



Advanced Management Accounting Module 13

November 2010

Suggested Solutions

Question 1

A)	Per unit	Original Budget	Flexed Budget	Actual
Units		500	350	350
		€	€	€
Sales	150	75,000	52,500	52,500
Material A	10	5,000	3,500	5250
Material B	5	2,500	1,750	1680
Electrics	50	25,000	17,500	21000
Labour				
Assembly	30	15,000	10,500	15750
Contribution	55	27,500	19,250	8,820
Less Fixed Costs		20,000	20,000	20,000
Profit		7,500	-750	-11,180
		[2 Marks]	[2 Marks]	

b) Reconciliation
Original Budgeted Profit

€
7,500

Sales Vol Contrib Variance

-150*55

-8250

Unfav

[2 Marks]

Flexed Profit

-750

Material A Price Var

(20-25)*210

-1050

Unfav

[1 Mark]

Material B Price Var

(10-12)*140

-280

Unfav

[1 Mark]

Electrics Cost Var

(50-60)*350

-3500

Unfav

[2 Marks]

Labour Price

0

Material A Usage Var

(175-210)*20

-700

Unfav

[2 Marks]

Material B Usage Var

(175-140)*10

350

Fav

[2 Marks]

Labour Efficiency

(700-1050)*15

-5250

Unfav

[2 Marks]

Fixed OH Exp

0

Actual Profit

As Above

-11,180

c) Possible Reasons for adverse variances

Start up situation

Poor control

Learning curves not 'kicked' in.

Lack of training

Lack of bargaining / buying power from new company

Inexperience at negotiating contracts

Recommendations: Training/monthly reports/monitoring

Other relevant points

[4 x 1 Mark]

Question 2

Pricing

Optimal pricing model

$$P = a + bQ$$

a = price where Q=zero

b = rate of change

Q = quantity

$$900$$
$$+30/-20$$

1.50

[2 Marks]

[2 Marks]

$$P = 900 - 1.50Q$$

$$TR = 900Q - 1.5Q^2$$

$$MR = DTR/DQ = 900 - 3Q$$

$$MC = 95$$

[1 Mark]

Opt. Position where $MR = MC$

$$900 - 3Q = 95$$

Optimal Position

$$Q = 268$$
 [4 Marks]

substituting Q into Price fn.

$$P = 900 - 1.50(268)$$

$$\text{Price} = \text{€}497.5$$

$$497.5$$
 [3 Marks]

Sales units

268

€

Sales

133,330

Less Var. Costs (@Target)

-25,460

Contribution

107,870

Less TFC

-20,000

Profit

87,870

[3 Marks]

b) Other factors for price setting

Competition

Size of market

Mkt share v optimal profits

Packaging / quality/ advertising.

Problems establishing price demand r-ship

Strategies

Cost plus

Market / Competitors price

Premium pricing

Discounted / special offer

[5 Marks]

Question 3

a) Financial difficulties

1: will shortly have cashflow problems

already used over half of capital invested in production and is committed to another two months spend before he receives any cash from his customer.

The solution to this will be to talk with customer and explain the working capital implications of what he has signed up for and hope that they will agree to change the contract and make earlier payments.

2. The first months production figures and costs show that there has not been adequate control and that there has been significant usage and cost over-runs. This may require more training and monitoring and may result in extra costs being incurred.

This will require careful management by John.

3. John is working long hours and this can and is leading to stress which may result in tiredness and ill-health if left un-checked.

John needs to considering strengthening the management team and delegating workload.

4. John has set up as a sole trader which leaves him personally liable for losses or debts that may be incurred.

Consider setting up a corporate structure.

5. John has no pre-arranged debt/overdraft facilities arranged and may find it difficult to get them in the current economic climate.

Prepare a business plan and go see bank manager

Other relevant points.

Any 5 x 2 Marks

b)John should re-consider his structure and move from a sole trade to a limited liability company. This is particularly relevant if the patent is in his own name as he can then charge the company a licence / royalty fee for the use of the patent which will allow him to receive income tax free under current tax rules.

He needs to consider how to invest in the business and may wish to consider putting in a small amount as share capital and the rest in the form of directors loans will allow him to extract the cash from the business when the accounts and cashflow allow.

Other relevant points.

Any 2 x 2 Marks

c) Metrics and explanation of how relevant

Sales units
 Production units
 Cashflow
 Margins
 Quality measures
 etc

Any 3 x 2 Marks

Question 4

a)	Shampoo	Conditioner	Combination	Total
Selling price	40	60	70	
<u>Variable Cost</u>	<u>- 20</u>	<u>- 20</u>	<u>- 25</u>	
Contribution	20	40	45	
<u>Units</u>	<u>25,000</u>	<u>15,000</u>	<u>10,000</u>	
Total Contribution	500,000	600,000	450,000	1,550,000
Fixed Costs				<u>- 1,000,000</u>
Operating Profit				550,000
	[1 Mark]	[1 Mark]	[1 Mark]	[1 Mark]

b)	<u>Total Contribution</u>	<u>1,550,000</u>	31.00	Avg Contrib
	Total boxes	50,000		per box

Breakeven				
Units	<u>Total Fixed Cost</u>	<u>1,000,000</u>	32,258	boxes
	Avg Contrib p box	31	[2 Marks]	

Split by product	Shampoo	Conditioner	Combination	
	16,129	9,677	6,452	Rounding errors
x Selling Price pu	40	60	70	
Breakeven Revenue	645,161	580,645	451,613	1,677,419
	[2 Marks]	[2 Marks]	[2 Marks]	Rounding errors

c) Limiting factor Analysis	Shampoo	Conditioner	Combination	
Contribution p box	20	40	45	
Machine hours per box	2	2	2	
Contribution p machine hour	10	20	23	
Rank	3	2	1	
Allocate	25,000	30,000	20,000	75,000
Boxes	12,500	15,000	10,000	
Total Contribution	250,000	600,000	450,000	1,300,000
			Less Fixed	- 1,000,000
			Max Profit	300,000
	[2 Marks]	[2 Marks]	[2 Marks]	[2 Marks]

Question 5

Q1 $y=ax^n$ = Cumulative avg time per unit

A)

a = 50 hours

$Y_{50} = 50(50)^{-0.152}$

	<u>50 Units</u>	avg pu	
	27.59		[4 Marks]
	€	€	
Materials	7,500.00	150.00	[1/2 Mark]
Dir. Labour	5,517.68	110.35	[1 Mark]
Var. O/head	2,758.84	55.18	[1 Mark]
Fixed overheads	<u>5,000.00</u>	<u>100.00</u>	[1/2 Mark]
Total Costs	20,776.52	415.53	
Total Sales	29,087.13	581.74	
Profit Month 1	8,310.61	166.21	[1 Mark]

B)

Month 2

Time for 50th unit = total time for 50 less total time for 49

	Avg per unit	Total	
50	27.59	1,379.42	
49	27.67	1,355.99	
Time for 50th Unit		23.43	[2 Marks]

all other units produced will take this long

Materials	7,500.00	150.00	[1 Mark]
Dir. Labour	4,686.00	93.72	[1 Mark]
Var. O/head	2,343.00	46.86	[1 Mark]
Fixed overheads	<u>5,000.00</u>	<u>100.00</u>	[1 Mark]
Total Costs	19,529.00	390.58	
Total Sales	27,340.60	546.81	[1 Mark]
Profit Month 2	7,811.60	156.23	[1 Mark]

c) Pricing policy

Company should consider what competitors are charging and should benchmark their price against these to ensure they are not too high. Earlier products are more profitable because of the nature of mark-up and the company might be wiser to consider margin. If costs rise will customers be willing to take extra cost.

Other relevant point

[4 Marks]

Question 6

a) Dysfunctional decision making

Management makes decisions that are not in best long term interests

of shareholder wealth maximization.

Students should use examples such as

Use of ROCE/ROI < Residual Income

Use of IRR v NPV particularly when cash reversals

Use of profit margins v Economic Value added

Etc

3 x 2 Marks

b) Cost reduction /
Management

Crash programmes - explanation of and examples such as closing profitable plants to move to unproven lower cost environments.

Planned programmes - structured approach towards reducing and managing costs. More beneficial and less reactionary

Use of examples such as value analysis and value engineering, total quality management, benchmarking etc.

2 x 4 Marks

c) Quality costs

Internal failure

Appraisal costs

Prevention costs

External failure

costs

Management accountant should look at cost of prevention v cure.

Management accounting control system should be designed to measure and report on these costs and benefits.

4 x 2 Marks