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Practice assessment model answers

Management Accounting: Decision and Control (MDCL)

Practice assessment 2 (for Live assessments from 5 March 2018)

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Practice assessment model answers – MDCL

Task 1 (12 marks)

(a)	Calculate the following:			(3 marks)
		£		
	Budgeted prime cost for 2,750 units	145,750		
	Budgeted marginal cost for 4,500 units	256,500		
	Full production cost for 6,000 units	552,000		
(b)	Which of the following is a responsibilities expenditure and the level of investment	ty centre where th t?	e manager is responsible for income,	(1 mark)
	Investment centre			
(c)	A company expects to sell 8,000 ties per Variable costs are $\pounds10$ per tie, and fixed	r month for £18 ea costs are £40,000	ch. per month.	
(i)	Calculate the contribution per unit.			(1 mark
	£8			
(ii)	Calculate the total contribution for the	month.		(1 mark
	£ 64,000			
(iii)	Calculate the total profit for the month.			(2 marks
	£ 24,000			
(iv)	Calculate the break even point in units			(2 marks)
	5,000 units			
(v)	Calculate the margin of safety.			
	You should NOT round your answer.			(2 marks)
	37.5 %			

Task 2 (15 marks)

(a) Calculate the three variances below to the nearest whole pound (£). Enter a zero if there is no variance. Do not use brackets or minus signs. Use the dropdown boxes to indicate whether the variance is adverse, favourable or no variance.

(9 marks)

Variance	£	Adverse/Favourable/ No variance	
Materials usage variance	720	Adverse 🗸 🗸	
Labour rate variance	840	Adverse 🗸	
Variable overhead efficiency variance	210	Favourable 🔻	

(b) Calculate the following variances to the nearest whole pound (£). Enter a zero if there is no variance.
Do not use brackets or minus signs. Use the dropdown boxes to indicate whether the variance is adverse, favourable or no variance.

(6 marks)

The fixed production overhead expenditure variance is	£	2,200	adverse	▼.	
The fixed production overhead volume variance is	£	1,500	favourable	▼.	

Task 3 (15 marks)

Complete the operating statement below using marginal costing.

- (a) Calculate the FIVE missing figures to the nearest whole pound (£). Do not use minus signs or brackets. Enter a zero if there is no variance.
- (b) Use the drop down boxes to identify if EACH variance is adverse, favourable or no variance.

	£		
Standard marginal cost of actual production	41,600		
Variance		Favourable/ Adverse/No varia	ance
Material price	0	No variance	▼
Material usage	1,400	Favourable	▼
Direct labour rate	0	No variance	
Direct labour efficiency	3,200	Adverse	▼
Variable overhead rate	384	Favourable	▼
Variable overhead efficiency	640	Adverse	▼
Actual marginal cost of actual production	43,656		
Fixed overheads: budget cost	9,000		
Fixed overheads: expenditure variance	1,000	Adverse	
Total actual cost of actual production	53,656		

(10 marks) (5 marks)

Task 4 (12 marks)

(a) Complete the table below by entering the FOUR missing figures. Use minus signs for negative figures.

20X0 Volume of units	October (000)	November (000)	December (000)
Trend	180	200	220
Seasonal variation	-12	10	-6
Seasonally adjusted sales	168	210	214

(b) JET wishes to forecast sales volumes using time series analysis for the first 6 months of 20X1. Enter the appropriate five month moving averages in the table below.

(2 marks)

(4 marks)

Month (20X1)	Sales (units)	Five month moving average
January	2,500	
February	2,650	
March	2,700	2,600
April	2,600	2,650
Мау	2,550	
June	2,750	

(c) Calculate the forecast price per kg in December 20X1. Your answer should be to two decimal places.	(1 mark)
£ 27.25	
(d) Calculate the values of a and b.	(4 marks)
Value of a: £ 10,000	
Value of b: £ 0.30	

(e) JET's energy costs are an example of:

A fixed cost

A variable cost A semi-variable cost

(1 mark)

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Task 5 (18 marks)

The notes below cover a range of possible points that you may include in your written response. These examples are not intended to be exhaustive and other valid comments may be relevant.

(a) Describe the following types of standards:

- ideal standards
- basic standards.

(4 marks)

Ideal standards

These standards assume perfect operating conditions. As they assume no slippage whatsoever, they are impossible to achieve.

Basic standards

These are standards that are left unchanged over long periods of time. They are based on historic costs but are likely to be out of date.

(b) Discuss the type of variance that may arise under EACH type of standard and how it may affect employee behaviour.

(9 marks)

Ideal standards

All variances are always likely to be adverse because any inefficiency will lead to the standard not being achieved.

Whilst they can act as a motivating target to strive towards, any variances arising will be negative and potentially demotivating. No matter how efficiently employees work they are assessed against an impossible target. This could lead to employees 'cutting corners' to achieve the target (e.g. buying sub-standard chocolate to achieve the ideal standard ingredient costs).

Basic standards

All rate/price/cost variances are likely to be adverse because positive inflation of costs (e.g. wage rises) will lead to actual costs always being higher than standard. If the standards are perceived to be too difficult to achieve, staff could easily become demotivated. The staff may mistrust the budgeting system if it's not perceived as fair.

However, all efficiency/usage variances are likely to be favourable as for example, the investment in new manufacturing techniques may allow chocolate production to be more efficient over time. Employees could be motivated by positive performance against the standards, although may not be motivated if the standards are seen to be too easy and not a challenge.

Task 5 continued

(c) Recommend possible improvements to the existing standards for ingredients and labour. Use calculations to support your recommendations.

(5 marks)

Ingredients

Normal wastage should be incorporated into the material input standards. The 5% wastage of input appears to be reasonable and would increase the expected input quantities. Up to date ingredient costs should be used in the standard.

<u>Labour</u>

Learning effects will mean the attainable standard time to make the chocolates will be less than the basic standard; the improved machine efficiency should reduce standard time by 20%. Higher wage rates should be incorporated in the standard rate/hour to reflect wage inflation.

Task 6 (15 marks)

Use the given information to complete the table below by entering the missing figures.

- · Assume that gross profit excludes fixed costs.
- Show all percentage figures rounded to TWO decimal places.

(15 marks)

• Show all other figures to the nearest whole number.

Key performance indicator	
Selling price per seat (£)	70
Occupancy rate (%)	80.00
Variable costs per occupied seat (£)	35
Gross profit margin (%)	50.00
Fixed costs per occupied seat (\mathfrak{L})	26
Contribution per seat (£)	35
Break-even number of seats	180,290
Break-even turnover (£)	12,620,300
Margin of safety (%)	24.88
Markup on total cost (%)	14.21

Task 7 (18 marks)

(a) Complete the table to show the optimal production plan using the current inventory. Show all (kg) and (£) figures to two decimal places.

	Product X	Product Y	Product Z
Material required per unit (kg)	2.00	0.80	1.80
Contribution per unit (£)	2.50	1.60	2.70
Contribution per limiting factor (\pounds)	1.25	2.00	1.50
Optimal production (units)	200	600	400

(b) Calculate the following.

The maximum profit resulting from the optimal production plan would be £

The notes below cover a range of possible points that you may include in your written response. These examples are not intended to be exhaustive and other valid comments may be relevant.

(c) Explain why the company cannot fulfil its total sales demand and why it has chosen to make the quantities of each product. You may use calculations to support your answer.

If the company were to produce total sales demand they would require 2,000 kg of material (which they don't have).

This makes maximum sales demand impossible to achieve. This means they need to make the best possible use of the scarce resource, in this case material.

To do this we calculate the contribution per limiting factor and produce in order of the best return in terms of the limiting factor.

If we do not do this and produce any other quantity we will have less contribution and therefore less profit.

Optimum production gives a contribution of £2,540 (1,080+960+500) whereas producing X first would give a contribution of £2,440 or £2,240.

(3 marks)

(8 marks)

.70

.50

1.785

(7 marks)

Task 8 (15 marks)

(a) Calculate the FOUR missing figures to complete the table below.

	£
Total anticipated cales revenue	260.000
	300,000
Target total operating profit	90,000
Target total costs	270,000
Target cost per unit (to two decimal places)	13.5

(b) (i) Complete the table below.

Calculate the number of units that the company would need to sell to maintain a profit margin of 25%. Assume the lifecycle costs are expected to be as in (a) and (b) above. Enter your answers in the table below to the nearest penny.

	£
Reduced selling price per unit	17.00
Target operating profit per unit	4.25
Target total cost per unit	12.75
Expected variable manufacturing cost per unit	7.00
Target fixed costs per unit	5.75

(ii) Calculate the required sales volume.

To the nearest whole unit, the required sales volume is 25,217

The notes below cover a range of possible points that you may include in your written response. These examples are not intended to be exhaustive and other valid comments may be relevant.

units.

(c) Explain how the concept of lifecycle costing would have been implemented in this case including the elements that would have been taken into account in arriving at the decision. You may use calculations to support your answer.

Lifecycle costing involves taking into account all costs across a product's lifetime. Typically this is used for products having a short life and would involve research and development costs, fixed and variable manufacturing costs and decommissioning or end of life costs.

All costs are compared with forecast revenue to arrive at a profit which is then compared to the required return to see if it is acceptable.

In this case, the lifecycle costs would come to £285,000 (which is higher than the £270,000 needed to give the required return) or (which gives a profit of less than 25%). The product would be rejected.

(5 marks)

(3 marks)

(5 marks)

(2 marks)