



Advanced Management Accounting Module 13 June 2011

Suggested Solutions

Question 1

a) Variable Costing	Year 1	Year 2	Year 3	
	€	€	€	
Sales Revenue	4,500,000	5,600,000	6,100,000	2 Marks
<u>Less Variable Costs incl S&D</u>	<u>-2,925,000</u>	<u>-3,640,000</u>	<u>-3,965,000</u>	2 Marks
Contribution	1,575,000	1,960,000	2,135,000	
<u>Less Fixed Costs incl S&D</u>	<u>-1,250,000</u>	<u>-1,300,000</u>	<u>-1,300,000</u>	2 Marks
Profit	325,000	660,000	835,000	
Closing Inventory (qty x €55)	275,000	495,000	440,000	2 Marks
b) Absorption Costing	Year 1	Year 2	Year 3	
	€	€	€	
Sales Revenue	4,500,000	5,600,000	6,100,000	1 Mark
<u>Less Cost of Sales</u>				
Opening Inventory	0	300,000	540,000	1 Mark
Production Cost of goods manuf.	3,000,000	3,600,000	3,600,000	2 Marks
<u>Less Closing Inventory</u>	<u>-300,000</u>	<u>-540,000</u>	<u>-480,000</u>	2 Marks
= Cost of Sale	2,700,000	3,360,000	3,660,000	
Gross Profit	1,800,000	2,240,000	2,440,000	
<u>Less S&D Costs</u>	<u>-1,450,000</u>	<u>-1,560,000</u>	<u>-1,610,000</u>	2 Marks
Net Profit	350,000	680,000	830,000	
c) Reconciliation of Profits	Year 1	Year 2	Year 3	
	€	€	€	
Profit per Variable Costing	325,000	660,000	835,000	
<u>Profit per Absorption Costing</u>	<u>350,000</u>	<u>680,000</u>	<u>830,000</u>	
Difference in Profits	-25,000	-20,000	5,000	1 Mark
Closing Inventory per Variable	275,000	495,000	440,000	
<u>Closing Inventory per</u> <u>Absorption</u>	<u>300,000</u>	<u>540,000</u>	<u>480,000</u>	
Difference	-25,000	-45,000	-40,000	
Change in Valuation per annum	0	-20,000	5,000	1 Mark

Company should try more closely to align production with sales as increasing production in excess of years 1 & 2 means that while profits are higher there is a cash drain out of the business to fund this production.

Question 2

a) Performance Measurement Tools

Balanced Scorecard is one of the most popular tools

Explanation of same

Uses financial measures

Exs: Financial reports, monthly a/cs etc, Variance analysis

Customers measures

EGs: Customer satisfaction surveys, complaints, mkt share, new & repeat customers

Internal Customer measures

EGS: Lead times, quality measures, on time delivery, variances

Learning and growth measures

Egs: Staff t/o, no.s in training/education, Employee suggestions, quality circles

Students may also refer to key performance indicators (KPIs) or

Critical Success Factors (CSFs) and give examples

12 Marks

b)

Use of TQM

Explanation of TQM

Uses of TQM

How it can be used to make cost savings

elimination of waste

Increased efficiency

Cost reduction

3 Marks

Value analysis and engineering explanation

3 Marks

New focus on product design and cost reduction / management

3 Marks

Other relevant point on cost reduction / management

such as planned programmes and crash programmes

3 Marks

Question 3

a) Learning Curve

$$Y = A(x)^{-0.152}$$

Time per unit in first batch is 1 hour and 1,000 units in a batch so
time for first batch = 1,000 hours.

Avg time for first four batches =

Y = 1000(4) ^{-0.152}	810.0034736	hours per batch	
x Batches	4		
= Total Hours for 4 batches	3240.013895	hours	4 Marks

	Per batch	
Total DM Cost	30,000	
DL Cost	16,200	
<u>Variable P OH</u>	<u>5,000</u>	
Total Variable Prod Cost	51,200	
<u>Sales Revenue</u>	<u>100,000</u>	
Contribution b4 variable S&D	48,800	
<u>Variable S&D</u>	<u>10,000</u>	
Contribution	38,800	4 Marks

b)

Avg time for first 3 batches =

Y = 1000(3) ^{-0.152}	846.208862	hours per batch	
x Batches	3		
= Total Hours for 3 batches	2538.62659	hours	

- Total Hours for 4 batches	3240.01389	hours	
Total Time for 4th batch and each subsequent batch	701.387308	hours	4 Marks

Total DM Cost	30,000	
DL Cost	14,028	
<u>Variable P OH</u>	<u>5,000</u>	
Total Variable Prod Cost	49,028	
<u>Sales Revenue</u>	<u>100,000</u>	
Contribution b4 variable S&D	50,972	
<u>Variable S&D</u>	<u>10,000</u>	
Contribution	40,972	4 Marks

c) Implications

Affects Standard costs and variances

Affects budgeted profitability

May have impact on pricing

May impact on decision making

Other relevant points

4x1 Mark

Question 4

a) North Limited	A	B	C	D	Total
	€000	€000	€000	€000	€000
Sales	600	400	475	675	2150
<u>Less Variable Costs</u>	<u>-395</u>	<u>-380</u>	<u>-310</u>	<u>-575</u>	<u>-1660</u>
Contribution	205	20	165	100	490
<u>Product Specific Fixed Costs</u>	<u>-60</u>	<u>-60</u>	<u>-60</u>	<u>-60</u>	<u>-240</u>
Profit b4 General Fixed Costs	145	-40	105	40	250
<u>General Fixed Costs</u>	<u>-60</u>	<u>-60</u>	<u>-60</u>	<u>-60</u>	<u>-240</u>
Profit / (Loss)	85	-100	45	-20	10

Decision should be to drop Product B and retain Product D as B makes a loss before general fixed costs and

D make a profit that contributes towards general fixed costs that remain unchanged.

Financial impact	A	C	D	Total
	€000	€000	€000	€000
Sales	600	475	675	1750
<u>Less Variable Costs</u>	<u>-395</u>	<u>-310</u>	<u>-575</u>	<u>-1280</u>
Contribution	205	165	100	470
<u>Product Specific Fixed Costs</u>	<u>-60</u>	<u>-60</u>	<u>-60</u>	<u>-180</u>
Profit b4 General Fixed Costs	145	105	40	290
<u>General Fixed Costs</u>				<u>-240</u>
Profit / (Loss)				50

10 Marks

b) Limiting Factor	X	Y	Z	
Contribution per unit	9	18	20	
Kgs per unit	3	2	5	
Contribution per kg	3	9	4	
Rank	3	1	2	
Allocate 60,000 kgs	14,000	16,000	30,000	
Units [Optimal Production Plan]	4,667	8,000	6,000	3 Marks
Total Contribution	42,000	144,000	120,000	306,000
Less Fixed Costs			<u>96,000</u>	
Maximum Profit			210,000	3 Marks

Other Factors

Shortfall of units of X

Possible loss of future customers

Marketing considerations

Availability of other suppliers

Use of surplus labour

Other relevant points

4 x 1 Mark

Question 5

a)

Sales @ €220	2,200,000	
<u>Less Var Costs</u>	<u>- 1,000,000</u>	
Contribution	1,200,000	
<u>Fix costs</u>	<u>- 100,000</u>	
Profit	1,100,000	3 Marks

b) Optimal pricing model where $MR = MC$

$$P = a + bQ$$

a = Zero qty at a price = €320

b = rate of change = $+10 / -1,000 = 0.01$ -0.01

$$P = 320 - 0.01Q$$

$$TR = P \times Q = 320Q - 0.01Q^2$$

$$dTR/dQ = MR = 320 - 0.02Q$$
 4 Marks

$$TC = 100Q + 100000$$

$$MC = 100$$

$$MR = MC$$

$$320 - 0.02Q = 100$$

$$0.02Q = 220$$

$$Q = 220 / 0.02$$
 11000

$$\mathbf{Q = 11,000}$$
 OPTIMAL QTY **3 Marks**

Substitute into demand function to establish price

$$P = 320 - 0.01(11,000)$$

$$P = 210$$
 OPTIMAL PRICE **3 Marks**

may need to set at 5.12 or 5.13 in practice

Units	11000
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Sales @ €210	2,310,000
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<u>Less Var Costs</u>	<u>- 1,100,000</u>
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Contribution	1,210,000
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<u>Specific Fix costs</u>	<u>- 100,000</u>
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Maximum Profit	1,110,000	2 Marks
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Maximum profit is 10,000 more than part (a).

c)

This price and qty maximises profits but may not be the most practical. It is an unusual price point and for practical purposes company may have to consider €199 which will affect profitability.

It also assumes that demand is purely determined by price and not by packaging quality and advertising etc. **5 Marks**

Question 6

a) Reconciliation Statement

Original Budgeted Profit	5000 x 40	200000		
Sales Volume Profit Var	-500*40	-20000	Adv	1 Mark
Sales Price Var	441,000 - 4500 x100	-9000	Adv	1 Mark
DM Price Var	5x18900-113400	-18900	Adv	1 Mark
DM Usage Var	18000-18900) x 5	-4500	Adv	1 Mark
DL Rate Var	8500*10 - 106250	-21250	Adv	1 Mark
DL Effic. Var	(9000 - 8500)x 10	5000	Fav	1 Mark
Var OH Exp Var	8500*5-45000	-2500	Adv	1 Mark
Var OH Effic Var	(9000 - 8500)x 5	2500	Fav	1 Mark
Fixed OH Exp Var	50000-52000	-2000	Adv	1 Mark
Fixed OH Vol Var	500*10	-5000	Adv	1 Mark
Actual Profit / Loss		124350		

b) Planning and Op
Variances

Planning DM Price Variance	(5.00 - 6.50) x 18900	-28350	Adv	1 Mark
<u>Operating DM Price Variance</u>	<u>(6.50 - 6.00) x 18,900</u>	<u>9450</u>	<u>Fav</u>	1 Mark
Original Price Variance		-18900	Adv	
Planning DL Rate Variance	(10.00 - 12.50) x 8,500	-21250	Adv	1 Mark
<u>Operating DL Rate Variance</u>	<u>(12.50 - 12.50) x 8,500</u>	<u>0</u>		1 Mark
Original Price Variance		-21250		

Comment : although original variances look bad this is primarily due to the standard being out of date because the actual operational variances are very positive. **2 Marks**

c) Financial Variances give a financial picture of performance but this may not present the full detail of what is happening. It does not take into account the actual market position and may also not reflect that the budgets may have been set when conditions may have been different.

Also there is a danger that non-financial managers may not fully understand the meaning or implications of the variances and therefore ignore or disregard them.

4 Marks