Exam 5 Question 1 part 5

Clearly there are marked differences in the unit costs

A B C

Prev. Cost 190 200 135

Revised cost 212 150 386

Prev. SP 285 300 202

An examination of the overheads show that volume is not the best driver and therefore inappropriate for determining consumption ratios.

Costs are more aligned with batch drivers

Product C at the current SP is not profitable.

Product B is overpriced at the target of 50% mark-up

Product A is reasonably priced.

Actions

Change SP for B (lower) which may lead to greater volume.

Abandon product C or determine if the market will pay the higher price

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Question 1** | | |  | A | B | C |  |  |  |  |
|  | 1. |  | Units | 1,000 | 3,000 | 500 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | Dir Labour | 20 | 20 | 10 |  |  |  |  |
|  |  |  | Dir Mat | 50 | 60 | 65 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | Dir Mat $ | 50,000 | 180,000 | 32,500 | 262,500 |  |  |  |
|  |  |  | Dir Lab $ | 20,000 | 60,000 | 5,000 | 85,000 |  |  |  |
|  |  |  | Overhead | 120,000 | 360,000 | 30,000 | 510,000 |  |  |  |
|  |  |  | TC | 190,000 | 600,000 | 67,500 | 857,500 |  |  |  |
|  |  |  | Unit Cost | $ 190.00 | $ 200.00 | $ 135.00 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  | 2. |  | Planned SP | $ 285.00 | $ 300.00 | $ 202.50 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  | 3. |  | No of Setups | 20 | 50 | 30 | 100 |  |  |  |
|  |  |  | Mats Weight | 400 | 250 | 350 | 1,000 |  |  |  |
|  |  |  | Mat Moves | 250 | 450 | 300 | 1,000 |  |  |  |
|  |  |  | No of Inspect | 300 | 350 | 350 | 1,000 |  |  |  |
|  |  |  | Mach Hours | 3,000 | 9,000 | 3,000 | 15,000 |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | **ABC Allocation** |  |  |  |  |  |  |  |
|  |  |  | Machine Setups | 5,000 | 12,500 | 7,500 | 25,000 |  |  |  |
|  |  |  | Mats Handling | 40,000 | 25,000 | 35,000 | 100,000 |  |  |  |
|  |  |  | Hazardous Mat Cont | 62,500 | 112,500 | 75,000 | 250,000 |  |  |  |
|  |  |  | Quality Control | 22,500 | 26,250 | 26,250 | 75,000 |  |  |  |
|  |  |  | Other O/H | 12,000 | 36,000 | 12,000 | 60,000 |  |  |  |
|  |  |  | Total O/H | 142,000 | 212,250 | 155,750 | 510,000 |  |  |  |
|  |  |  | Mats & Lab | 70,000 | 240,000 | 37,500 | 347,500 |  |  |  |
|  |  |  | Total Cost | 212,000 | 452,250 | 193,250 | 857,500 |  |  |  |
|  |  |  | Unit Cost | $ 212.00 | $ 150.75 | $ 386.50 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  | 4. |  | New SP | $ 318.00 | $ 226.13 | $ 579.75 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  | 5. |  | Explanation of differences | |  |  |  |  |  |  |
|  |  |  | Management actions |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Question 2** | | |  |  |  |  |  |  |  |  |
|  | 1. |  | Sell Price | $ 50.00 |  | B/E (Units) | FC | = | 936,000 |  |
|  |  |  | Var Cost | $ 39.60 |  |  | CM |  | $ 10.40 |  |
|  |  |  | Cont Marg | $ 10.40 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | = | 90,000 | units |
|  |  |  | Fix Costs | 936,000 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  | 2. |  |  |  |  | B/E ($) |  |  | $ 4,500,000 |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  | 3. |  |  |  |  | Margin of Safety | |  | Plan - B/E |  |
|  |  |  |  |  |  |  |  | = | 120,000-90000 | |
|  |  |  |  |  |  |  |  | = | 30,000 | units |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  | 4. | (i) | Required Profit | 130,000 |  | Required Sales | | = | FC + Req Profit | |
|  |  |  |  |  |  |  |  |  | CM |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | = | 936,000+130,000 | |
|  |  |  |  |  |  |  |  |  | 10.40 |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | = | 1,066,000 |  |
|  |  |  |  |  |  |  |  |  | 10.40 |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | 102,500 | units |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  | (ii) | Req NPAT | $ 140,000 |  | Required Sales | | = | 936,000+200,000 | |
|  |  |  | Req NPBT | 140,000/(1-.3) | |  |  |  | 10.40 |  |
|  |  |  | = | $ 200,000 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | = | 109,231 | units |
|  |  |  |  |  |  |  |  |  |  |  |
|  | 5. |  | Direct Labour | Increase $1.00 | | B/E (Units) | FC | = | 936,000 |  |
|  |  |  | Conrtribution Margin | Decrease $1.00 | |  | CM |  | $ 9.40 |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | = | 99,574.47 | units |
|  |  |  |  |  |  |  |  | = | 99,575 | units |
|  |  |  |  |  |  |  |  |  |  |  |
|  | 6. |  | Selling Price must increase by $1.00 to maintain CM | | | |  |  |  |  |
|  |  |  | Required Selling Price = | $ 51.00 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  | 7. | (i) | Change in Variable Costs = | | $ 2.40 | (Mats increase $5.00, Sell Costs decrease $2.60) | | | | |
|  |  |  | New Variable Costs |  | $ 42.00 | per unit |  |  |  |  |
|  |  |  | Total Variable costs (40,000 units) | | $1,680,000 |  |  |  |  |  |
|  |  |  | New Inspection Costs |  | $ 32,000 |  |  |  |  |  |
|  |  |  | Total Relevant Costs |  | $1,712,000 |  |  |  |  |  |
|  |  |  | Proposed Revenue |  | $1,900,000 |  |  |  |  |  |
|  |  |  | Profit |  | $ 188,000 |  |  |  |  |  |
|  |  |  | **Order should be accepted** | |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  | (ii) | Loss of 20,000 units = | 20,000 x CM |  |  |  |  |  |  |
|  |  |  |  | 20,000 x $10.40 | |  |  |  |  |  |
|  |  |  | Profit Foregone | $ 208,000 |  |  |  |  |  |  |
|  |  |  | Profit from Order | $ 188,000 |  |  |  |  |  |  |
|  |  |  | Net Loss | $ (20,000) |  |  |  |  |  |  |
|  |  |  | **Order should not be accepted** | |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  | **Question 3** | | |  |  |  |  |  |  |  |
|  |  |  |  | Metals | Plastics | Concrete | Total |  |  |  |
|  |  |  | Selling Price | 50 | 40 | 50 |  |  |  |  |
|  |  |  |  | 2500 | 4375 | 4000 |  |  |  |  |
|  |  |  | Sales | 125,000 | 175,000 | 200,000 | 500,000 |  |  |  |
|  |  |  | Cost of goods sold | 90,000 | 131,250 | 150,000 | 371,250 |  |  |  |
|  |  |  | Gross Margin | 35,000 | 43,750 | 50,000 | 128,750 |  | 128,750 |  |
|  |  |  | Less operating expenses | |  |  |  |  |  |  |
|  |  |  | Selling | 17,500 | 35,000 | 32,500 | 85,000 |  |  |  |
|  |  |  | Administration | 12,500 | 25,000 | 22,500 | 60,000 |  |  |  |
|  |  |  | Total operating expenses | 30,000 | 60,000 | 55,000 | 145,000 |  | 145,000 |  |
|  |  |  | Net profit (loss) | 5,000 | -16,250 | -5,000 | -16,250 |  | -16,250 |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  | 1. |  | **Sales** | 125,000 | 175,000 | 200,000 | 500,000 |  |  |  |
|  |  |  | **Variable Costs** |  |  |  |  |  |  |  |
|  |  |  | Production | 37,500 | 43,750 | 40,000 | 121,250 |  | 371,250 |  |
|  |  |  | Selling | 6,250 | 8,750 | 10,000 | 25,000 |  |  |  |
|  |  |  | Tot Var Costs | 43,750 | 52,500 | 50,000 | 146,250 |  |  |  |
|  |  |  | **Cont Margin** | 81,250 | 122,500 | 150,000 | 353,750 |  | 109,000 |  |
|  |  |  | Direct Fixed |  |  |  |  |  |  |  |
|  |  |  | Production | 10,000 | 35,000 | 50,000 | 95,000 |  |  |  |
|  |  |  | Selling | 18,500 | 18,000 | 23,500 | 60,000 |  |  |  |
|  |  |  | Tot Dir Fix Costs | 28,500 | 53,000 | 73,500 | 155,000 |  |  |  |
|  |  |  | **Dir Segment Margin** | 52,750 | 69,500 | 76,500 | 198,750 |  |  |  |
|  |  |  | Attrib Cost - Prod | 8,000 | 10,000 | 6,000 | 24,000 |  |  |  |
|  |  |  | **Segment Margin** | 44,750 | 59,500 | 70,500 | 174,750 |  |  |  |
|  |  |  | **Less Common Costs** |  |  |  |  |  |  |  |
|  |  |  | Production |  |  |  | 131,000 |  |  |  |
|  |  |  | Administration |  |  |  | 60,000 |  |  |  |
|  |  |  | Tot Common Costs |  |  |  | 191,000 |  |  |  |
|  |  |  | **Net Profit** |  |  |  | $(16,250) |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  | 2. |  | Production Manager's comments | |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  | 3. |  | Total Sales | 125,000 | 175,000 | 200,000 |  |  |  |  |
|  |  |  | Unit SP | 50 | 40 | 50 |  |  |  |  |
|  |  |  | No of Units | 2,500 | 4,375 | 4,000 |  |  |  |  |
|  |  |  | **Contribution Margin per Unit** | |  |  |  |  |  |  |
|  |  |  |  | $ 32.50 | $ 28.00 | $ 37.50 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | Maximum Profit increase if make Concrete because has the highest | | | | |  |  |  |
|  |  |  | contribution per unit. |  |  |  |  |  |  |  |
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