**BUC-0102 - Accounting and Management Control II**

**Exercises chapter 7**

**Exercise 1:**

Dunn Company produces two products, Fred and Barney. Overhead has traditionally been allocated on the basis of direct labor hours. Dunn recently sat up 3 activity centers to implement ABC costing. Information concerning this follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Activity Centers | Estimated Activity | | Estimated Cost |
| Fred | Barney |
| Machine setups | 12 setups | 36 setups | $ 96,000 |
| Assembly | 2,000 square feet | 3,000 square feet | 180,000 |
| Packaging | 600 crates | 400 crates | 34,000 |
| Direct labor hours | 2 hours per unit | 3.3 hours per unit |  |
| Estimated volume | 700 units | 2,000 units |  |

Determine the overhead to be allocated per unit to each product under ABC Method.

|  |  |  |  |
| --- | --- | --- | --- |
| **Activity center** | **Total** | **Activity level** | **ABC** |
| Machine setups | 48 | 96,000 | **96,000 / 48 = 2,000** |
| Assembly | 5,000 | 180,000 | **36** |
| packaging | 1,000 | 34,000 | **34** |

|  |  |  |
| --- | --- | --- |
|  | **Fred** | **Barney** |
| Machine setups | 12\*2,000=24,000 | 36\*2000=72,000 |
| Assembly | 2000\*36=72,000 | 3,000\*36=108,000 |
| Packaging | 600\*34=20,400 | 400\*34=13,600 |
| Total manufacturing overhead | **116,400** | **193,600** |

**Exercises 2:**

The Markowitz Company produces three products: Alpha, Beta, and Zeba. The company expects to produce 1,000 Alphas, 3,400 Betas, and 600 Zebas in fiscal year 2000.

Budgeted (Estimated) Overhead Data For 1999:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item** | **Machine**  **Setups** | **Engineering Changes** | **Inspect. & Packing** | **Total Overhead ’s** |
| Overhead Dollars: | $170,000 | $320,000 | $470,000 | $960,000 |
|  |  |  |  |  |
| Activity Levels: | 34 setups | 400 Eng. Chgs | 5,000 units |  |

Based on an analysis of the three overhead activities, it was estimated that the three products would require these activities as follows in fiscal year 2000:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Activity** | **Alphas** | **Betas** | **Zebas** | **Overall Totals** |
| Machine Setups | 5 setups | 9 setups | 20 setups | 34 setups |
|  |  |  |  |  |
| Engineering Changes | 140 changes | 8 changes | 252 changes | 400 changes |
|  |  |  |  |  |
| Inspection & Packing\* | 1,000 units | 3,400 units | 600 units | 5,000 units |

\*All units of each product are individually inspected and packed.

The direct material and direct labor costs included in the three products are as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| **Item** | **Alphas** | **Betas** | **Zebas** |
| Direct Material (per unit) | $680 | $300 | $730 |
| Direct Labor (per unit) | $900 | $560 | $850 |

**Required:**

1. Calculate the activity cost rates for (1) setups, (2) engineering changes and (3) inspection and packing.
2. Cost out the three products using an activity-based costing system.

**Exercise 3:**

The Columbus Company produces only two products: a major computer part and cell phones. The company uses a normal cost system and overhead costs are currently allocated using a plant-wide overhead rate based on direct labor hours. Outside cost consultants have recommended, however, that the company use activity-based costing to charge overhead to products. The company expects to produce 4,000 computer parts and 2,000 cell phones in 1999. Each computer part requires two direct labor hours to produce and each cell phone requires one-half hour to produce. The direct material and direct labor costs included in the two products are as follows:

|  |  |  |
| --- | --- | --- |
| **Item** | Computer Part | Cell-Phone |
| **Direct Material (per units)** | $30 | $17 |
| **Direct Labor (per unit)** | $16 | $ 4 |

Budgeted (Estimated) Total Factory Overhead Data For 1999:

|  |  |  |
| --- | --- | --- |
| **Activity** | **Budgeted Overhead Dollars** | **Estimated Volume Level** |
| **Production Setups** | $80,000 | 20 setups |
| **Material Handling** | $70,000 | 5,000 lbs. |
| **Packaging and Shipping** | $120,000 | 6,000 boxes |
| **Total Factory Overhead** | $270,000 |  |

Based on an analysis of the three overhead activities, it was estimated that the two products would require these activities as follows in 1999:

**Required:**

1. Calculate the cost of each product using a plant-wide rate based on direct labor hours.
2. Calculate the activity cost rates for (a) setups, (b) material handling and (c) packaging and shipping.