Examination: 5075 „Management VI" (Management Accounting) **Summer Term 2008**

Examiner: Prof. Dr. Barbara Schöndube-Pirchegger

Examination questions: 5

Name: _____

Matriculation number: _____ **Date:** _____

The following aids can be used: a calculator in accordance with the instructions given by the Board of Examiners and a dictionary.

Hint: A maximum of 100 points can be reached from solving the 5 assignments below. Use the space /tables provided to enter your answers.

Assignment 1: Job Costing (20 Points)

The Dandres Company uses normal costing at its Los Angeles plant. The plant has a Machining Department and an Assembly Department. Its job-costing system has two direct-cost categories (direct materials and direct manufacturing labor) and two manufacturing overhead (OH) cost pools (the Machining Department overhead, allocated to jobs based on actual machine-hours, and the Assembly Department overhead, allocated to jobs based on actual direct manufacturing labor costs). The 2007 budget for the plant was:

	Machining Department	**Assembly Department**
Manufacturing overhead	$2,000,000	$3,600,000
Direct manufacturing labor cost	$1,800,000	$2,200,000
Direct manufacturing labor-hours	120,000	250,000
Machine-hours	50,000	200,000

Required

a) Compute the budgeted manufacturing overhead rate for each department.

Machining Department: _____

Assembly Department: _____

b) During February, the job-cost record for Job 494 contained the following:

	Machining Department	**Assembly Department**
Direct materials used	$45,000	$70,000
Direct manufacturing labor costs	$14,000	$15,000
Direct manufacturing labor-hours	1,000	1,500
Machine-hours	2,000	1,000

Compute the total manufacturing overhead costs allocated to Job 494.

Machining Department OH allocated: _____

Assembly Department OH allocated: _____

Total OH allocated: _____

c) At the end of 2007, the actual results were the following:

	Machining Department	Assembly Department
Manufacturing overhead	$2,300,000	$3,700,000
Direct manufacturing labor cost	$2,000,000	$2,400,000
Direct manufacturing labor-hours	140,000	300,000
Machine-hours	55,000	200,000

Compute the over- or underallocated manufacturing overhead for each department.

Machining Department: _____

Assembly Department: _____

Assignment 2: Variance Analysis (20 Points)

McGrownland Company manufactured 1,000 units during September with a total flexible budget manufacturing overhead of $12,400. However, while manufacturing the 1,000 units the microcomputer that contained the month's cost information broke down. With the computer out of commission, the accountant has been unable to complete the variance analysis report. The information missing from the report is lettered in the following set of data:

Variable overhead:

Standard cost per unit: 0.4 labor hours at $4.2 per hour
Actual costs: $2,100 for 376 hours
Flexible budget: a
Total flexible-budget variance: b
Variable overhead spending variance: c
Variable overhead efficiency variance: d

Fixed overhead:

Budgeted costs: e
Actual costs: f
Flexible-budget variance: $500 favorable

Required

Compute the missing elements in the report represented by the lettered items. Do not forget to state whether the variances are favourable (F) or unfavourable (U).

a = _____ b = _____ c = _____

d = _____ e = _____ f = _____

Assignment 3: Allocation of Support-Department Cost (20 points)

The Helmes Company has two products. Product 1 is manufactured entirely in Department X. Product 2 is manufactured entirely in Department Y. To produce these two products, the Helmes Company has two support departments: Materials Handling and Power Generation. The following data are available for May 2008:

	SUPPORT DEPARTMENTS		OPERATING DEPARTMENTS	
	Materials Handling	Power Generation	X	Y
Budgeted costs incurred before any interdepartment cost allocations	$200,000	$110,000		
Support work supplied by Materials Handling Department	-	10%	60 %	30 %
Support work supplied by Power Generation	20 %	-	50 %	30 %

Required:

1. **Allocate the support-departments costs to the operating departments using the direct method.**

   Support-department costs allocated to Department X: _____

   Support-department costs allocated to Department Y: _____

2. **Allocate support departments costs to the operating departments based on the step-down method. Allocate the cost of the Power Generation Department first.**

   Support-department costs allocated to Department X: _____

   Support-department costs allocated to Department Y: _____

Assignment 4: Process Costing (20 Points)

Consider the following data for the Denver Assembly Division of Parker Company: The Denver Assembly Division uses the weighted-average method of process costing.

	Physical Units	Direct Materials	Conversion Costs
Beginning work in process (April 1)	8	$ 4,933,600	$ 910,400
Started in April 2007	50		
Completed during April 2007	46		
Ending work in process (April 30) [a]	12		
Total costs added during April 2007		$32,200,000	$13,920,000

[a] *Degree of completion: direct materials, 60%; conversion costs, 30%.*

Required

1) **Compute equivalent units for direct materials and conversion costs.**

	Direct Materials	Conversion Costs
Equivalent units		

2) **Calculate cost per equivalent unit for direct materials and conversion costs, summarize total costs to account for, and assign total costs to units completed and to units in ending work in process.**

		Direct Materials	Conversion Costs
Cost per equivalent unit			
Total Costs to account for			
Assignment of costs to units completed			
Assignment of costs to units in ending work in process			

Assignment 5: Activity-Based Costing (ABC) (20 Points)

Idaho Potatoes (IP) processes potatoes into potato cuts at its highly automated Pocatello plant. It sells potato cuts to the retail consumer market and to the institutional market, which includes hospitals, cafeterias, and university dormitories. IP's simple costing system has a single direct-cost category (direct materials, which are the raw potatoes) and a single indirect-cost pool (production support). Support costs are allocated on the basis of pounds of potato cuts processed. Support costs include packaging materials. The 2007 total actual costs for

producing 1,000,000 pounds of potato cuts (900,000 for the retail market and 100,000 for the institutional market) are:

Direct materials used	$150,000
Production support	$983,000

The simple costing system does not distinguish between potato cuts produced for the retail and the institutional markets.

At the end of 2007, IP unsuccessfully bid for a large institutional contract. Its bid was reported to be 30% above the winning bid. This feedback came as a shock because IP included only a minimum profit margin on its bid. Moreover, the Pocatello plant was acknowledged as the most efficient in the industry.

As a result of its review process of the lost contract bid, IP decided to explore ways to refine its costing-system. First, it identified that $188,000 of the $983,000 pertaining to packaging materials could be traced to individual jobs ($180,000 for retail and $8,000 for institutional). These costs will now be classified as direct materials. The $150,000 of direct materials used were classified as $135,000 for retail and $15,000 for institutional. Second, it used ABC to examine how the two products (retail potato cuts and institutional potato cuts) used indirect support resources. The finding was that three activity areas could be distinguished.

- **Cleaning Activity Area** – IP uses 1,200,000 pounds of raw potatoes to yield 1,000,000 pounds of potato cuts. The cost-allocation base is pounds of raw potatoes cleaned. Costs in the cleaning activity area are $120,000.
- **Cutting Activity Area** – IP processes raw potatoes for the retail market independently of those processed for the institutional market. The production line produces (a) 250 pounds of retail potato cuts per cutting-hour and (b) 400 pounds of institutional potato cuts per cutting-hour. The cost-allocation base is cutting-hours on the production line. Costs in the cutting activity area are $231,000.
- **Packaging Activity Area** – IP packages potato cuts for the retail market independently of those packaged for the institutional market. The packaging line packages (a) 25 pounds of retail potato cuts per packaging-hour and (b) 100 pounds of institutional potato cuts per packaging-hour. The cost-allocation base is packaging-hours on the production line. Costs in the packaging activity area are $444,000.

Required

1. **Using the simple costing system, what is the cost per pound of potato cuts produced by IP?**

Cost per pound of potato cuts: _____

2. **Calculate the cost rate per unit of the cost driver in the (a) cleaning, (b) cutting, and (c) packaging activity areas.**

(a) Cost per driver unit in the cleaning activity: _____

(b) Cost per driver unit in the cutting activity: _____

(c) Cost per driver unit in the packaging activity: _____

3. Suppose IP uses information from its activity cost rates to calculate costs incurred on retail potato cuts and institutional potato cuts. **Using the ABC system, what is the cost per pound of (a) retail potato cuts and (b) institutional potato cuts?**

(a) Cost per pound of retail potato cuts: _____

(b) Cost per pound of institutional potato cuts: _____

4. **Comment on the cost difference between the two costing systems in 1 and 3. How might IP use the information in 3 to make better decisions?**

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