**Leeming Senior High School**

**Accounting and Finance ATAR (Year 12)**

**Unit 3**

**Task 3**

**Marking Key**

**Assessment Type:**

Test

**Total Marks:**

65 marks

**Conditions:**

**Period Allowed for Completion of the Task:**

60 minutes under invigilated conditions.

**Task Weighting**

7% of the school mark for this pair of units

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**Section 1 (5 marks)**

**Answer the first 5 questions by circling the most appropriate answer.**

1 The break-even point is achieved when total revenue equals

1. total fixed costs.
2. total indirect costs.
3. total costs.
4. total variable costs.

2 In cost-volume-profit (CVP) analysis, an increase in the number of units sold will increase the

1. contribution margin per unit.
2. fixed costs per unit.
3. break-even point.
4. margin of safety.

3 Billy-EyeLash Ltd provided the following information about its business. Variable expenses are $36 300, fixed expenses are $50 000, and profit is $27 200. What is the sales amount in dollars?

1. $59 100
2. $77 200
3. $86 300
4. $113 500

4 ProsstMaloan Ltd provided the following information about its business. The selling price of the product is $40, variable expenses are $32 and fixed expenses are $4 800. What is the break-even point in units?

1. 120
2. 150
3. 600
4. 800

5 If the selling price per unit, and the variable cost per unit, both increase by 20%, and fixed costs do not change, what will be the effect on the following?

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Contribution Margin Per Unit** | **Contribution Margin Ratio** | **Break-Even in Units** |
| (a) | increases | no change | decreases |
| (b) | no change | no change | no change |
| (c) | no change | increases | no change |
| (d) | increase | increases | decreases |

**Section 2 (60 marks)**

**Answer the following questions in the spaces provided.**

**Question 6 (22 marks)**

Tourquekan Limited sells restored motorcycles. The average motorcycle sells for $40 000 and has a total variable cost of $30 000. Fixed costs are approximately $300 000 per annum.

(a) Explain how management might use cost-volume-profit analysis for decision-making purposes.

(4 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Correctly explains, incorporating any four points listed below, how management might use cost-volume-profit analysis for decision-making purposes | **4** |
| Correctly explains, incorporating any three points listed below, how management might use cost-volume-profit analysis for decision-making purposes | **3** |
| Correctly explains, incorporating any two points listed below, how management might use cost-volume-profit analysis for decision-making purposes | **2** |
| Correctly explains, incorporating any point listed below, how management might use cost-volume-profit analysis for decision-making purposes | **1** |
| **Answer could include, but is not limited to, the following points:** | |
| * CVP can be used to:   + determine the volume of sales needed to break even;   + determine the volume of sales needed to achieve a certain level of profit;   + determine the optimum selling price;   + determine the effect of profit of changes in price or any of the cost components; and   + determine whether the firm’s resources can be profitably diverted to producing an alternative product. | |
| **Total Marks** | **4** |

(b) Explain what is meant by the term ‘margin of safety’. (2 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Correctly explains, incorporating the two points listed below, what is meant by the term ‘margin of safety’. | **2** |
| Correctly explains, incorporating one of the points listed below, what is meant by the term ‘margin of safety’. | **1** |
| **Answer could include, but is not limited to, the following points:** | |
| * Margin of Safety is the amount by which the expected sales will exceed the break-even point. * For example, if the break-even point is 3 000 units, and the expected sales are 4 000 units, the margin of safety is 1 000 units. This can be expressed as a percentage by dividing the margin by the volume of expected sales, and multiplying by 100. | |
| **Total Marks** | **2** |

(c) Calculate the contribution margin per motorcycle and the contribution margin ratio.

(4 marks)

**Workings:**

|  |  |
| --- | --- |
| **Contribution Margin =** | **SP Per Unit – VC Per Unit** |

|  |  |  |
| --- | --- | --- |
| **Contribution Margin (Per Motorcycle) =** | 40 000 – 30 000 | **1 mark** |

|  |  |  |
| --- | --- | --- |
| **Contribution Margin (Per Motorcycle) =** | **10 000** | **½ mark** |

|  |  |
| --- | --- |
| **Contribution Margin Ratio =** | **Contribution Margin Per Unit** |
| **Selling Price Per Unit** |

|  |  |  |
| --- | --- | --- |
| **Contribution Margin Ratio =** | 10 000 | **1 mark** |
| 40 000 |

|  |  |  |
| --- | --- | --- |
| **Contribution Margin Ratio =** | 0.25 x 100 | **1 mark** |

|  |  |  |
| --- | --- | --- |
| **Contribution Margin Ratio =** | **25%** | **½ mark** |

(d) Calculate the break-even point in units and sales dollars. (4 marks)

**Workings:**

|  |  |
| --- | --- |
| **Break-Even Point (Units) =** | **TFC** |
| **Contribution Margin** |

|  |  |  |
| --- | --- | --- |
| **Break-Even Point (Units) =** | 300 000 | **1 mark** |
| 10 000 |

|  |  |  |
| --- | --- | --- |
| **Break-Even Point (Units) =** | **30** | **1 mark** |

|  |  |  |
| --- | --- | --- |
| **Break-Even Point (Sales Dollars) =** | **30 x 40 000** | **1 mark** |

|  |  |  |
| --- | --- | --- |
| **Break-Even Point (Sales Dollars) =** | **$1 200 000** | **1 mark** |

(e) Tourquekan Limited requires a profit of $1 500 000 per annum. Calculate the required target sales in units, and sales dollars, to achieve the target profit. (5 marks)

**Workings:**

|  |  |
| --- | --- |
| **Profit =** | **(SP x QS) – [(VC x QS) + TFC]** |

|  |  |  |
| --- | --- | --- |
| **1 500 000 =** | **(40 000 x QS) – [(30 000 x QS) + 300 000]** | **1 mark** |

|  |  |  |
| --- | --- | --- |
| **QS =** | (1 500 000 + 300 000)/(40 000 – 30 000) | **1 mark** |

|  |  |
| --- | --- |
| **QS =** | 1 800 000/10 000 |

|  |  |  |
| --- | --- | --- |
| **QS (Units) =** | 180 | **1 mark** |

|  |  |  |
| --- | --- | --- |
| **QS (Sales Dollars) =** | 180 x 40 000 | **1 mark** |

|  |  |  |
| --- | --- | --- |
| **QS (Sales Dollars) =** | $7 200 000 | **1 mark** |

(f) Management consider the revenue to achieve a profit of $1 500 000 is achievable. Calculate the margin of safety percentage. (3 marks)

**Workings:**

|  |  |
| --- | --- |
| **Margin of Safety** | **Actual or Budgeted Sales – Break-Even Sales** |

|  |  |  |
| --- | --- | --- |
| **Margin of Safety** | $7 200 000 - $1 200 000 | **1 mark** |

|  |  |
| --- | --- |
| **Margin of Safety** | **$6 000 0000** |

|  |  |  |
| --- | --- | --- |
| **Margin of Safety (%)** | **Margin of Safety (In Dollars)** | **x 100** |
| **Total Actual/Budgeted Sales** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Margin of Safety (%)** | 6 000 000 | x 100 | **1 mark** |
| 7 200 000 |

|  |  |  |
| --- | --- | --- |
| **Margin of Safety (%)** | **83.3%** | **1 mark** |

**Question 7 (38 marks)**

XYZ Bike Builders Pty Ltd custom-make environmentally friendly bikes. They manufacture a hybrid bike and a road bike. Each comes equipped with GPS mounts, saddlebags, and retractable security locks. They distribute the product through their website, and approved bicycle stores in Perth, Western Australia.

The following information has been provided:

|  |  |
| --- | --- |
| Total Fixed Costs | $140 000 |
| Production Capacity in Units | 1 700 |
| Sales Commission Per Unit on Sale Price | 20% |

|  |  |  |
| --- | --- | --- |
|  | **Hybrid Bike** | **Road Bike** |
| Variable Costs | $1 800 | $1 540 |
| Sales Mix in Units | 600 | 800 |
| Sales Price Per Unit | $2 500 | $2 300 |

(a) Calculate the contribution margin per unit for each bike. (6 marks)

**Workings:**

|  |  |
| --- | --- |
| **Contribution Margin (Hybrid Bike) =** | **SP Per Unit – VC Per Unit** |

|  |  |  |
| --- | --- | --- |
| **Contribution Margin (Hybrid Bike) =** | $2 000 **(2 500 x 0.8) –** $1 800 | **2 marks** |

|  |  |  |
| --- | --- | --- |
| **Contribution Margin (Hybrid Bike) =** | **$200** | **1 mark** |

|  |  |
| --- | --- |
| **Contribution Margin (Road Bike) =** | **SP Per Unit – VC Per Unit** |

|  |  |  |
| --- | --- | --- |
| **Contribution Margin (Road Bike) =** | $1 840 **(2 300 x 0.8) –** $1 540 | **2 marks** |

|  |  |  |
| --- | --- | --- |
| **Contribution Margin (Road Bike) =** | **$300** | **1 mark** |

(b) Calculate to the nearest cent, the weighted average contribution margin per unit, for each bike. (6 marks)

**Workings:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sales Mix** | | | | |
| **Hybrid Bike** | **Number of Units Sold (Hybrid Bike)** | 600 | = **43%** | **2 marks** |
| **Total Units Sold (Hybrid Bike and Road Bike)** | 1 400 |
| **Road Bike** | **Number of Units Sold (Road Bike)** | 800 | = **57%** | **2 marks** |
| **Total Units Sold (Hybrid Bike and Road Bike)** | 1 400 |

|  |  |
| --- | --- |
| **Weighted Contribution Margin =** | **Contribution Margin x Sales Mix Proportion** |

|  |  |  |
| --- | --- | --- |
| **Weighted Contribution Margin (Hybrid Bike) =** | 200 x 0.43 | **1 mark** |

|  |  |
| --- | --- |
| **Weighted Contribution Margin (Hybrid Bike) =** | **$86** |

|  |  |  |
| --- | --- | --- |
| **Weighted Contribution Margin (Road Bike) =** | 300 x 0.57 | **1 mark** |

|  |  |
| --- | --- |
| **Weighted Contribution Margin (Road Bike) =** | **$171** |

(c) A new bike hire company is setting up in Perth and wants to specialise in overnight and weekly hire. They have approached XYZ Bike Builders Pty Ltd to make a special order of 400 hybrid bikes at a discounted price of $1 950. They will be branded with the bike hire business’s logo. No sales commission is payable.

1. Advise which bike XYZ Bike Builders Pty Ltd should reduce production of, if they are to accept the special order. Explain how you came to this decision. (5 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Explains which bike XYZ Bike Builders Pty Ltd should reduce production of, if they are to accept the special order, correctly and in detail | **5** |
| Explains which bike XYZ Bike Builders Pty Ltd should reduce production of, if they are to accept the special order, correctly | **4** |
| Explains which bike XYZ Bike Builders Pty Ltd should reduce production of, if they are to accept the special order | **3** |
| Explains which bike XYZ Bike Builders Pty Ltd should reduce production of, if they are to accept the special order, correctly but in limited detail | **2** |
| Explains which bike XYZ Bike Builders Pty Ltd should reduce production of, if they are to accept the special order, in limited detail | **1** |
| **Answer could include, but is not limited to, the following points:** | |
| * XYZ Bike Builders Pty Ltd should reduce production of the hybrid bike, if they are to accept the special order. * This is because the contribution margin of the hybrid bike is less than that of the road bike, meaning the amount of the financial contribution each bike makes to cover the fixed costs of the business is less. | |
| **Total Marks** | **5** |

1. Calculate the profit on the special order (3 marks)

**Workings:**

|  |  |
| --- | --- |
| **Profit =** | **(SP x QS) – [(VC x QS) + TFC]** |

|  |  |  |
| --- | --- | --- |
| **Profit (Special Order) =** | (1 950 x 400) – [(1 800 x 400)] | **1 mark** |

|  |  |  |
| --- | --- | --- |
| **Profit (Special Order) =** | (780 000) – [(720 000)] | **1 mark** |

|  |  |  |
| --- | --- | --- |
| **Profit (Special Order) =** | **$60 000** | **1 mark** |

1. Calculate the overall increase in profit for XYZ Bike Builders Pty Ltd, if the special order is accepted. (7 marks)

**Workings:**

|  |  |
| --- | --- |
| **Profit =** | **(SP x QS) – [(VC x QS) + TFC]** |

|  |  |  |
| --- | --- | --- |
| **Profit (Opportunity Cost) =** | (2 000 x 100) – [(1 800 x 100)] | **2 marks** |

|  |  |  |
| --- | --- | --- |
| **Profit (Opportunity Cost) =** | (200 000) – [(180 000)] | **1 mark** |

|  |  |  |
| --- | --- | --- |
| **Profit (Opportunity Cost) =** | **$20 000** | **1 mark** |

|  |  |
| --- | --- |
| **Overall Increase in Profit =** | **Profit (Special Order) – Profit (Opportunity Cost)** |

|  |  |  |
| --- | --- | --- |
| **Overall Increase in Profit =** | 60 000 – 20 000 | **2 marks** |

|  |  |  |
| --- | --- | --- |
| **Overall Increase in Profit =** | **$40 000 Increase** | **1 mark** |

1. Using purely quantitative reasoning, recommend whether XYZ Bike Builders Pty Ltd should accept the order. (2 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Recommends that XYZ Bike Builders Pty Ltd should accept the order, using correct quantitative reasoning | **2** |
| Recommends that XYZ Bike Builders Pty Ltd should accept the order, without using correct quantitative reasoning | **1** |
| **Answer could include, but is not limited to, the following points:** | |
| * Given the order would result in a $40 000 increase in profit, the special order should be accepted. | |
| **Total Marks** | **2** |

1. Analyse three (3) qualitative factors that should be considered, before the managers decide to accept or reject the special order. (9 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Analyses three (3) qualitative factors that should be considered, before the managers decide to accept or reject the special order, in detail | **9** |
| Analyses two (2) qualitative factors that should be considered, before the managers decide to accept or reject the special order, in detail | **6** |
| Analyses one (1) qualitative factor that should be considered, before the managers decide to accept or reject the special order, in detail | **3** |
| **Answer could include, but is not limited to, the following points:** | |
| * Qualitative factors that might influence the decision to accept or reject the order might include:   + the effect on existing customers – taking the order means that the firm cannot supply some existing customers, and this might have a negative impact on future sales, if those potential customers go elsewhere;   + failure to accept the order might give a competitor an opportunity to gain the market share; and   + if it becomes known that this new firm has been given a special price, the existing customers may demand the same price and become dissatisfied if they do not get it. | |
| **Total Marks** | **9** |