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ACCT 2102
EXAM 3
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.

I know by this time
variance analysis may be getting
on your nerves. Stick with it,
though — Look what it did for me.



Before Variance
Analysis



After
Variance Analysis

I. (4 pts.)

GT Iron Works produces a high-tech cattle prod called the "Tech Shaft", with engineering standards of 15 hours of direct labor at \$12.50/hour to complete each "Shaft". It produced 1200 "Shafts" and had actual labor costs of \$235,000 for December. In reviewing the time sheets, the company tallied 18,250 direct labor hours.

Determine the Labor Efficiency Variance for the month of December: \$ 3125 U

$$12.50 [18,250 - 1200(15)]$$

$$= 12.50 (18,250 - 18,000)$$

$$= 3125 U$$

II. (5 pts.)

The following data pertains to the manufacture of cigars during October:

Total labor cost variance	\$18,000 unfavorable
Actual hours worked	9,000
Standard rate per hour	\$16
Labor rate variance	\$14,000 favorable

Determine the total standard hours allowed for October production: 7,000

$$18,000 U = 14,000 F + LEV \Rightarrow LEV = 32,000 U$$

$$32,000 = 16 (9000 - SH)$$

$$2000 = 9000 - SH$$

$$SH = 9000 - 2000 = 7K$$

III. (4 pts.)

Standards for the materials costs of one package of fireworks are as follows:

Materials (7 ounces @ \$4.00) \$28.00

During July, 800 packages were produced, 5,980 ounces were purchased at \$3.95 per ounce, and 5,550 ounces were used in production.

For July, compute the materials quantity variance: \$ 200 F

$$4 [5550 - 800(7)]$$

$$= 4 (5550 - 5600)$$

$$= 4 (-50)$$

$$= 200 F$$

IV . (4 pts.)

The following costs pertain to a component part manufactured by Lindfield Company:

Direct materials	\$ 2
Direct labor	5
Factory overhead	<u>20</u>
	<u>\$27</u>

Factory overhead is applied at \$1 per direct labor hour. Fixed capacity cost is 60% of applied factory overhead, and is not affected by a "make or buy" decision. It would cost \$23 per unit to buy the part from an outside supplier.

In the decision to "make or buy," what is the total relevant unit manufacturing cost to be considered? \$ 15

$$2 + 5 + .4(20) = 2 + 5 + 8 = 15$$

V . (6 pts.)

Pethel Company produced 10,000 units and sold 9,000 of them in 2015. Beginning inventory was zero. During the period, the following costs were incurred:

Indirect labor (variable)	\$10,000
Indirect materials (variable)	5,000
Other variable overhead	15,000
Fixed manufacturing overhead	30,000
Fixed administrative expenses	25,000
Fixed selling expenses	20,000
Variable selling expenses, per unit	25
Direct labor, per unit	20
Direct materials, per unit	35

1. Compute the dollar amount of ending inventory using variable costing: \$ 58,000

$$4 \quad \left(35 + 20 + \frac{10K}{10K} + \frac{5K}{10K} + \frac{15K}{10K} \right) (10K - 9K)$$

$$= (35 + 20 + 1 + .50 + 1.50) (1K)$$

$$= 58 (1K) = 58K$$

2. Compute the dollar amount of ending inventory using absorption costing: \$ 61,000

$$2 \quad 58K + \frac{30K}{10K} (1K) = 58K + 3K = 61K$$

VI. (7 pts.)

Jordan Company projects the following information for the coming year:

Sales	1,900 units
Production	2,000 units
Selling price per sewing machine	\$200
Total variable manufacturing cost	\$160,000
Total fixed manufacturing cost	\$60,000
Marketing and administrative cost	\$80,000
(40% variable based on sales)	

a. Determine the projected net income using absorption costing: \$ 91,000

$$\begin{aligned}
 & 1900(200) - \frac{160K + 60K}{2K}(1900) - 80K \\
 & = 380K - 209K - 80K \\
 & = 91K
 \end{aligned}$$

b. Determine the projected net income using variable costing: \$ 88,000

$$\begin{aligned}
 & 1900(200) - \frac{160K}{2K}(1900) - 60K - 80K \\
 & = 380K - 152K - 60K - 80K \\
 & = 88K
 \end{aligned}$$

VII. (8 pts.)

A company produces three products -- Good, Better, and Best -- as the result of joint processing plus separable processing after the split-off point. Records for the year show the following:

	Good	Better	Best	Total
Joint cost	--	--	--	\$720,000
Separable processing costs	\$120,000	\$90,000	\$50,000	--
Units produced	20,000	26,000	16,000	--
Units sold	18,000	15,000	13,000	--
Sales price	\$ 25	\$ 45	\$ 68	--

Compute the total cost of the ending inventory for each product, assuming no beginning inventory and using the NRV method for joint cost allocation.

Good: \$ 22,953

Better: \$ 169,776

Best: \$ 65,472

NRVs

$$\text{Good: } 20K(25) - 120K = 380K$$

$$\text{Better: } 26K(45) - 90K = 1080K$$

$$\text{Best: } 16K(68) - 50K = \frac{1038K}{2498K}$$

EI Cost

$$\text{Good: } \left[\frac{380K}{2498K}(720K) + 120K \right] \left(\frac{2K}{20K} \right) = 22,953$$

$$\text{Better: } \left[\frac{1080K}{2498K}(720K) + 90K \right] \left(\frac{11K}{26K} \right) = 169,776$$

$$\text{Best: } \left[\frac{1038K}{2498K}(720K) + 50K \right] \left(\frac{3K}{16K} \right) = 65,472$$

VIII . (5 pts.)

Garber Industries manufactures basketballs. The budgeted income statement for the year, before any special orders, is as follows:

	<u>Amount</u>	<u>Per Unit</u>
Sales	\$4,000,000	\$10.00 → 400K units
Cost of goods sold	<u>3,200,000</u>	<u>8.00</u>
Gross Profit	800,000	2.00
Selling expenses	<u>300,000</u>	<u>.75</u>
Operating income	\$500,000	\$1.25

Fixed costs included in the above data are \$1,200,000 in cost of goods sold and \$100,000 in selling expenses.

$$\Rightarrow V.CGS = 3.2m - 1.2m = 2m$$

A special order offering to buy 50,000 basketballs for \$7.50 each was made to Garber. There will be no additional selling expenses if the order is accepted.

Assuming Garber has enough capacity to manufacture 50,000 more basketballs, by what amount would operating income be increased or decreased as a result of accepting the special order? \$ 125K increase

$$\begin{aligned}\Delta Rev. &= 7.50 (50K) = 375K \\ V.CGS \text{ per unit} &= 2m / 400K = 5 \\ \Delta Cost &= 5 (50K) = 250K\end{aligned}$$

$$\text{IX . (4 pts.) } \Delta Profit = 375K - 250K = 125K$$

Klesko, Inc. has been experiencing the following costs when it produces 12,000 units of a subassembly:

Direct materials	\$108,000
Direct labor	72,000
Fixed overhead	100,000

A supplier offers to sell Klesko an identical product for \$18 per unit. The fixed overhead represents the cost of insurance, taxes and depreciation on the manufacturing plant allocated to this product on the basis of the number of square feet occupied by the manufacturing operation. Klesko has no alternative plans for use of this space.

Determine whether Klesko should continue to make the product or should buy the product.

$$\text{Relevant cost to make} = 108K + 72K = 180K$$

$$\text{Relevant cost to buy} = 18(12K) = 216K$$

$$\Rightarrow \$36K \text{ advantage to make.}$$

$$AID = \frac{50K - 10K}{10} (10) = 40K \Rightarrow BV = SV \Rightarrow \text{No gain/loss}$$

5

22

X. (12 pts.)

Consideration is being given to the purchase of a new asset costing \$50,000, with a useful life of 10 years, and a salvage value of \$10,000 at the end of 10 years. For the 10-year period, annual cash revenues are projected to increase by \$19,000 per year with related annual cash expenses of \$10,000 per year. The project would be depreciated using the straight line method. The company's cost of capital is 14%. The tax rate is 30%.

Compute the NPV of this purchase decision: \$ -8180

Item	Yr(s)	Amount	d.f.	PV
Investment	Now	50K	1	(50K)
SV	10	10K ± 0	.270	2700
Revenues	1-10	19K(1-.3) = 13,300	5.216	69,373
Cash Exp.	1-10	10K(1-.3) = 7K	5.216	(36,512)
Depr.	1-10	4K(.3) = 1200	5.216	6259

$$NPV = -8180$$

XI. (4 pts.)

Alcott Manufacturing plans to invest \$740,000 in new equipment. The equipment is expected to yield a cash inflow of \$400,000 before income tax each year for five years. Depreciation of \$148,000 is to be taken each year. The tax rate is 40%.

Payback period (to two decimal places) = 2.47 years

$$\frac{740,000}{400K(1-.4) + 148K(.4)} = \frac{740,000}{240K + 59,200} = \frac{740,000}{299,200} = 2.47$$

XII. (6 pts.)

Caruth Division wishes to know how profitable its operations were this year. A partial analysis shows plant investment at \$2.4 million, sales of \$1.2 million, and a residual loss (i.e., negative residual income) of \$36,000. Net income was 22% of sales.

a. Compute the ROI: 11 %

$$3 \quad \frac{.22(1.2m)}{2.4m} = \frac{264K}{2.4m} = .11$$

b. Find the imputed rate used in computing residual income: 12.5 %

$$3 \quad -36K = 264K - (X)(2.4m) \\ (X)(2.4m) = 300K \\ X = \frac{300K}{2.4m} = .125$$

XIII . (7 pts.)

At the beginning of 2014, Davidson, Inc. set the following standards:

Direct materials: 2.5 lbs./unit at a cost of \$3/lb.
 Direct labor: 3 hrs./unit at a cost of \$15/hr.

At the end of the year, the following information is available:

Direct materials purchased: 50,000 lbs. at a cost of \$175,000
 Direct materials used: 48,000 lbs.
 Direct labor cost: \$360,000
 Production: 25,000 units

The company computes variances as early as possible.

1) Compute the materials price variance: \$ 25,000 U

4
$$50K \left(\frac{175K}{50K} - 3 \right) = 50K (3.50 - 3) = 25K U$$

2) If the labor rate variance is \$40,000 favorable, compute the actual number of direct labor hours worked: 26,667

3
$$\begin{aligned} -40K &= AH \left(\frac{360K}{AH} - 15 \right) \\ -40K &= 360K - 15(AH) \\ -400K &= -15(AH) \end{aligned}$$

XIV . (3 pts.)

Drake Division has the following results for the year:

Sales	\$10,000,000
Division income	1,500,000
Assets	12,000,000

Calculate return on sales: 15%

$$\frac{1.5m}{10m} = .15$$

XV. (21 pts.) - Circle the one best answer for each of the following questions.

1. A standard price is the same as a(n):

- ☒ a. budgeted price
- ☐ b. actual price
- ☐ c. budgeted quantity
- ☐ d. favorable price
- ☐ e. actual rate

2. In some cases, the payback reciprocal can be used to estimate the:
- ☒ a. internal rate of return
 - b. accounting rate of return
 - c. profitability index
 - d. net present value
 - e. net initial investment
3. For decision making, sunk costs are:
- ☒ a. treated the same as unavoidable direct fixed costs.
 - b. treated the same as avoidable direct fixed costs.
 - c. treated the same as opportunity costs.
 - d. relevant for outsourcing decisions.
 - e. relevant if they are common costs.
4. Bozo Company has 2,000 obsolete light fixtures that are carried in inventory at a manufacturing cost of \$30,000. If the fixtures are reworked for \$10,000, they could be sold for \$18,000. Alternately, the light fixtures could be sold for \$3,000 to a jobber located in a distant city. If the fixtures are reworked and sold, the opportunity cost would be:
- ☒ a. \$ 3,000
 - b. \$10,000
 - c. \$13,000
 - d. \$30,000
 - e. \$40,000
5. Which of the following capital budgeting methods does not use the time value of money?
- ☒ a. Payback period
 - b. Net present value
 - c. Profitability index
 - d. Both (a) and (b)
 - e. Both (a) and (c)
6. The accounting rate of return:
- a. is always greater than the internal rate of return.
 - ☒ b. focuses on accrual accounting income rather than on cash flows.
 - c. uses the payback reciprocal as the discount rate.
 - d. All of the above are correct.
 - e. Both (a) and (c) are correct.
7. In investment centers, managers control:
- ☒ a. Costs, revenues, and assets used in operations
 - b. Variable and fixed costs
 - c. Revenues and costs
 - d. Costs and assets used in operations
 - e. Revenues and assets used in operations