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Answer Key

Score _____

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ACCT 2102
EXAM 2
Spring 2014
(100 pts.)

Instructions:

1. This exam is open book, open notes. Sharing of materials is not permitted. The only electronic device permitted is the calculator that will be supplied.
2. You must show all work to receive any credit.
3. If you feel a problem is unclear, you may state your assumption in writing and give the best answer you can.
4. Make sure you have a cover sheet plus 7 numbered pages.



"As plant manager, what did you *think* you were going to be doing?"

I. (4 pts.)

The following information is given for Electric Prunes, Inc.

	SERVICE DEPTS.		PRODUCTION DEPTS.	
	A	B	1	2
Overhead costs before allocation	\$60,000	\$80,000	\$30,000	\$25,000
Proportions of service by A	-----	30%	50%	20%
Proportions of service by B	10%	----	60%	30%

Set up the equations that would be used in the first part of the reciprocal services allocation method.
DO NOT SOLVE THE EQUATIONS.

$$A = 60K + .1B$$

$$B = 80K + .3A$$

II. (5 pts.)

In manufacturing footballs, Morin Company's plant used 360 direct labor hours, 450 machine hours, and 23 setups. The following overhead costs were taken from the factory accounts:

	Overhead expenses:	Volume of activities:
Machining Center	\$175,000	25,000 machine hours
Setup Center	66,000	100 setups
Total	<u>\$241,000</u>	5,000 direct labor hours

The plant was using a factory-wide overhead rate based on direct labor hours. A new ABC system will use machine hours in the Machining Center and number of setups in the Setup Center as cost drivers.

By what amount would the amount of overhead costs assigned to footballs differ between the prior system and the ABC system? \$ 978

Prior system: $\frac{241K}{5K} \times 360 = \$17,352$

ABC system: $(\frac{175K}{25K} \times 450) + (\frac{66K}{100} \times 23) = \$18,330$

$$18,330 - 17,352 = 978$$

III. (5 pts.)

During the first quarter of 2014, Sager Co. plans to manufacture 580,000 units. Inventory at the end of the first quarter is to be equal to 30% of that quarter's production. Sales in the second quarter of 2014 are budgeted at 770,000 units. The inventory at the end of the second quarter is to be equal to 40% of the 600,000 units to be sold in the third quarter. Production for the second quarter should be 836,000 units.

$$\begin{aligned} & 770K + .4(600K) - .3(580K) \\ &= 770K + 240K - 174K \\ &= 836K \end{aligned}$$

IV. (9 pts.)

Dankohn Corp. has four categories of overhead, with expected costs for next year as follows:

Maintenance	\$750,000
Materials Handling	260,000
Inspection	470,000
Setups	245,000

Job #199 is scheduled for next year and has the following estimates:

Direct materials	\$48,000
Direct labor (2,000 hours)	\$56,000
Number of inspections	95
Number of setups	88
Number of machine hours	4,500
Number of materials moves	185

Sixty thousand direct labor hours are budgeted for next year. Expected activity for the activity-based cost drivers that could be used are:

Machine hours	34,000
Material moves	18,000
Setups	31,000
Quality inspections	37,000

Determine the total cost of Job #199 if activity-based costing is used: \$ 207,839

$$48K + 56K + \frac{750K}{34K}(4500) + \frac{260K}{18K}(185) + \frac{470K}{37K}(95) + \frac{245K}{31K}(88)$$

$$= 207,839$$

V. (5 pts.)

JLP Distributors, a furniture wholesaler, had 9,500 sofas on hand at 12/31/17. Its policy for 2018 will be to maintain a finished goods inventory equal to 60 percent of the next month's budgeted sofa sales. The sales budget for part of 2018 follows:

January	29,000 sofas
February	31,000 sofas
March	20,000 sofas
April	15,000 sofas
May	17,000 sofas
June	18,000 sofas

Determine the purchases budget for the first quarter of 2018: 79,500

$$\begin{aligned} \text{Needed for 1st Qtr. Sales} &= 29K + 31K + 20K = 80,000 \\ + \text{Desired EI} : 15K \times .6 &= 9,000 \\ - \text{OI} &= (9,500) \\ &= 79,500 \end{aligned}$$

VI. (8 pts.)

Wooly Jumbuck Corp. has estimated that a 30 percent probability exists that sales volume for next year will be 50,000 units with a selling price of \$12 per unit. A 70 percent probability exists that sales will be 60,000 units with a selling price of \$14 per unit. Variable cost per unit is estimated at \$7 (with a probability of 25 percent) or \$8 (with a probability of 75 percent). Fixed costs for the next year have been budgeted at \$75,000.

Compute the expected profit to be budgeted for the next year: \$ 251,250

<u>Event</u>	<u>c M</u>	<u>Prob.</u>	<u>EV</u>
$p=12, v=7$	$50K(12-7) = 250K$	$.3 \times .25 = .075$	$250K \times .075 = 18,750$
$p=12, v=8$	$50K(12-8) = 200K$	$.3 \times .75 = .225$	$200K \times .225 = 45,000$
$p=14, v=7$	$60K(14-7) = 420K$	$.7 \times .25 = .175$	$420K \times .175 = 73,500$
$p=14, v=8$	$60K(14-8) = 360K$	$.7 \times .75 = .525$	$360K \times .525 = \underline{189,000}$
			$\underline{326,250}$

VII. (7 pts.)

Chumbawumba Company has two service departments and two producing departments. Information for each department follows:

	<u>Service Departments</u>		<u>Producing Departments</u>	
	<u>A</u>	<u>B</u>	<u>1</u>	<u>2</u>
Budgeted overhead	\$77,000	\$62,000	\$250,000	\$320,000
Machine hours	--	1,000	8,800	11,200
Direct labor hours	1,400	1,900	17,000	22,000
Square feet occupied	850	500	3,500	9,000

A's costs are allocated based on square feet occupied and B's costs are allocated based on machine hours. Predetermined overhead rates for producing departments are based on direct labor hours.

Allocate the service department costs using the *direct* method. Calculate the predetermined overhead rates for the producing departments.

Predetermined overhead rate for Producing Dept. 1 = \$ 17.58 / hr.
 Predetermined overhead rate for Producing Dept. 2 = \$ 18.64 / hr.

<u>Costs</u>	<u>A</u>	<u>B</u>	<u>1</u>	<u>2</u>
	<u>77K</u>	<u>62K</u>	<u>250K</u>	<u>320K</u>

From A:

$77K \times \frac{3500}{12,500} \cdot \frac{9K}{12,500}$	<u>21,560</u>	<u>55,440</u>
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From B:

$62K \times \frac{8800}{20K} \cdot \frac{11200}{20K}$	<u>27,280</u>	<u>34,720</u>
	<u>298,840</u>	<u>410,160</u>
	<u>÷ 17K</u>	<u>÷ 22K</u>
	<u>= 17.58</u>	<u>= 18.64</u>

VIII. (10 pts.)

Three Dog Night, Inc. uses weighted-average process costing. Materials are added at the beginning of the process; conversion costs are incurred uniformly. 5,000 units were in beginning work in process. These units were 40% complete. During the period, the company began working on an additional 81,000 units, and completed the period with 13,000 units that were 70% complete in ending work in process.

Costs attached to beginning inventory were \$7,000 for materials and \$3,600 for conversion costs. Costs added during the period were \$69,400 for materials and \$19,960 for conversion.

$$\begin{array}{l} \text{Cost of goods completed} = \$ \underline{\hspace{2cm}} \\ \text{Cost of the ending work in process} = \$ \underline{\hspace{2cm}} \end{array}$$

$$\# \text{ completed} = 5K + 81K - 13K = 73K$$

	<u>DM</u>	<u>CC</u>
# completed	73K	73K
+ en in EWIP	<u>13K</u>	<u>.7(13K) = 9,100</u>
	86K	82,100

	<u>$\frac{69,400 + 7K}{86K}$</u>	<u>$\frac{19,960 + 3600}{82,100}$</u>
Unit costs	= \$.89	= \$.29

$$FG = 73K (.89 + .29) = 73K (\$1.18) = \$86,140$$

$$E. WIP = 13K (.89) + 9100 (.29) = \$14,209$$

IX. (10 pts.)

Data for June are as follows for Tazrox Corp., which uses FIFO process costing:

	<u>Units</u>
Beginning work in process	5,600
Units started in process	114,000
	<u>Costs</u>
Beginning work in process:	
Materials	\$18,500
Conversion	\$3,700
June's costs:	
Materials	\$444,300
Conversion	190,700

All materials are added at the beginning of the process. The beginning work in process was 20 percent complete for conversion costs. During June, 116,200 units were completed. The ending work in process was 30 percent complete as to conversion costs.

Determine the cost of the ending work in process: \$ 14,933

$$\# \text{ in EWIP} = 5600 + 114K - 116,200 = 3400$$

$$\# \text{ S\&C} = 116,200 - 5600 = 110,600$$

	<u>DM</u>	<u>CC</u>
e.u. to finish BWIP	0	<u>5600(-.8) = 4,480</u>
# S&C	110,600	110,600
e.u. in EWIP	<u>3,400</u> 114K	<u>3400(-.3) = 1,020</u> 116,100

Unit Costs	<u>444,300</u> 114K = \$ 3.90	<u>190,700</u> 116,100 = \$ 1.64
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$$E.WIP = 3400(3.90) + 1020(1.64) = 14,933$$

X. (10 pts.)

Smithville Electronics sells whatchamacallits. The whatchamacallits are sold on account, and collections in cash are as follows: 30% in the month of sale, 50% the next month, 18% in the second month after the sale, and 2% uncollectible. Accounts receivable on January 1 is \$40,000 and only represents sales from December, the first month in which they were in business. The forecast sales for the coming year are:

January	\$100,000
February	90,000
March	120,000
April	140,000
May	150,000
June	160,000

Determine the forecast accounts receivable balance at the end of January: \$ 81,429

$$40K = .7 \times \text{Dec. Sales} \Rightarrow \text{Dec. Sales} = 57,143$$

$$\begin{aligned} 4 & \text{ AIR at } 12/31 = [57,143 \times (.18 + .02)] + 100K \times (.5 + .18 + .02) \\ & = 11,429 + 70,000 = 81,429 \end{aligned}$$

Determine the forecast cash collections for February: \$ 87,286

$$\begin{aligned} 4 & (57,143 \times .18) + (100K \times .5) + (90K \times .3) \\ & = 10,286 + 50,000 + 27,000 = 87,286 \end{aligned}$$

For April through June, the total forecast amount of uncollectible sales is: \$ 9,000

$$2 \quad (140K + 150K + 160K) \times .02 = 9K$$

XI. (27 pts.) -- Multiple Choice: Circle the one best answer for each question.

1. The dual-rate method of cost allocation:

- a. allocates variable costs on the basis of predetermined percentages.
- b. allocates fixed costs on the basis of actual activity.
- c. allocates fixed and variable costs differently.
- d. uses the direct method and step method simultaneously.
- e. Both (a) and (d) are true.

2. In the reciprocal method of service center cost allocation, the number of equations equals the:

- a. number of service centers.
- b. number of operating centers.
- c. total of the number of service and operating centers.
- d. number of service centers minus the number of operating centers.
- e. number of operating centers minus the number of service centers.

3. Revenues generated by a service center should be:
- allocated to all other service centers.
 - assigned to the largest operating department.
 - offset against the service center's costs.
 - allocated to all operating departments using the step method only.
 - ignored.
4. For the weighted average method of process costing, the:
- total cost of completed units equals the total cost of ending work in process.
 - unit cost of materials equals the unit cost for conversion costs.
 - equivalent units for conversion costs are higher than the equivalent units for materials.
 - flow of physical units produces the same results as the computations for equivalent units.
 - None of the above is true.
5. CCC Co. had 5,000 units in beginning work in process, 60% complete. The company completed 75,000 units during the period and at the end of the period it had 6,000 units in process, 90% complete. How many units were started and completed during the period?
- 72,000
 - 70,600
 - 70,000
 - 71,000
 - 83,400
- 75K - 5K*
6. With activity based costing:
- product cross-subsidization is rampant.
 - cost drivers reflecting both complexity and volume are generally used.
 - both preliminary and primary stages of allocation must be made.
 - at least four cost drivers must be used.
 - non-manufacturing costs must be assigned using volume-based cost drivers.
7. Product cross-subsidization occurs when:
- a high-volume, low complexity product is overcosted, while a low volume, high complexity product is undercosted.
 - activity based costing is used instead of volume based costing.
 - both preliminary and primary stage cost drivers are used.
 - unit level activities are misclassified as batch level activities.
 - companies produce products that are very similar to one another.
8. Which one of the following will not appear on the cash budget:
- interest received.
 - dividends paid.
 - depreciation expense.
 - borrowings.
 - note payable repayments.
9. Which one of the following statements is true?
- Companies try to promote budget slack.
 - All responsibility centers are also profit centers.
 - A materials purchases budget should only be expressed in units of materials, not dollars.
 - A budgeted income statement is an example of an operating budget.
 - A materials purchases budget is developed after a production budget.