**2006 – 2007**

**ACY 1112 Suggested Solution**

*Problem 1*

( 1 )

Fixed Manufacturing Overhead per product

= 200,000/10,000

= $20

|  |  |  |
| --- | --- | --- |
|  | Absorption Costing | Variable Costing |
|  | $ | $ |
| Direct Materials | 15 | 15 |
| Direct Labor | 5 | 5 |
| Variable Manufacturing Overhead | 2 | 2 |
| Fixed Manufacturing Overhead | 20 | -- |
| Unit Product Cost |  42  |  22  |

( 2 )

|  |
| --- |
| BBA Corporation |
| Income Statement for the year using absorption costing |
|  | $ | $ |
| Sales |  | 540,000 (9,000\*$60) |
| Less: Cost of Goods Sold |  |  |
|  Opening Stock | 0 |  |
| Add Cost of Goods Manufactured | 420,000(10,000\*$42) |  |
| Less Closing Stock | 42,000(1,000\*$42) | 378,000 |
| Gross Margin |  | 162,000 |
| Less: Expenses |  |  |
|  Variable Selling and Administrative | 36,000(9,000\*$4) |  |
|  Fixed Selling and Administrative | 70,000 | 106,000 |
| Net Operating Income |  |  56,000  |

( 3 )

|  |
| --- |
| BBA Corporation |
| Income Statement for the year using variable costing |
|  | $ | $ |
| Sales |  | 540,000(90,000\*$60) |
| Less Variable Expenses |  |  |
|  Add Variable Cost of Goods Sold | 198,000(9,000\*$22) |  |
|  Variable Selling and Administrative | 36,000(9,000\*$4) | 234,000 |
| Contribution Margin |  | 306,000 |
| Less Fixed Expenses |  |  |
|  Fixed Manufacturing Overhead | 200,000 |  |
|  Fixed Selling and Administrative | 70,000 | 270,000 |
| Net Operating Income |  |  36,000  |

( 4 )

|  |
| --- |
| BBA Corporation |
| Statement to reconcile the difference in net operating income |
|  | $ |
| Variable Costing Net Operating Income | 36,000 |
| Add Fixed Manufacturing Overhead Cost deferred in Inventory under Absorption Costing | 20,000(1000\*$20) |
| Absorption Costing Net Operating Income |  56,000  |

*Problem 2*

Part A

( 1 )

|  |  |
| --- | --- |
|  | $ |
| Direct Materials | 20 |
| Direct Labor | 20 |
| Variable Manufacturing Overheads | 15 |
| Fixed Manufacturing Overheads | 5 |
| Relevant Unit Product Cost  |  60  |

( 2 )

|  |  |
| --- | --- |
|  | $ |
| Increase in Product Cost | (10,000) |
| Additional Contribution Margin | 5,000 |
| Net Disadvantages |  (5,000)  |

( 3 )

When there is zero net advantage, the maximum amount the company is willing to pay

= $60 + ($5,000/1,000)

= $65

Part B

( 1 )

|  |  |  |
| --- | --- | --- |
|  | $ | $ |
| Selling Price |  | 80 |
| Less Expenses |  |  |
|  Direct Materials | 40 |  |
|  Direct Labor | 10 |  |
|  Variable Manufacturing Overhead | 5 |  |
|  Variable Selling & Administrative Overhead | 5 | (60) |
| Contribution Margin |  |  20  |

( 2 )

|  |  |  |
| --- | --- | --- |
|  | $ | $ |
| Selling Price |  | 120 |
| Less Direct Materials | 40 |  |
|  Direct Labor | 10 |  |
|  Variable Manufacturing Overhead | 5 |  |
|  Variable Selling & Administrative | 10 | 65 |
| Contribution Margin of goods sold to regular customers |  |  55  |

In order to maintain the normal contribution margin of $25, the minimum acceptable price per unit for the special order

= $60 + $55

= $115

Part C

( 1 )

|  |  |  |  |
| --- | --- | --- | --- |
| Product Details |  | Product |  |
|  | **A** | **B** | **C** |
| Selling Price | $75 | $70 | $80 |
| Variable Cost | $55 | $55 | $70 |
| Contribution Margin | $20 | $15 | $10 |
| Mixing Minutes Required (per unit) | 2 | 5 | 2 |
| Contribution Margin (per minute) | $10 | $3 | $5 |
| Demand (units) | 400 | 100 | 200 |
| Mixing Minutes Required (total) | 800 | 500 | 400 |

Since Product B has the lowest contribution margin per mixing minute, part of its production has to be given up due to limited production facility.

Each product should be produced as follows

|  |  |  |
| --- | --- | --- |
| Product | Units Produced | Mixing Minutes Used |
| A | 400 units | 800 minutes |
| B | 60 units | 300 minutes |
| C | 200 units | 400 minutes |
|  |  | 1500 minutes |

The maximum amount of money the company will be willing to pay for one additional hour is $3 x 60 = $180, because the maximum the company will earn in the additional hour is the contribution margin of product

B only.

*Problem 3*

|  |
| --- |
| Ellis Company |
| Statement of Cashflows for the year ended December 31, Year 2 |
|  | $ | $ |
| Operating activities: |  | 33,000 |
| Net income |  |  |
| Adjustments to convert net income to cash basis |  |  |
| Depreciation of plant and equipment | 2,000 |  |
| Loss on disposal of long-term investment | 2,500 |  |
| Decrease in accounts receivable | 2,000 |  |
| Increase in inventory | (7,000) |  |
| Decrease in accounts payble | (4,000) |  |
| Decrease in accrued liabilities | (6,000) |  |
| Decrease in deferred income taxes | (5,000) | (15,500) |
| Net cash provided by operating activities |  |  17,500  |
|  |  |  |
| Investing activities: |  |  |
| Proceeds from sale of long-term investment | 35,500 |  |
| Additions to plant and equipment | (28,000) |  |
| Net cash provided by investing activities |  |  7,500  |

|  |  |  |
| --- | --- | --- |
| Financing activities: |  |  |
| Increase in bonds payable | 15,000 |  |
| Cash dividend paid | (25,000) |  |
| Net cash used in financing activities |  | (10,000) |
| Net increase in cash and cash equivalent |  | 15,000 |
| Cash and cash equivalent, at the beginning |  | 30,000 |
| Cash and cash equivalent, at the end |  |  45,000  |

*Problem 4*

Activity Rates:

Cleaning - $581600/72700 hours = $8/hour

Job Support - $124200/ 5400 jobs = $23/job

Client Support - $20500/760 clients = $26.97/client

( 2 )

|  |  |
| --- | --- |
| Customer Margin |  |
|  | $ |
| Selling Price | 1600 |
| Less: Cleaning ($8\*62) | (496) |
| Job Support($23\*31) | (713) |
|  Client Support($26.97\*1) | (27) |
|  |  364.03  |

( 3 )

Predetermined Overhead Rate

= $726,300 / 72,700 hours

= $9.99 per hour

|  |  |
| --- | --- |
|  | $ |
| Selling Price | 1,600 |
| Less: Expenses | (619) |
| Customer Margin |  980.62  |

*Problem 5*

No suggested solution is provided as this question is out of syllabus.