Practice assessment model answers

Management Accounting: Decision and Control (MDCL)

Practice assessment 2

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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 responsibility centre where the manager is responsible for income, expenditure and the level of investment? (1 mark)

Investment centre ▼

(c) A company expects to sell 8,000 ties per month for £18 each.
Variable costs are £10 per tie, and fixed costs are £40,000 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. (10 marks)

(b) Use the drop down boxes to identify if EACH variance is adverse, favourable or no variance. (5 marks)

	£	
Standard marginal cost of actual production	41,600	
Variance		**Favourable/ Adverse/No variance**
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	

Task 4 (12 marks)

(a) Complete the table below by entering the FOUR missing figures. Use minus signs for negative figures. (4 marks)

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)

Month (20X1)	Sales (units)	Five month moving average
January	2,500	
February	2,650	
March	2,700	2,600
April	2,600	2,650
May	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: (1 mark)

A fixed cost ☐

A variable cost ☐

A semi-variable cost ☑

Task 5 (18 marks)

(a) Identify TWO characteristics for EACH of the following standards:

Q	Model Answer
(a)	The response below cover a range of possible points that you may include in your written response. This example is not intended to be exhaustive and other valid comments may be relevant. **Ideal standards** (2marks) These standards assume perfect operating conditions. As they assume no slippage whatsoever, they are impossible to achieve. **Basic standards** (2marks) 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 variances that may arise under EACH type of standard and how they may affect employee behaviour. (9 marks)

Q	Model Answer
(b)	The response below cover a range of possible points that you may include in your written response. This example is not intended to be exhaustive and other valid comments may be relevant. **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.
Bands	**Descriptor**
0	No response worthy of credit.

1 – 3	Answer provides a limited discussion (unlikely to go beyond an explanation) of the types of variance that may arise; limited relevant points made and response doesn't cover each type of standard as required. Limited discussion of how the variances are likely to affect employee behaviour. Little or no inclusion of evidence to support points made. Responses cannot access higher bands if they do not address both types of variance and how they could affect employee behaviour. Answers are likely to consider just adverse or favourable variances for each type of standard with little elaboration.
4 – 6	Answer demonstrates a good understanding of the type of variance that may arise under ideal and basic standard. Answers then discuss for both types of variance the impact that their use can have on employee behaviour. Response goes beyond a basic explanation and provides a balanced discussion of the topic – to achieve marks within this band, the response must discuss **both** types of standard **AND** the effect they can have on employee behaviour. A good range of relevant points are given, and there is good use of evidence. Answers may consider in detail just whether variances might be adverse or favourable under each type of standard.
7 – 9	To achieve marks in the top band, the response will demonstrate an excellent understanding of standards and their relationship with **BOTH** the types of variance that can arise and the effect on employee behaviour. The discussion will be well balanced across the two types of standard, with effective use of evidence/contextual information to support the highly relevant points being made throughout. The very highest quality answers may consider both favourable and adverse variances that could arise and their implications of employee behaviour for each type of standard.

(c) (i) Recommend THREE possible improvements to the existing standards for ingredients.
You should use the information in the scenario to support your recommendations. (3 marks)

Q	Model Answer
(c) (i)	The response below cover a range of possible points that you may include in your written response. This example is not intended to be exhaustive and other valid responses may be relevant. **Improvements to standards:** <u>Ingredients</u> 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.

(c) (ii) Recommend TWO possible improvements to the existing standards for labour.
You should use the information in the scenario to support your recommendations. (2 marks)

Q	Model Answer
(c) (ii)	The response below cover a range of possible points that you may include in your written response. This example is not intended to be exhaustive and other valid responses may be relevant. **Improvements to standards:** <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.**
- **Show all other figures to the nearest whole number.**

(15 marks)

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 (£)	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. (8 marks)

	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 (£)	1.25	2.00	1.50
Optimal production (units)	200	600	400

(b) Calculate the following. (3 marks)

The maximum profit resulting from the optimal production plan would be £ 1,785 .

(c) Analyse why the company cannot fulfil its total sales demand and why it has chosen to make the quantities of each product. You should use calculations, where appropriate, to support your answer. (7 marks)

Q	Model Answer
(c)	The response below cover a range of possible points that you may include in your written response. This example is not intended to be exhaustive and other valid responses may be relevant. 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. Optimal production gives a contribution of £2,540 (1,080 + 960 + 500) whereas producing X first would give a contribution of £2,440 (exact answer £2437.90) for producing X, Y, Z or £2,240 for producing X, Z, Y.
Bands	**Descriptor**
0	No response worthy of credit.
1 – 2	Answer provides a **very brief** analysis as to why company cannot fulfil its total sales. Little or no relevant explanatory points made to justify choice in quantities for each product. No calculations to support answer.
3 – 5	Answer provides a **brief** analysis as to why the company cannot fulfil its total sales. To achieve the highest marks in the band, the response will be supported by satisfactory examples justifying the reasons for choosing quantities for each product. Limited calculations to support answer.
6 – 7	Answer gives a **detailed** analysis as to why the company cannot fulfil its total sales. To achieve the highest marks in the band, the response will be supported by detailed examples justifying the reasons for choosing quantities for each product. Answer fully supported by calculations.

Task 8 (15 marks)

(a) Calculate the figures in the table below. (5 marks)

	£
Total anticipated sales revenue	360,000
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, assuming the lifecycle costs are to be the same as in (a) above. Answers MUST be given to the nearest penny. (3 marks)

	£
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 number of units that the business would need to sell to maintain a profit margin of 25%. (1 mark)

To the nearest whole unit, the required sales volume is 25217 units.

(c) Discuss 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. Use the information provided at the start of the task to support your answer. You may use calculations to support your answer. (6 marks)

Q	Model Answer
(c)	The response below covers a range of possible points that you may include in your written response. This example is not intended to be exhaustive and other valid responses may be relevant. 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**.**
Bands	**Descriptor**
0	No response worthy of credit.
1 – 2	Answer provides a **very brief** discussion of how the concept of lifecycle costing would have been implemented, including little of the elements that would have been taken into account in arriving at a decision. Points made are not supported by sufficient examples from the scenario.
3 – 4	Answer provides a **brief** discussion of how the concept of lifecycle costing would have been implemented, including some of the elements that would have been taken into account in arriving at a decision. Points made will be supported by some examples from the scenario.
5 – 6	Answer provides a **detailed** discussion of how the concept of lifecycle costing would have been implemented, including all the elements that would have been taken into account in arriving at a decision. Points made will be well supported by examples from the scenario.