

Take Home Final Exam:

Your answers are due **no later than 5:00 p.m. on Tuesday, May 7, 2013.** (However, I would prefer that the exams be turned in by 2:30 p.m.) The exam is open book and open notes. You may NOT discuss the questions or your work on them with anyone. The work turned in is to be entirely YOUR OWN. Please turn in a hard copy.

PLEASE be sure to label each problem and part thereof, AND to put your name on the first page!

Wherever possible, you should provide numerical calculations to back up your arguments, choices or recommendations. Please label the results of these calculations clearly.

Problem 1 (55 points): Comparative income statements and balance sheets for Utica Company follow for 2012 and 2011.

Utica Company
Comparative Income Statements
For Years Ended December 31, 2012
and 2011

	<u>2012</u>	<u>2011</u>
Sales	\$12,013,631	\$11,016,668
Cost of goods sold	<u>6,747,451</u>	<u>6,267,557</u>
Gross profit	5,266,180	4,749,111
Selling and administrative expenses	<u>3,637,065</u>	<u>3,296,448</u>
Operating income	1,629,115	1,452,664
Other expenses (revenues):		
Interest revenue	(95,915)	(77,478)
Interest expense	<u>78,232</u>	<u>68,800</u>
Total other expenses (revenues)	<u>(17,683)</u>	<u>(8,678)</u>
Income before income taxes	1,646,798	1,461,342
Income taxes	<u>734,775</u>	<u>609,517</u>
Net income	<u>\$912,023</u>	<u>\$851,824</u>

Utica Company
Comparative Balance Sheets
December 31, 2012 and 2011

	<u>2012</u>	<u>2011</u>
Assets		
Cash	\$246,652	\$254,183
Marketable securities	446,013	198,746
Accounts receivable	986,322	1,025,321
Inventory	1,531,467	1,588,061
Prepaid expenses	<u>127,488</u>	<u>113,306</u>
Total current assets	3,337,942	3,179,616
Investments and other assets	790,333	592,281
Property Plant and equipment, net	2,875,290	2,628,046
Trademarks and other intangibles	<u>268,588</u>	<u>275,735</u>
Total Assets	<u>\$7,272,153</u>	<u>\$6,675,678</u>
Liabilities and stockholders' equity		
Notes payable	\$182,880	\$171,671
Current maturities of long-term debt	10,231	14,755
Accounts payable and accrued expenses	<u>1,858,773</u>	<u>1,894,271</u>
Total current liabilities	2,051,883	2,080,697
Long-term debt	<u>567,495</u>	<u>528,494</u>
Total liabilities	<u>2,619,378</u>	<u>2,609,191</u>
Common stock	127,274	122,249
Additional paid-in capital	232,956	221,817
Retained earnings	<u>4,292,546</u>	<u>3,722,420</u>
Total stockholders' equity	<u>4,652,775</u>	<u>4,066,486</u>
Total liabilities and equity	<u>\$7,272,153</u>	<u>\$6,675,678</u>

Required:

A. Prepare a comprehensive analysis of Utica for 2012, including the following measures (round all calculations to three decimal places.

1. Short-term solvency ratios (current ratio, acid test, inventory turnover, and days sales in receivables ratios)
2. Long-term solvency ratios (debt-to-equity and times-interest-earned ratios)
3. Performance measurement ratios (asset turnover, return on sales, return on assets, and return on equity ratios)

B. Comment on the financial condition of Utica with respect to short-term solvency, long-term solvency, and performance.

C. Using the data for Utica Company, prepare common size (vertical analysis) statements and evaluate the company's performance in 2012 as compared to 2011. For the balance sheets, use total assets as the base; for the income statements, make one set using sales of each year as the base (vertical analysis) and another set using the year 2011 as the base for both years (horizontal analysis).

D. Comment on the condition of Utica drawing on the common size statements prepared above.

Problem 2 (15 points): J.Jill is a women's clothing retailer. The company started as a mail order company and has expanded into mall department stores. The company now receives approximately half of its revenues from mail order and half from retail outlets. Over the time period 2002 to 2004, sales increased approximately 25%.

Discuss the relationship between net income and cash flow from operations, and among cash flows from operating, investing and financing activities over the three-year period.

CASH FLOW STATEMENT (in thousands)

	<u>12/2004</u>	<u>12/2003</u>	<u>12/2002</u>
Cash from operations			
Net income	8,706	7,025	18,434
Depreciation & amortization	18,663	16,131	12,672
Net increase (decrease) in assets & liab.	6,696	26,659	10,623
Other adjustments, net	1,396	924	3,996
Net cash provided by (used in) operations	<u>35,461</u>	<u>50,739</u>	<u>45,725</u>
Cash from investments			
(Increase) decrease in property & plant	-28,784	-34,265	-34,734
Other cash inflow (outflow)	-35,434	-1,143	-2,454
Net cash provided by (used in) investing	<u>-64,218</u>	<u>-35,408</u>	<u>-37,188</u>
Cash from financing			
Issuances (purchases) of equity shares	3,142	870	7,800
Increase (decrease) in borrowings	-1,706	-1,648	-1,755
Net cash provided by (used in) financing	<u>1,436</u>	<u>-778</u>	<u>6,045</u>
	-	-	-
Net change cash & cash equivalents	-27,321	14,553	14,582
Cash and cash equivalents at start of year	59,287	44,734	30,152
Cash and cash equivalents at year end	31,966	59,287	44,734

Problem 3 (25 points): The following balance sheet and income statement pertain to Graham Corp. Use the following assumptions to complete a forecasted 2013 income statement:

Assumptions for 2013:

Revenue growth rate	32%
COGS	64% of sales
Operating expenses	23% of sales
Interest expense	10% of beginning long-term debt
Tax rate	35%

Graham Corp. Consolidated Statement of Income
(Thousands except per share amounts)

	<u>2012</u>
Net Revenues	\$345,871
Cost of Revenue	(226,546)
SG&A	(83,009)
Operating Income	<u>36,316</u>
Interest Expense	(484)
Income Before Income Taxes	<u>35,832</u>
Income taxes	(12,541)
Net Income	<u><u>\$23,291</u></u>

Graham Corp Consolidated Balance Sheet
(Thousands)

	<u>2012</u>
Current Assets	
Cash and Equivalents	7,905
Merchandise inventory	6,308
Accounts receivable	6,614
PPE (including intangibles), net	<u>39,458</u>
Total Assets	<u><u>60,285</u></u>
Liabilities and Stockholders' Equity	
Accounts payable	9,643
Long-term debt	13,500
Shareholders' Equity	
Common stock and APIC	28,613
Retained earnings	<u>8,529</u>
Total Liabilities and Shareholders' Eq.	<u><u>60,285</u></u>

Problem 4 (10 points): Cash, Inc. sells numerous office supply products through a national distribution center. The company has focused on maintaining a cash balance equivalent to approximately 14 days of sales. Sales in 2012 amounted to \$125,980,673 and the company expects growth in 2013 of 11% and in 2014 of 15%. Given this information determine Cash, Inc.'s projected year-end cash balance for 2013 and 2014.

Problem 5 (20 points): Gilde Industries is a division of a major corporation. Last year the division had total sales of \$23,380,000, net operating income of \$2,828,980, and average operating assets of \$7,000,000. The company's minimum required rate of return is 12%.

Required:

- a. What is the division's margin?
- b. What is the division's turnover?
- c. What is the division's return on investment (ROI)?
- d. How can Gilde Industries increase its ROI? List 3 ways, and be specific!

Problem 6 (20 points):

The Alpha Division of the Carlson Company manufactures product X at a variable cost of \$40 per unit. Alpha Division's fixed costs, which are sunk, are \$20 per unit. The market price of X is \$70 per unit. Beta Division of Carlson Company uses product X to make Y. The variable costs to convert X to Y are \$20 per unit and the fixed costs, which are sunk, are \$10 per unit. The product Y sells for \$80 per unit.

Required:

- a. What transfer price of X causes divisional managers to make decentralized decisions that maximize Carlson Company's profit if each division is treated as a profit center?
- b. Given the transfer price from part (a), what should the manager of the Beta Division do?
- c. Suppose there is no market price for product X. What transfer price should be used for decentralized decision-making?
- d. If there is no outside market for product X, is the operation of the Beta Division profitable?

Problem 7 (20 points):

A soft drink company has three bottling plants throughout the country. Bottling occurs at the regional level because of the high cost of transporting bottled soft drinks. The parent company supplies each plant with the syrup. The bottling plants combine the syrup with carbonated soda to make and bottle the soft drinks. The bottled soft drinks are then sent to regional grocery stores.

The bottling plants are treated as costs centers. The managers of the bottling plants are evaluated based on minimizing the cost per soft drink bottled and delivered. Each bottling plant uses the same equipment, but some produce more bottles of soft drinks because of different demand. The costs and output for each bottling plant are:

	A	B	C
Units Produced	10,000,000	20,000,000	30,000,000
Variable Costs	\$ 200,000	\$ 450,000	\$ 650,000
Fixed Costs	\$1,000,000	\$1,000,000	\$1,000,000

Required:

- Estimate the average cost per unit for each plant.
- Why would the manager of plant A be unhappy with using the average cost as the performance measure?
- What is an alternative performance measure that would make the manager of plant A happier?
- Under what circumstances might the average cost be a better performance measure?

Problem 8 (10 points):

An insurance company has the following profitability analysis of its services:

	Life Insurance	Auto Insurance	Home Insurance
Revenues	\$5,000,000	\$10,000,000	\$3,000,000
Commissions	(1,000,000)	(2,000,000)	(600,000)
Payments	(3,000,000)	(7,300,000)	(2,000,000)
Fixed Costs	<u>(500,000)</u>	<u>(500,000)</u>	<u>(500,000)</u>
Profit	<u>\$ 500,000</u>	<u>\$ 200,000</u>	<u>(\$ 100,000)</u>

The fixed costs are distributed equally among the services and are not avoidable if one of the services is dropped.

What is the profitability of the remaining services if all services with losses are dropped? Continue dropping services until there are NO unprofitable services.

Problem 9 (10 points):

The manager of the manufacturing unit of a company is responsible for the costs of the manufacturing unit. The president is in the process of deciding whether to evaluate the manager of the manufacturing unit by the average cost per unit or the variable cost per unit. Quality and timely delivery would be used in conjunction with the cost measure to reward the manager.

Required:

- a. What problems are associated with using the average cost per unit as a performance measure?
- b. What problems are associated with using the variable cost per unit as a performance measure?

Problem 10 (15 points):

The following investment opportunities are available to an investment center manager:

<u>Project</u>	<u>Initial Investment</u>	<u>Annual Earnings</u>
A	\$800,000	\$90,000
B	100,000	20,000
C	300,000	25,000
D	400,000	60,000

Required:

- a. If the investment manager is currently making a return on investment of 16 percent, which project(s) would the manager want to pursue?
- b. If the cost of capital is 10 percent, which project(s) should be chosen?
- c. Suppose only one project can be chosen. Which project should be chosen?