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Section _____

**ACCOUNTING 15.511
SUMMER 2004
FINAL EXAM**

Exam Guidelines:

- You have 120 minutes to complete the exam. Please use your time efficiently.
- This exam contains 11 pages. Please make sure your copy is not missing pages.
- If necessary, make assumptions to solve problems. State your assumptions clearly.

Good luck!

Problem 1 (15 marks, 15 minutes)

A company provides you with the following information about their inventory purchases and sales:

Date		Units	Unit Cost	Total
January 1, 2004	Beginning Inventory	6	\$14.00	\$84.00
January 10, 2004	Purchase #1	20	\$14.25	\$285.00
January 20, 2004	Purchase #2	10	\$14.50	\$145.00
January 15, 2004	Sale #1	12	\$32.00	\$384.00
January 25, 2004	Sale #2	15	\$32.50	\$487.50

A. Using the FIFO method, calculate the company's cost of goods sold for January 2004 and the company's ending inventory as of Jan. 31, 2004.

$$\text{FIFO COGS} = 6\text{units} * \$14/\text{unit} + 6\text{units} * \$14.25/\text{unit} + 14\text{units} * \$14.25/\text{unit} + 1\text{unit} * \$14.5/\text{unit} = \$383.5$$

$$\text{FIFO Ending Inventory} = 9 \text{ units} * \$14.5/\text{unit} = \$130.5$$

$$\text{To double check, Cost of Goods Available for Sale} = \text{COGS} + \text{Ending Inv.} = \$514$$

B. Using the LIFO method, calculate the company's cost of goods sold for January 2004 and the company's ending inventory as of Jan. 31, 2004.

$$\text{LIFO COGS} = 12\text{units} * \$14.25 + 10\text{units} * \$14.5/\text{unit} + 5\text{units} * \$14.25/\text{unit} = \$387.25$$

$$\text{LIFO Ending Inventory} = 6\text{units} * \$14/\text{unit} + 3\text{units} * \$14.25/\text{unit} = \$126.75$$

$$\text{To double check, Cost of Goods Available for Sale} = \text{COGS} + \text{Ending Inv.} = \$514$$

Problem 2 (30 marks, 30 minutes)

(You may answer using journal entries, T-accounts, or balance sheet equation.)

On January 1, 2005, Golf Tee Inc. will acquire a vehicle from a car dealership for \$50,000. The dealership offers to lease the vehicle to Golf Tee Inc. for five years with payments of \$12,462 due on December 31 of each year. The expected resale value of the car after five years is \$0, and the borrowing rate for Golf Tee Inc. is 12%.

- A. By simply examining the terms, do you believe this lease qualifies as a capital lease or an operating lease? Explain.

Capital Lease, because “the expected resale value of the car after five year is \$0”, which means that the useful life of the car is five years Golf Tee Inc. leases the whole useful life of the car.

- B. What borrowing rate is the car dealership charging Golf Tee Inc.? Is it 10%, 12%, or 14%? Explain.

Answer 1) 12%. It is the borrowing rate for Golf Tee Inc. If the car dealership charges more than 12%, then Golf Tee can go borrow the money from its bank and purchase the car. Therefore, 12% is the highest rate the car dealership can charge Golf Tee.

Answer 2) 8%. Since Golf Tee leases five years out of the five years useful life of the car, the market value of the car has to be equal to the present value of the lease payments.

$$50,000 = \$12,462 * PVOA(r, 5 \text{ periods})$$

$$PVOA(r, 5 \text{ periods}) = 4.0122$$

$$r = 8\% \text{ (approximately)}$$

C. Assuming the borrowing rate is 12%, and assuming the lease qualifies as an *operating lease*, provide the journal entrees for Golf Tee Inc. for the first two years of the lease.

12/31/: Dr. Rent Expense \$12,462
 Cr. Cash \$12,462

2nd year: Dr. Rent Expense \$12,462
 Cr. Cash \$12,462

D. Assuming the borrowing rate is 12% and assuming the lease qualifies as a *capital lease*, provide the journal entries for Golf Tee Inc. for the first two years of the lease.

PV of lease payments = $\$12,462 * PVOA(12\%,5) = \$12,462 * 3.60478 = \$44,922.77$

1/1/2005: Dr. Leased Assets \$44,922.77
 Cr. Lease Obligation \$44,922.77

12/31/2005: Dr. Interest Expense \$5,391 (= \$44,922.77 * 12%)
 Lease Obligation \$7,071 (= \$12,462 - \$5,391)
 Cr. Cash \$12,462

 Dr. Depreciation Expense \$8,984.5 (= \$44,922.77 / 5)
 Cr. Accumulated Depreciation \$8,984.5

12/31/2006: Dr. Interest Expense \$4,542 (= (\$44,922.77 - \$7,071) * 12%)
 Lease Obligation \$7,920 (= \$12,462 - \$4,542)
 Cr. Cash \$12,462

 Dr. Depreciation Expense \$8,984.5
 Cr. Accumulated Depreciation \$8,984.5

Problem 3 (25 marks, 25 minutes)

Use financial statement information for Coca-Cola to answer parts a, b and c of this question.

For this financial data, please see the Income Statement and Balance Sheet (pp. 51-53) from: The Coca-Cola Company. "United States Securities and Exchange Commission Form 10-K." 27 February 2004. Available at: <http://www.coca-cola.com/> (accessed July 31, 2004).

Use financial statement information for Coca-Cola and PepsiCo to answer parts d and e of this question.

For this financial data, please see the Income Statement and Balance Sheet (pp. 58 and 60) from: PepsiCo. "PepsiCo 2003 Annual Report." 9 February 2004. Available at: <http://www.pepsico.com/> (accessed July 31, 2004).

A. Using information from the financial statements for Coca-Cola, compute the current ratio and the quick ratio for 2003.

Current ratio = current assets / current liabilities = $8,396/7,886 = 1.06$

Quick ratio = (cash + receivables) / current liabilities = $(3,362+2,091)/7,886 = 0.69$

B. What is your analysis of the short-term liquidity of Coca-Cola?

From the class slides, we know that an adequate current ratio is around 2. Coca-Cola's current ratio is well-below that target ratio, therefore the company needs to improve its short-term liquidity situation. Nevertheless, Coca-Cola still meets the "minimum" current ratio of 1; however, the quick ratio is well-below an optimum ratio of 1. Given the company's immense brand power, this might only cause slight concern among analysts and investors, but Coca-Cola's management should take some actions to solidify its short-term liquidity.

C. Using information from the financial statements for Coca-Cola, compute the interest coverage ratio 2003.

$$\text{Interest coverage ratio} = (\text{Net income} + \text{interest expense} + \text{tax expense}) / \text{interest expense} = (4,347 + 1,148 + 178) / 178 = 31.8$$

D. Using the financial statement information for Coca-Cola and PepsiCo for 2003, which company's profit margin is higher?

$$\text{Profit margin} = (\text{Net income} + \text{interest expense} (1 - \text{tax rate})) / \text{sales}$$

$$\text{Coco-Cola profit margin} = (4,347 + 178 * (1 - 21\%)) / 21,044 = 21.3\%$$

$$\text{PepsiCo profit market} = (3,568 + 163 * (1 - 29\%)) / 26,971 = 13.7\%$$

Coco-Cola's profit margin is higher.

E. Using the financial statement information for Coca-Cola and PepsiCo for 2003, which company is more efficient in using assets to generate sales?

Asset turnover ratio (sales/average total assets) reflects how efficient a company uses its assets to generate sales.

$$\text{Coco-Cola asset turnover ratio} = 21,044 / (0.5 * (27,342 + 24,501)) = 0.812$$

$$\text{PepsiCo asset turnover ratio} = 26,971 / (0.5 * (25,327 + 23,474)) = 1.1$$

PepsiCo uses its assets more efficiently.

September 1, 2000: Dr. MS Adjustment \$50,000
 Cr. Capital Gain (RE) \$50,000
 Value of holding in Pear Corporation marked to market and capital gain recognized.

September 1, 2000: Dr. Cash \$75,000
 Cr. Marketable Securities \$50,000
 MS Adjustment \$25,000
 2,500 shares of Pear Corporation sold at \$30 per share.

- E. December 31, 2000: The office building acquired in part A has an estimated useful life of 5 years, after which point, the company expects to sell it for \$500,000. Nanosoft Corporation decides to use a straight-line depreciation schedule. Record the financial accounting (GAAP) depreciation for the year 2000.**

December 31, 2000: Dr. Depreciation Expense (RE) \$200,000 $([1.5m-.5m]/5)$
 Cr. Accumulated Depreciation \$200,000
 Adjustment for depreciation on building.

- F. December 31, 2000: Nanosoft Corporation reports Sales Revenues of \$1,000,000, COGS of \$200,000, SG&A Expenses of \$50,000. Pear Corporation's stock closes at \$30 per share during the last trade of the year.**

At this stage ignore taxes. Prepare Nanosoft Corporation's GAAP income statement for the year 2000 up to income before taxes.

Income Statement

Sales Revenues	\$1,000,000	(Given)
COGS	\$200,000	(Given)
SG&A	\$50,000	(Given)
Depreciation	\$200,000	(Calculated in E)
<u>Capital Gain</u>	<u>\$100,000</u>	(Calculated in C and D)
Income Before Taxes	\$650,000	

- G. Given a 20% tax rate, calculate the GAAP tax expense and the Net Income for the year 2000.**

Income Before Taxes x Tax Rate = \$650,000 x 20% = \$130,000

- H. Tax authorities prescribe an accelerated depreciation schedule, which stipulates a depreciation of 60% and 40% of the assets historical cost in the first and second year, respectively, and no depreciation after that point. Calculate the depreciation expense for tax accounting purposes for year 2000.**

$$\text{Historical Cost of Asset} \times 60\% = \$1,500,000 \times 60\% = \$900,000$$

- I. Will item H. cause the deferred tax liability to increase? {For extra credit: By how much?}**

Increase.

The higher depreciation expense under tax accounting will result in a lower taxable income than income before taxes for financial accounting purposes. As a result, tax expense will be higher than the tax payable or actually paid. To balance the two accounts, a deferred tax liability account will be created.

$$\begin{aligned} \text{Change in deferred tax liability due to differences in depreciation expense} &= \\ &(\text{Depreciation Expense for Tax Purposes} - \text{Depreciation Expense for Financial} \\ &\text{Purposes}) \times \text{Tax Rate} = \\ &(\$900,000 - \$200,000) \times 20\% = \$140,000 \end{aligned}$$