	933	633	299	899	
Average Mark	11.68	11.92	9.54	10.49	7.96	10.52	51
Average %	58.4	59.6	47.7	52.5	39.8	52.6	
<b>Overall pass rate 60.4 %</b>							

Range of Marks	No.	%
Under 30	84	8.8
30-39	116	12.2
40-49	176	18.5
50-59	254	26.6
60-69	222	23.3
70+	101	10.6

#### General Comment

The overall performance at this session of the 2<sup>nd</sup> Year Management Accounting examination was good, although down significantly on last year's session of the examination. The average mark recorded at this session was 51% and the Pass Rate was 60.4%.

The examination assessed all aspects of the syllabus and most candidates made a good attempt at the required 5 questions. In terms of performance for individual questions – most candidates scored well on Questions 1 and 2. Questions 3 and 5 presented students with the most difficulties and therefore returned the lowest average marks.

The format comprised of a compulsory section with three scenario based, largely computational type questions assessing the application of key concepts of the syllabus in practical situations; and a second section where the candidate was required to answer 2 out of 3 questions, which included a mainly narrative question together with other computational/theory questions.

Candidates who answered the specific requirements of the required number of questions, presenting answers in a logical format, with relevant supporting workings scored highly. Those who did not submit complete answers or provide relevant workings struggled to pass this examination.

### **Question 1**

This question required a comparison of marginal and absorption costing techniques. While many candidates scored well, typical errors related to incorrect stock valuations and the complete omission of fixed production overhead costs from marginal costing statements. While it may seem obvious, candidates should take care to include appropriate titles on statements and note that the requirement did not require monthly statements.

### **Question 2**

This question required the calculation of four standard stock control ratios and a comment on stockholding issues, in the context of materials costing. Most candidates were able to make a good effort at detailing and applying the formulae, with some inevitable errors in the economic order quantity calculation. The standard of answers to the final narrative section was not as good with a number choosing to restate elements of the EOQ rather than mention issues such as obsolescence, cashflow or inflation

### **Question 3**

The preparation of operational budgets and projected income and expenditure accounts is a subject which is well covered in the manual and therefore it is disappointing that the overall standard of responses to this question was poor. There were numerous errors which appeared consistently, but most notable was the failure to answer the requirements of the question. Part (a) required four separate operational budgets, which some did not provide. There was confusion between production and purchasing budgets; the inclusion of overheads in one or other of these statements; mention of inflows and outflows which were not relevant. In some cases quarterly information was not provided and in other cases there was no total or summary information – both elements

were important to the solution. The standard of Part(b) was poor with some providing separate statements for product alpha and beta – while this demonstrates costing ability – it does not comprehensively address the requirement. It was clear from many of the scripts submitted that candidates were not familiar with the budget preparation process.

#### **Question 4**

This was a straightforward narrative type question examining various aspects of cost classification and terminology and it was generally answered well. Answers could have benefitted from some introduction to set the context and further elaboration or examples of some terminology.

#### **Question 5**

This question on cost volume profit analysis in a multi product scenario was by a measure the least popular on the paper and the poorest in terms of marks scored. Most candidates were not able to correctly calculate the correct breakeven point and many did not attempt Part (b) – dealing with a limited resource. The standard of answers to Part (c) which required a statement of assumptions and limitations of cost-volume-profit analysis was equally poor. This is an area which will require further examination with reference to the standard variety of decision making scenarios which it can be applied to as this session has demonstrated a weakness of ability.

#### **Question 6**

This question examined variance analysis in a standard format and was generally well answered. It should be highlighted to students that where random incorrect numbers are presented without statement of the variance equation or any workings, then marks will not be gained as there is no evidence of learning. In terms of variance calculation, variable overhead expenditure caused difficulty when the variance overhead recovery rate was not applied to actual production. In a similar vein, some problems were also experienced with labour efficiency and materials usage. Many candidates struggled to make a meaningful connection between variance analysis and performance management, choosing instead to discuss these items in isolation accordingly marks in part (b) were lower.