

**Sauder School of Business
Commerce 293
FINAL EXAMINATION - QUESTION BOOKLET**

TIME: 150 minutes TOTAL MARKS: 140

Question 1 Accounts Receivable (11 marks, suggested time 11 minutes)

In 2004, Holly opened a business selling imported woman's accessories to fashion boutiques. The following transactions relating to sales and accounts receivable occurred in 2005:

January 1 st , 2005 Accounts Receivable balance	\$ 50,000
January 1 st , 2005 Allowance for Doubtful Accounts balance	\$ 5,000 cr.
Sales (all on account)	\$ 360,000
Cash collected on accounts receivable (net of sales discounts taken)	\$ 290,000
Accounts receivable written off as not collectible	\$ 4,000

Holly received a letter from a customer whose \$12,000 account she had written off last year. The customer promised that she would pay in January 2006.

The company decided to use the balance sheet approach to estimate the required balance for the Allowance for doubtful accounts. After much research, the company decided to use the industry average of 10% of accounts receivable to determine the amount which would be sufficient to provide for uncollectible accounts.

Required

Prepare all of the necessary entries to record credit sales, collections, write-offs, reinstatements and bad debts expense for the year ended December 31, 2005. Show your calculations. (12 Marks)

Question 2 Shareholders' Equity (27 marks, suggested time 27 minutes)

Stellbert Inc. ("Stellbert") had the following shareholders' equity account balances on January 1, 2005:

Common shares, 1,000,000 shares authorized, 70,000 shares issued	\$700,000
Preferred shares, \$3 cumulative, 100,000 shares authorized, 5,000 shares issued	\$50,000
Retained earnings	\$300,000

All of the Common shares had been issued at one public offering in 2002. The last dividends declared for the common and preferred shares were for the year ended December 31st, 2003.

The following transactions took place during 2005:

1. On January 29th, the company bought and retired (cancelled) 10,000 of the company's own common shares for \$9 per share.
2. On March 31st the company bought and retired (cancelled) 5,000 of its common shares for \$14 per share.

3. On June 30th, 50,000 common shares were issued at \$10 per share.
4. On July 13th, Stellbert issued 35,000 preferred shares in exchange for a building. The company selling the building had a NBV in its general ledger of \$250,000 for the building. The building had a market value appraisal of \$350,000.
5. On September 14th, Stellberts' Board of Directors declared a 20% common stock dividend issuable on October 10th. On September 14th, the market price for the shares was \$15 per share.
6. On December 30th, the Board declared and completed a 3 for 1 common stock split.
7. On December 31st, the company reported net income of \$310,000. The Board of directors declared a \$35,000 cash dividend for the common shareholders, payable on January 16th, 2006 to common shareholders of record on January 6th, 2006

Required:

- a) Prepare the required journal entries for each of these transactions/events. Please show your supporting calculation. **(15 marks)**
- b) Prepare, in good form (ie, account titles, number and details about shares, dollar amounts) the shareholders' equity section of the balance sheet at December 31st, 2005. (Clearly indicate how you derive your numbers.) **(8 marks)**
- c) Thoughtfully explain how financial leverage can be used to increase a firm's share price and overall market value. **(4 marks)**

Question 3 Bonds (26 marks; suggested time 26 minutes)

On January 1st, 2005 Borrower Limited sold a 10% semi-annual (June 30th, December 31st), four year, \$100 million bond when bonds of equivalent risk and maturity were yielding 8% annually. On January 1st, 2007, when annual market yields for bonds with a two year remaining life were 12%, Borrower retired the entire bond at market value. To finance this retirement Borrower issued a new bond with an annual yield rate of 12%, payable semi-annually. Borrower is a company whose shares are actively traded on the Toronto Stock Exchange

Note: present value tables are at the end of this booklet.

Required:

- a. Prepare the journal entry to record the issuance of the bond on January 1st, 2005. **(6 marks).**
- b. Prepare the journal entry to record the payment of interest on June 30th, 2005 and December 31st, 2005. **(6 marks)**
- c. Prepare the journal entry to record the retirement of the bond on January 1st, 2007 when market yields had increased to 12%. If you have no idea how to calculate how much Borrower paid to retire the bond, assume \$96,500,000 (which is not the correct amount, but can be used for part marks). **(8 marks)**
- d. Consider how market yields changed (initially 8% now 12%). (i) Does it make economic sense to retire these bonds and re-finance them at 12%? (ii) Next, review

your journal entry for part “c” (above). Why did management engage in the retirement transaction? Restated, considering your conclusion to the first part of this requirement (part “d”), explain the rationale for management’s decision to prematurely retire this bond. **(6 marks)**

Question 4 Warranties (13 marks; suggested time 13 minutes)

JPod Limited manufactures Lemon portable music players. These high tech toys are subject to frequent mechanical problems. Starting on January 1st, 2004 JPod, in an attempt to overcome consumer reluctance to buy their product, introduced a one year warranty. The selling price (including the warranty) of the Lemon is \$180 each. The cost of the Lemon for JPod is \$100 each and the estimated warranty cost per player on average is \$18 each.

During 2004 500,000 JPods were sold. **Sales in 2005 were 750,000 JPods**

As the warranty is for one year, warranty costs for any year’s sales are incurred and paid both in the year of the sale and the following year (as part of the 12 month warranty period is in the next fiscal year). Details of **actual warranty costs** for units sold in 2004 and 2005 are as follows:

	<u>Warranty Cost Paid in the year sold</u>	<u>Warranty Cost Paid following year</u>	<u>Total Warranty Cost</u>
Sale occurred in 2004	\$6,000,000	2,400,000	\$8,400,000
Sale occurred in 2005	9,000,000	3,700,000	12,700,000

Required:

- What is warranty expense for 2004 and 2005? Further, what is the balance of Warranty Liability as at December 31st, 2004 and December 31st, 2005? **(10 marks)**
- It is now early in 2006. You are the Vice President Finance for JPod. Comment on the reasonableness of the warranty provision of \$18 per unit. What would you recommend the rate be? **(3 marks)**

Question 5 Statement of Cash Flows (16 marks; suggested time 16 minutes)

The following financial statement information is available for Lexus Ltd. at the end of 2005:

Lexus Ltd. Balance Sheet As at December 31st		
<u>Assets</u>	<u>2005</u>	<u>2004</u>
Cash	\$ 26,200	\$ 275,000
Accounts receivable (net)	635,400	443,400
Inventory	634,000	277,000
Prepaid rent	<u>32,000</u>	<u>26,000</u>
Total current assets	\$1,327,600	\$ 1,021,400
Property, plant and equipment	3,575,100	3,480,100
Less: Accumulated amortization	<u>(1,111,400)</u>	<u>(926,000)</u>
Total Assets	<u>\$3,791,300</u>	<u>\$ 3,575,500</u>
Liabilities		
Accounts payable	\$ 367,000	\$ 324,000

Income taxes payable	<u>29,000</u>	<u>24,000</u>
Total current liabilities	396,000	348,000
Long term Bank debt	<u>1,900,000</u>	<u>1,900,000</u>
Total liabilities	<u>2,296,000</u>	2,248,000
Shareholders' Equity		
Common shares	878,300	624,000
Retained earnings	<u>617,000</u>	<u>703,500</u>
Total shareholders' equity	<u>1,495,300</u>	<u>1,327,500</u>
Total Liabilities and Shareholders' Equity	<u>\$3,791,300</u>	<u>\$ 3,575,500</u>

Lexus Ltd. Income Statement Year ended December 31st, 2005

Revenue	\$ 3,543,200
Cost of goods sold	<u>1,641,240</u>
Gross Margin	1,901,960
Other expenses:	
Amortization	232,400
Rent	121,000
General and other administrative	874,000
Gain on sale of equipment	<u>(145,000)</u>
Total other expenses	<u>1,082,400</u>
Earnings before interest and taxes	\$ 819,560
Interest & income taxes	<u>245,868</u>
Net income	<u>\$ 573,692</u>

Additional information

1. A piece of equipment was sold during 2005. This equipment had an original cost of \$105,000 and related accumulated amortization of \$47,000. No other capital assets were sold during the year.
2. 25% of the dividends declared in the year were stock dividends.

Required:

- a. Prepare, in good form, the Cash Flow from Operations section (only) of Lexus Ltd's Statement of Cash Flow for the year ended December 31st, 2005. Use the indirect method. **(7 marks)**
- b. Below are excerpts from the Statement of Cash Flow for Flander's Inc. (one of Lexus's main rivals).

Statement of Cash Flows	<u>2005</u>	<u>2004</u>	<u>2003</u>
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Operating activities			
Net income	80,000	250,000	300,000
Add: Amortization expense	20,000	100,000	100,000
Add/Less: Loss (Gain) on sale of capital assets	40,000	5,000	(4,000)
Change in A/R	(70,000)	(40,000)	12,000
Change in Inventory	(85,000)	(50,000)	1,200
Change in A/P	40,000	(3,000)	2,000
Cash (to) from operating activities	<u>25,000</u>	<u>262,000</u>	<u>411,200</u>
Investing activities			
Purchase of capital assets	(15,000)	(200,000)	(400,000)
Proceeds on disposal of capital assets	<u>190,000</u>	<u>8,000</u>	<u>10,000</u>
Cash (to) from investing activities	<u>175,000</u>	<u>(192,000)</u>	<u>(390,000)</u>
Financing activities			
Issuance (redemption) of common shares	(100,000)	(50,000)	50,000
Issuance (redemption) of long term debt	200,000	100,000	50,000
Dividend payments	<u>(300,000)</u>	<u>(120,000)</u>	<u>(100,000)</u>
Cash (to) from financing activities	<u>(200,000)</u>	<u>(70,000)</u>	-

Required:

Based on this information, provide one insight for each of Operating, Investing and Financing activities. Fully explain your insights. Restated, do not merely indicate that certain items are increasing while others are decreasing. Provide possible explanations for the trends that you see. **(9 marks)**

Question 6 Inventory (7 marks; suggested time 7 minutes)

Wiggum Ltd. is a distributor of baked goods. The following information is available for its line of glazed donuts for the month of June 2005.

Date	Transaction	Units	Cost/Price	Purchases	Sales
June 1	Opening inventory	800	\$4.20		
June 5	Purchase	400	\$4.50	\$1,800	
June 9	Sale	(1,100)	\$11.00		\$12,100
June 13	Purchase	1,350	\$4.80	\$6,480	
June 17	Purchase	725	\$4.40	\$3,190	
June 21	Sale	(1,125)	\$12		\$13,500
June 25	Sale	(250)	\$10.50		\$2,625
June 29	Purchase	<u>300</u>	\$4.60	\$1,380	
June 30	Closing inventory	1,100			
Totals				\$12,850	\$28,225

Note: Wiggum uses the periodic method of tracking inventory quantities. Assume that the opening value of inventory is the same under all cost flow assumptions.

Required:

- Determine the balance of ending inventory using the **LIFO (FISH)** periodic cost flow assumption. **(2 marks)**
- Determine the balance of ending inventory using the **FIFO (LISH)** periodic cost flow assumption. **(2 marks)**
- Determine the balance of ending inventory using the **Weighted Average** periodic cost flow assumption. **(3 marks)**

Question 7 Financial Statement Analysis (40 marks; suggested time 40 minutes)

Maverick Electronics Ltd. ("Maverick") is a publicly traded company that manufactures and sells state of the art computer chips. You are presented with the following financial information:

Balance sheets as at December 31:

In thousands (000's)	<u>2004</u>	<u>2003</u>	<u>2002</u>
Cash	\$ 50	\$ 150	\$ 350
Temporary investments	30	100	150
Accounts receivable (net)	550	400	260
Inventory	505	438	200
Prepaid expenses	<u>75</u>	<u>130</u>	<u>120</u>
Current assets	\$ 1,210	\$ 1,218	\$ 1,080
Capital assets & patents (net)	<u>4,473</u>	<u>2,826</u>	<u>1,888</u>
Total assets	<u>\$ 5,683</u>	<u>\$ 4,044</u>	<u>\$ 2,968</u>
Accounts payable	\$ 335	\$ 265	\$ 206
Other current liabilities	<u>1,010</u>	<u>953</u>	<u>736</u>
Current liabilities	\$ 1,345	\$ 1,218	\$ 942
Bonds payable	<u>1,500</u>	<u>1,000</u>	<u>500</u>
Total liabilities	<u>\$ 2,845</u>	<u>\$ 2,218</u>	<u>\$ 1,442</u>
Preferred shares (10% cumulative)	1,000	200	200
Common shares	350	450	500
Retained earnings	<u>1,488</u>	<u>1,176</u>	<u>826</u>
Total shareholders' equity	<u>\$ 2,838</u>	<u>\$ 1,826</u>	<u>\$ 1,526</u>
Total liabilities & shareholders' equity	<u>\$ 5,683</u>	<u>\$ 4,044</u>	<u>\$ 2,968</u>

Income statements

and statements of retained earnings for the year ended December 31:

In thousands (000's)	<u>2004</u>	<u>2003</u>	<u>2002</u>
Revenues	\$ 3,400	\$ 2,900	\$ 2,600
COGS	<u>(2,278)</u>	<u>(1,885)</u>	<u>(1,664)</u>
Gross margin	\$ 1,122	\$ 1,015	\$ 936
Bad debts expense	(34)	(29)	(26)
Other operating expenses	<u>(312)</u>	<u>(310)</u>	<u>(300)</u>
Operating income	\$ 776	\$ 676	\$ 610
Interest expense	<u>(90)</u>	<u>(60)</u>	<u>(30)</u>
Income before taxes	\$ 686	\$ 616	\$ 580
Income tax expense (40%)	<u>(274)</u>	<u>(246)</u>	<u>(232)</u>
Net income	<u>\$ 412</u>	<u>\$ 370</u>	<u>\$ 348</u>
Add: Opening retained earnings	1,176	826	498
Less: preferred share dividends	<u>(100)</u>	<u>(20)</u>	<u>(20)</u>
Closing retained earnings	<u>\$ 1,488</u>	<u>\$ 1,176</u>	<u>\$ 826</u>

Additional information:

- All sales are made on credit with payment due in 40 days. Maverick uses the percentage of sales method to estimate bad debts.
- All bonds payable have a coupon rate of 6% and are sold at par.
- The common share price at the end of each year was:
 - 2004 – \$37.02
 - 2003 – \$35.01
 - 2002 – \$32.80
- The weighted average # of common shares outstanding (in 000's) each year was:
 - 2004 – 70

- 2003 – 90
- 2002 – 100

Required:

a. Complete the missing cells in the table below. **(10 marks)**

Note, on the back pages of the question booklet is a template with various ratios.

	2004	2003	2002
Current			1.15
Total liabilities to Total assets			0.49
ROA (Return on assets)			12.3%
Gross (profit) margin %			36%
Inventory turnover (in days)			44 days
Quick ratio			0.81
ROCE (Return on common equity)			24.7%
EPS (Earnings per share)			\$ 3.28
Interest coverage (or times interest earned)			20.33 times
A/R turnover (in days)			37 days

b. Pete Mitchell, the CEO of Maverick, was recently quoted in a national business magazine discussing 2004's results:

"It has been another phenomenal year for our company. Sales and profits have increased steadily over the last three years and our strategy of expansion is working. This has resulted in higher earnings per share and share price in each year since 2002. This is a wonderful time to be a common shareholder. The future looks bright for our company."

Based on your ratios from part (a), agree or disagree with Mr. Mitchell's comments. Separate your discussion into a thoughtful analysis of the company's: **short-term liquidity, long-term solvency, efficiency (A/R and inventory management) and profitability.** Your answer

should include both relevant ratios and discussion of the insights afforded from these ratios as they relate to the different aspects of your analysis. **(25 marks)**

c. Calculate the Price/Earnings ratio for all three years. What do your results tell you about investors' attitudes and predictions regarding Maverick's future? **(5 marks)**

PV of an Ordinary Annuity

n / %	4.0%	5.0%	6.0%	8.0%	10.0%	12.0%
1	0.9615	0.9524	0.9434	0.9259	0.9091	0.8929
2	1.8861	1.8594	1.8334	1.7833	1.7355	1.6901
3	2.7751	2.7232	2.6730	2.5771	2.4869	2.4018
4	3.6299	3.5460	3.4651	3.3121	3.1699	3.0373
5	4.4518	4.3295	4.2124	3.9927	3.7908	3.6048
6	5.2421	5.0757	4.9173	4.6229	4.3553	4.1114
7	6.0021	5.7864	5.5824	5.2064	4.8684	4.5638
8	6.7327	6.4632	6.2098	5.7466	5.3349	4.9676
9	7.4353	7.1078	6.8017	6.2469	5.7590	5.3282
10	8.1109	7.7217	7.3601	6.7101	6.1446	5.6502

PV of a single dollar (PV \$1)

n / %	4.0%	5.0%	6.0%	8.0%	10.0%	12.0%
1	0.9615	0.9524	0.9434	0.9259	0.9091	0.8929
2	0.9246	0.9070	0.8900	0.8573	0.8264	0.7972
3	0.8890	0.8638	0.8396	0.7938	0.7513	0.7118
4	0.8548	0.8227	0.7921	0.7350	0.6830	0.6355
5	0.8219	0.7835	0.7473	0.6806	0.6209	0.5674
6	0.7903	0.7462	0.7050	0.6302	0.5645	0.5066
7	0.7599	0.7107	0.6651	0.5835	0.5132	0.4523
8	0.7307	0.6768	0.6274	0.5403	0.4665	0.4039
9	0.7026	0.6446	0.5919	0.5002	0.4241	0.3606
10	0.6756	0.6139	0.5584	0.4632	0.3855	0.3220

Common Financial Statement Analysis Ratios

$\frac{\text{Net Credit Sales}}{\text{Average Accounts Receivable}}$	$365 \text{ days} \times \frac{\text{Average Inventories}}{\text{Cost of Goods Sold}}$
$\frac{\text{Net Income} + \text{Interest exp.} \times (1 - \text{Tax Rate})}{\text{Average Total Assets}}$	$\frac{\text{Current Assets} - \text{Inventories} - \text{Prepays}}{\text{Current Liabilities}}$
$\frac{\text{Operating Cash Flow}}{\text{Average Current Liabilities} + \text{Long-term Debt}}$	$\frac{\text{Total Liabilities}}{\text{Total Shareholders' Equity}}$
$\frac{\text{Sales}}{\text{Average Inventory}}$	$\frac{\text{Interest Expense}}{\text{Average Long Term Debt}}$
$\frac{\text{Long-term Debt}}{\text{Shareholders' Equity}}$	$\frac{\text{Operating Cash Flow (or EBIT)}}{\text{Interest Expense}}$
$\frac{\text{Sales}}{\text{Average Total Assets}}$	$365 \text{ days} \times \frac{\text{Average Inventories}}{\text{Sales}}$
$\frac{\text{Net Income} - \text{Preferred Dividends}}{\text{Average Number of Common Shares}}$	$\frac{\text{Common Share Price}}{\text{Earnings per Share}}$
$\frac{\text{Current Assets}}{\text{Current Liabilities}}$	$\frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$
$365 \text{ days} \times \frac{\text{Average Receivables}}{\text{Net Credit Sales}}$	$365 \text{ days} \times \frac{\text{Average Payables}}{\text{Credit Purchases}}$
$\frac{\text{Total Liabilities}}{\text{Total Liabilities} + \text{Shareholders' Equity}}$	$\frac{\text{Sales}}{\text{Average Accounts Payable}}$
$\frac{\text{Net Income} - \text{Preferred Dividends}}{\text{Average Common Shareholders' Equity}}$	$\frac{\text{Long-term Debt}}{\text{Total Assets}}$
$\frac{\text{Common Shareholders' Equity}}{\text{Average Number of Common Shares}}$	

Sauder School of Business Commerce 293
FINAL EXAMINATION - ANSWER BOOKLET
Only Answer Question 2 through 7 in this Booklet
DO NOT SEPARATE THE PAGES

TIME: 150 minutes TOTAL MARKS: 140

Name: Student #:

Signature:

Question 2 Shareholders' Equity (27 marks, suggested time 27 minutes)

Shareholders' Equity

Required:

- a. Prepare the required journal entries for each of these transactions/events. Please show your supporting calculation. **(15 marks)**
- On January 29th, the company bought and retired (cancelled) 10,000 of the company's own common shares for \$9 per share.

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Supporting Calculations:

- On March 31st the company bought and retired (cancelled) 5,000 of its common shares for \$14 per share.

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Supporting Calculations:

- On June 30th, 50,000 common shares were issued at \$10 per share.

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Supporting Calculations:

- On July 13th, Stellbert issued 35,000 preferred shares in exchange for a building. The company selling the building had a net book value in its general ledger of \$250,000 for the building. The building had a market value appraisal of \$350,000.

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Supporting Calculations:

5. On September 14th, Stellberts' Board of Directors declared a 20% common stock dividend issuable on October 10th. On September 14th, the market price for the shares was \$15 per share.

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Supporting Calculations:

6. On December 30th, the Board declared and completed a 3 for 1 common stock split.

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Supporting Calculations:

7. On December 31st, the company reported net income of \$310,000. The Board of directors declared a \$35,000 cash dividend for the common shareholders, payable on January 16th, 2006 to common shareholders of record on January 6th, 2006

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Supporting Calculations:

- b. Prepare, in good form (ie, account titles, number and details about shares, dollar amounts) the shareholders' equity section of the balance sheet at December 31st, 2005. (Clearly indicate how you derive your numbers.) **(8 marks)**

- c. Thoughtfully explain how financial leverage can be used to increase a firm's share price and overall market value. **(4 marks)**

Question 3 Bonds (26 marks; suggested time 26 minutes)

Required:

- a. Prepare the journal entry to record the issuance of the bond on January 1st, 2005. **(6 marks)**.

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Supporting Calculations:

- b. Prepare the journal entry to record the payment of interest on June 30th, 2005 and December 31st, 2005. **(6 marks)**

June 30th, 2005

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Supporting Calculations:

December 31st, 2005

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Supporting Calculations:

- c. Prepare the journal entry to record the retirement of the bond on January 1st, 2007 when market yields had increased to 12%. If you have no idea how to calculate how much Borrower paid to retire the bond, assume \$96,500,000 (which is not the correct amount, but can be used for part marks). **(8 marks)**

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Supporting Calculations:

- d. Consider how market yields changed (initially 8% now 12%). (i) Does it make economic sense to retire these bonds and re-finance them at 12%? (ii) Next, review your journal entry for part "c" (above). Why did management engage in the retirement transaction? Restated, considering your conclusion to the first part of this requirement (part "d"), explain the rationale for management's decision to pre-maturely retire this bond. **(6 marks)**

Question 4 Warranties

(13 marks; suggested time 13 minutes)

Required:

a. What is warranty expense for 2004 and 2005? Further, what is the balance of Warranty Liability as at December 31st, 2004 and December 31st, 2005? **(10 marks)**

b. It is now early in 2006. You are the Vice President Finance for JPod. Comment on the reasonableness of the warranty provision of \$18 per unit. What would you recommend the rate be? **(3 marks)**

Question 5 Statement of Cash Flows (16 marks; suggested time 16 minutes)

Required:

- a. Prepare, in good form, the Cash Flow from Operations section (only) of Lexus Ltd's Statement of Cash Flow for the year ended December 31st, 2005. Use the indirect method. **(7 marks)**

In the question booklet you will see portions of the Statement of Cash Flow for Flander's Inc. (one of Lexus's main rivals).

Required:

Based on this information, provide one insight for each of Operating, Investing and Financing activities. Fully explain your insights. Restated, do not merely indicate that certain items are increasing while others are decreasing. Provide possible explanations for the trends that you see. **(9 marks)**

Operating Activity Insight

Investing Activity Insight

Financing Activity Insight

Question 6 **Inventory** **(7 marks; suggested time 7 minutes)**

Required:

a. Determine the balance of ending inventory using the **LIFO (FISH)** periodic cost flow assumption. **(2 marks)**

Ending Inventory =

b. Determine the balance of ending inventory using the **FIFO (LISH)** periodic cost flow assumption. **(2 marks)**

Ending Inventory =

c. Determine the balance of ending inventory using the **Weighted Average** periodic cost flow assumption. **(3 marks)**

Ending Inventory =

Question 7 Financial Statement Analysis (40 marks; suggested time 40 minutes)

Required:

a. Complete the missing cells in the table below. (10 marks)

Note, on the back pages of the question booklet is a template with various ratios.

	2004	2003	2002
Current			1.15
Total liabilities to Total assets			0.49
ROA (Return on assets)			12.3%
Gross (profit) margin %			36%
Inventory turnover (in days)			44 days
Quick ratio			0.81
ROCE (Return on common equity)			24.7%
EPS (Earnings per share)			\$ 3.28
Interest coverage (or times interest earned)			20.33 times
A/R turnover (in days)			37 days

c. Pete Mitchell, the CEO of Maverick, was recently quoted in a national business magazine discussing 2004's results:

"It has been another phenomenal year for our company. Sales and profits have increased steadily over the last three years and our strategy of expansion is working. This has resulted in higher earnings per share and share price in each year since 2002. This is a wonderful time to be a common shareholder. The future looks bright for our company."

Based on your ratios from part (a), agree or disagree with Mr. Mitchell's comments. Separate your discussion into a thoughtful analysis of the company's: **short-term liquidity, long-term solvency, efficiency (A/R and inventory management) and profitability**. Your answer should include both relevant ratios and discussion of the insights afforded from these ratios as they relate to the different aspects of your analysis. (25 marks)

Short-term Liquidity

Long-term Solvency

Efficiency

Profitability

- c. Calculate the Price/Earnings ratio for all three years. What do your results tell you about investors' attitudes and predictions regarding Maverick's future? **(5 marks)**

**Sauder School of Business
Commerce 293
FINAL EXAMINATION - SOLUTION**

Question 1 Accounts Receivable (12 marks, suggested time 15 minutes)

**Account Receivable
Required**

Prepare all of the necessary entries to record credit sales, collections, write-offs, reinstatements and bad debts expense for the year ended December 31, 2005. Show your calculations. (12 Marks)

Accounts receivable	360,000	
Sales		360,000
Cash	290,000	
Accounts receivable		290,000
Allowance for doubtful accounts	4,000	
Accounts receivable		4,000
Accounts receivable	12,000	
Allowance for doubtful Accounts		12,000
Allowance for doubtful accounts	200	
Bad debt expense		200

$50,000 + 360,000 - 290,000 - 4,000 + 12,000 = 128,000$

$\$128,000 @ 10\% = 12,800$

$ADA = \$5,000 - 4000 + 12,000 - \underline{\$200} = \$12,800$

Question 2 Shareholders' Equity (27 marks, suggested time 27 minutes)

**Shareholders' Equity
Required:**

- a. Prepare the required journal entries for each of these transactions/events.
- On January 29th, the company bought and retired (cancelled) 10,000 of the company's own common shares for \$9 per share.

Common stock (10,000 x 10)	\$100,000	
Contributed Surplus		10,000
Cash (10,000 x 9)		90,000

- On March 31st the company bought and retired (cancelled) 5,000 of its common shares for \$14 per share.

Common stock (5,000 x \$10)	50,000	
Contributed Surplus		10,000
Retained Earnings		10,000
Cash (5,000 x \$14)		70,000

3. On June 30th, 50,000 common shares were issued at \$10 per share.

Cash (50,000 x 10)	500,000
Common stock	500,000

4. On July 13th, Stellbert issued 35,000 preferred shares in exchange for a building. The company selling the building had a NBV in its general ledger of \$250,000 for the building. The building had a market value appraisal of \$350,000.

Building	350,000
Preferred Shares	350,000

5. On September 14th, Stellberts' Board of Directors declared a 20% common stock dividend issuable on October 10th. On September 14th, the market price for the shares was \$15 per share.

September 14

Stock dividends declared	315,000
Stock Dividends issuable	\$315,000

October 10

Stock Dividends issuable	315,000
Common stock	315,000

(70,000 – 10,000 - 5,000 + 50,000) x .20 = 21,000 shares
21,000 shares x \$15/share = \$315,000

6. On December 30th, the Board declared and completed a 3 for 1 common stock split .

No Entry

New outstanding shares (70,000 – 10,000 -5,000 + 50,000 + 21,000) x 3 = 378,000

7. On December 31st, the company reported net income of \$310,000. The Board of directors declared a \$35,000 cash dividend for the common shareholders, payable on January 16th, 2006 to common shareholders of record on January 6th, 2006

Preferred dividends = 2004:	(5,000) x \$3	=	15,000
2005:	(5,000 + 35,000) x \$3 =		<u>120,000</u>
			\$135,000

Common dividends (\$170,000 – \$135,000) = \$ 35,000

Preferred Dividends	135,000
Common Dividends	35,000
Dividends Payable	170,000

b. Prepare, in good form, the shareholders' equity section of the balance sheet at December 31, 2005. (Clearly indicate how you derive your numbers.) (8 marks)

Shareholders' Equity

Common shares, 1,000,000 shares authorized, 378,000 shares issued***	\$1,365,000*
Preferred shares, \$3 cumulative, 100,000 shares authorized, 40,000 shares issued****	\$ 400,000**
Contributed Surplus *****	0
Retained earnings	<u>\$ 115,000 *****</u> \$1,780,000

- * $\$700,000 - \$100,000 - \$50,000 + \$500,000 + \$315,000 = \$1,365,000$
- ** $\$50,000 + \$350,000 = \$400,000$
- *** $(70,000 - 10,000 - 5,000 + 50,000 + 21,000) \times 3 = 378,000$
- **** $5,000 + 35,000 = 40,000$
- ***** $\$10,000 - \$10,000 = 0$
- ***** $\$200,000 - \$10,000 - \$315,000 - 170,000 + \$310,000 = \$115,000$

d. Thoughtfully explain how financial leverage can be used to increase a firm's share price and overall market value. (4 marks)

Financial leverage increases a firm's value because the firm is **able to borrow** funds from creditors at a **cost (interest rate) which is lower than the rate of return earned** on the assets financed by the debt (**ROA > after tax cost of debt**). Additionally, to the extent that the firm's **ROE is greater than RARROR**, financial leverage effects are realized by the firm. These leverage effects **create wealth (+ NPV)** which increases the overall value of the firm and its share price.

Question 3 Bonds (26 marks; suggested time 26 minutes)

Required:

a. Prepare the journal entry to record the issuance of the bond on January 1, 2005. (6 marks)

\$100 million x 0.7307 (Single \$, N = 8, I = 4%)	\$ 73,070,000
\$5 million x 6.7327 (annuity, N = 8, I = 4%)	33,663,500
	<u>\$106,733,500</u>

Cash	106,733,500	
Bond		100,000,000
Premium		6,733,500

b. Prepare the journal entry to record the payment of interest on June 30th, 2005 and December 31, 2005. (6 marks)

	June 30th, 2005	December 31, 2005
Interest Expense	4,269,340	4,240,114
Premium	730,660	759,886
Cash	5,000,000	5,000,000

Date	Payment	Interest Exp. @4%	Premium Amortization	Closing Unamort. Premium	Closing Net Bond Value
1/1/05				6,733,500	106,733,500
6/30/05	5,000,000	4,269,340	730,660	6,002,840	106,002,840
12/31/05	5,000,000	4,240,114	759,886	5,242,954	105,242,954
6/30/06	5,000,000	4,209,718	790,282	4,452,672	104,452,672
12/31/06	5,000,000	4,178,107	821,893	3,630,779	103,630,779 ##
6/30/07	5,000,000	4,145,231	854,768	2,776,010	102,776,010
12/31/07	5,000,000	4,111,040	888,960	1,887,051	101,887,051
6/30/08	5,000,000	4,075,482	924,518	962,532	100,962,532
12/31/08	5,000,000	4,038,501	961,498	1,034 Rounding	100,001,034

- c. Prepare the journal entry to record the retirement of the bond on January 1, 2007 when market yields had increased to 12%. If you have no idea how to calculate how much Borrower paid to retire the bond, assume \$96,500,000 (which is not the correct amount, but can be used for part marks). **(8 marks)**

Book Value of Bond

\$100 million x 0.8548 (Single \$, N = 4, I = 4%) \$ 85,480,000

\$5 million x 3.6299 (annuity, N =4, I = 4%) 18,149,500

##**\$103,629,500** (Compare to above, very close)

Market Value of Bond

\$100 million x 0.7921 (Single \$, N = 4, I = 6%) \$ 79,210,000

\$5 million x 3.4651 (annuity, N = 4, I = 6%) 17,325,500

\$ 96,535,500

Bond	100,000,000	100,000,000
Premium	3,629,500 #	3,630,779 ##
Cash	96,535,500	96,535,500
Gain	7,094,000	7,095,279

If used the \$96,500,000, the entry would be:

Bond	100,000,000
Premium	3,629,500
Cash	96,500,000
Gain	7,129,500

- d. Consider how market yields changed (initially 8% now 12%). (i) Does it make economic sense to retire these bonds and re-finance them at 12%? (ii) Next, review your journal entry for part "c" (above). Why did management engage in the retirement transaction? Restated, considering your conclusion to the first part of this requirement (part "d"), explain the rationale for management's decision to pre-maturely retire this bond. **(6 marks)**

Given that your financing was originally set to yield 8%, it does **not seem reasonable/logical** on an economic level to **retire and replace debt yielding 8% with debt with a coupon of 12%**. The reason management retired the debt is in order to record a "**Gain**" on the **income statement**, thereby **increasing net income** and making management appear as though they are doing a **better job** than without recording the gain. Note, as this is a **public company**, **there is a separation of ownership from management, resulting in such behavior**. Restated, an owner-managed firm would **NEVER** engage in such a bond retirement where market yields have increased. This might lead to a **larger management bonus or higher share price** (in the short run, but ultimately the share price would lose whatever increase it realized from this manipulation).

Question 4 Warranties**(13 marks; suggested time 13 minutes)****Required:**

- a. What is warranty expense for 2004 and 2005? Further, what is the balance of Warranty Liability as at December 31, 2004 and December 31, 2005? **(10 marks)**

Cash	Warranty Liability		Warranty Expense	
		0 (Open Bal)	0	
		9,000,000	9,000,000	
6,000,000	6,000,000			
		3,000,000	<u>9,000,000</u>	
2,400,000	2,400,000			
		13,500,000	13,500,000	
9,000,000	9,000,000			
		5,100,000	<u>13,500,000</u>	
3,700,000	3,700,000			

$$500,000 \times \$18 = \$9,000,000$$

$$750,000 \times \$18 = \$13,500,000$$

- b. It is now early in 2006. You are the Vice President Finance for JPod. Comment on the reasonableness of the warranty provision of \$18 per unit. What would you recommend the rate be? **(3 marks)**

Based on the increasing credit balance of the warranty liability and the fact that the warranty accrual for the two years exceeded actual by \$1,400,000 (\$5,100,000 – 3,700,000) it appears the \$18 per unit warranty estimate is too high and should be decreased. A more reasonable estimate of the actual warranty costs is likely about \$16.88 (about \$17 per JPod sold). [(\$8,400,000 + 12,700,000)/(500,000 + 750,000)]

Question 5 Statement of Cash Flows (16 marks; suggested time 16 minutes)**Required:**

- a. Prepare, in good form, the statement of cash flow for Lexus Ltd. for the year ended December 31, 2005, using the indirect method. **(7 marks)**

**Lexus Ltd. Statement of Cash Flow
For the year ended December 31, 2005**

Operating activities

Net income	\$573,692
Add: Amortization	232,400
Less: Gain on disposal of asset	(145,000)
Add/deduct changes in non-cash Working capital items:	
Increase in A/R	(192,000)
Increase in Inventory	(357,000)
Increase in Prepays	(6,000)
Increase in A/P	43,000
Increase in I/T payable	<u>5,000</u>
Cash flow from operations	\$154,092

Required:

Based on this information, provide one insight for each of Operating, Investing and Financing activities. Fully explain your insights. Restated, do not merely indicate that certain items are increasing while others are decreasing. Provide possible explanations for the trends that you see. **(9 marks)**

Operating Activities

Possible answers include:

- Overall operating cash flow is decreasing rapidly. This is not a good sign as operating cash flow is the “lifeline” of a company and allows it to meet its day-to-day cash requirements. The company is having an increasingly difficult time generating cash from routine activities.
- Decrease in cash flow from operations can be attributed to lower overall profitability (i.e., lower net income). This, in turn, may be attributed to the slower turnover of A/R (higher bad debts) and the slower turnover of inventory (obsolescence issues).
- Offsetting the decrease in overall profitability is the apparent delay in paying suppliers (evidenced by the large positive adjustment for A/P in 2005). This is not necessarily a good thing since the company may be incurring late interest charges and/or the suppliers may eventually refuse to sell the company more goods.

Investing Activities

- Company is not expanding (buying assets) nearly as fast as before. This could partly explain the drop in net income.
- Company had a large disposition of assets in 2005 (likely at less than full fair market value given the large loss incurred on the sales). The company seems to be using asset sales as a means to keep overall cash flow stable. Large asset sales are a short-term strategy/solution and cannot be maintained indefinitely.
- Amortization expense exceeds the investment in new assets in 2005, suggesting a net decline in productive capacity.

Financing Activities

- Despite the drop in net income, the company has increased its dividend payments in each year and began buying back shares in 2004. This is likely a desperate attempt to keep share price stable. In 2005 the payment of dividends exceeds net income.
- In 2004, the company used up its cash flow from operations to pay dividends and fund share repurchases. In 2005, the company used proceeds on debt issuances and asset sales to fund an even larger dividend payment and share repurchase. It appears as though management is attempting to “siphon” cash out of the company to the benefit of shareholders and to the detriment of creditors.

Question 6 **Inventory** **(7 marks; suggested time 7 minutes)**

Required:

a. Determine the balance of ending inventory using the **LIFO (FISH)** periodic cost flow assumption. **(2 marks)**

$$\text{Ending Inventory} = (800 \times \$4.20) + (300 \times \$4.50) = \$4,710$$

b. Determine the balance of ending inventory using the **FIFO (LISH)** periodic cost flow assumption. **(2 marks)**

$$\text{Ending Inventory} = (300 \times \$4.60) + (725 \times \$4.40) + (75 \times \$4.80) = \$4,930$$

c. Determine the balance of ending inventory using the **Weighted Average** periodic cost flow assumption. (3 marks)

$$\begin{aligned} \text{BI} + \text{P} &= \$3,360 + \$12,850 = \$16,210 \\ \text{Units available for sale} &= 800 + 400 + 1,350 + 725 + 300 = 3,575 \end{aligned}$$

$$\text{W/A cost per unit} = \$16,210 / 3,575 = \$4.53$$

$$\begin{aligned} \text{Ending Inventory} &= \\ &= 1,100 \times \$4.53 = \$4,983 \end{aligned}$$

Question 7 Financial Statement Analysis (10 marks; suggested time 10 minutes)

Required:

(a) Complete the missing cells in the table below. (10 marks)

	2004	2003	2002
Current	$\frac{1,210}{1,345} = \underline{\underline{0.90}}$	$\frac{1,218}{1,218} = \underline{\underline{1.00}}$	1.15
Total liabilities to Total assets	$\frac{2,845}{5,683} = \underline{\underline{0.50}}$	$\frac{2,218}{4,044} = \underline{\underline{0.55}}$	0.49
ROA (Return on assets)	$\frac{412 + [90 \times (1 - .4)]}{(5,683 + 4,044)/2} = \underline{\underline{9.6\%}}$	$\frac{370 + [60 \times (1 - .40)]}{(4,044 + 2,968)/2} = \underline{\underline{11.6\%}}$	12.3%
Gross margin %	$\frac{1,122}{3,400} = \underline{\underline{33\%}}$	$\frac{1,015}{2,900} = \underline{\underline{35\%}}$	36%
Inventory turnover (in days)	$\frac{365}{\frac{2,278}{(505 + 438)/2}} = \underline{\underline{76 \text{ days}}}$	$\frac{365}{\frac{1,885}{(438 + 200)/2}} = \underline{\underline{62 \text{ days}}}$	44 days
Quick ratio	$\frac{50 + 30 + 550}{1,345} = \underline{\underline{0.47}}$	$\frac{150 + 100 + 400}{1,015} = \underline{\underline{0.53}}$	0.81
ROCE (Return on common equity)	$\frac{412 - 100}{(2,838 - 1,000 + 1,826 - 200)/2} = \underline{\underline{18.0\%}}$	$\frac{370 - 20}{(1,826 - 200 + 1,526 - 200)/2} = \underline{\underline{23.7\%}}$	24.7%
EPS (Earnings per share)	$\frac{412 - 100}{70} = \underline{\underline{\$4.46}}$	$\frac{370 - 20}{90} = \underline{\underline{\$3.89}}$	\$ 3.28
Interest coverage (or times interest earned)	$\frac{776}{90} = \underline{\underline{8.62 \text{ times}}}$	$\frac{676}{60} = \underline{\underline{11.27 \text{ times}}}$	20.33 times
A/R turnover (days)	$\frac{365}{\frac{3,400}{(550 + 400)/2}} = \underline{\underline{51 \text{ days}}}$	$\frac{365}{\frac{2,900}{(400 + 260)/2}} = \underline{\underline{42 \text{ days}}}$	37 days

(b) Based on your ratios from part (a), agree or disagree with Mr. Mitchell's comments. Separate your discussion into a thoughtful analysis of the company's: **short-term liquidity, long-term solvency, efficiency (A/R and inventory management) and profitability.** Your answer should include both relevant ratios and discussion of the insights afforded from these ratios as they relate to the different aspects of your analysis. (25 marks)

Short-term Liquidity	2004	2003	2002
Current	0.90	1.00	1.15
Quick ratio	0.47	0.53	0.81

Both ratios have decreased steadily over the past three years. This means that Maverick is having an increasingly difficult time meeting its short-term obligations.

Given that the quick ratio has decreased faster than the current ratio, we can conclude that inventory is growing as a percentage of total current assets. This is troubling since inventory turnover has slowed and obsolete inventory cannot be converted into significant amounts of cash. Furthermore, given the slowdown in A/R turnover a higher percentage of the receivables may be of poor quality.

Finally, compared to previous years the company has very little cash and marketable securities as at year-end (i.e., a smaller proportion of their current assets are highly liquid).

Maverick is facing a severe cash crunch and may not survive the next twelve months unless it receives additional financing and liquidates its inventories and speeds up collection of A/R.

Long-term Solvency	2004	2003	2002
Total liabilities to Total assets	0.50	0.55	0.49
Interest coverage (or times interest earned)	8.62	11.27	20.33

The ratio of total liabilities to assets has remained relatively steady. Thus the degree of leverage employed has not changed very much despite the fact that the company has taken on more debt. This lack of change is due to in part to an increase in preferred equity issuances as well as the fact that no common share dividends have been paid (i.e., company is self financing a portion of its expansion through retained earnings).

The interest coverage ratio has deteriorated substantially since 2002. This has been caused by higher interest expense (as a result of new bond issuances). While a ratio of 8.62 seems adequate, one should be cognizant of the fact that the preferred dividends are cumulative and essentially act as additional fixed payments (like interest). As a result, the "safety buffer" is, in substance, is substantially less than what the interest coverage ratio indicates. As well, higher financing charges translate into fewer earnings/cash flows available for distribution to common shareholders. Overall, the company is still meeting its fixed financing obligations but it is having an increasingly difficult time doing so.

Efficiency	2004	2003	2002
A/R turnover (days)	51	42	37
Inventory turnover (in days)	76	62	44

A/R turnover has slowed considerably in the last two years which means that the company is taking longer to collect its receivables. This is particularly worry-some as the credit terms are 40 days for receivables. This increasing age of A/R could be due to a few reasons such as: (1) the company has changed its revenue recognition policies in order to recognize revenues earlier, (2) the company's customers have fallen on hard times and are experiencing difficulties paying their bills, and/or (3) the company is being too lenient with its credit granting procedures. The main problem associated with slower collection is that the company will experience higher instances of bad debts which will reduce overall earnings/cash flows in the future. On this note, the company should revisit (revise upward) its bad debts estimate as the current estimate is likely much too low. Overall, the lead-lag time has been increased and this has likely contributed to the shortage of cash.

The slower inventory turnover is also a major area of concern (especially given the nature of the industry). If the inventory goes obsolete, it will likely not have much of a resale value. Therefore, future earnings and cash flows will suffer unless the company reduces the number of days that it takes to sell its inventory.

In total, the conversion cycle (Days inventory plus Days receivable) has increased from 81 days in 2002 to 104 days in 2003 to 127 days in 2004!! Such a significant increase clearly reflects poor managerial efficiency.

Profitability	2004	2003	2002
Gross margin %	33%	35%	36%
ROA (Return on assets)	9.6%	11.6%	12.3%
ROCE (Return on common equity)	18.0%	23.7%	24.7%
EPS (Earnings per share)	\$ 4.46	\$ 3.89	\$ 3.28

Gross margin has decreased over the past three years. This could indicate higher manufacturing costs and/or lower selling prices. Either way, the company is generating less earnings/cash flows from sales of its goods. This trend does not bode well for the company unless it can sharply reduce its operating costs.

ROA has decreased and this means that the company is not generating as much profits from its assets (regardless of the method of financing employed). The most likely factors are the drop in gross margin, the rapid increase in capital assets and the slowdown in A/R and inventory turnover. While the ROA is still higher than the after-tax cost of debt (3.6%), the 9.6% is now lower than the cost of financing the preferred shares (10%). This will dilute ROCE and hurt common shareholders in the future unless the company can regain profitability.

ROCE has decreased substantially in 2004. This is due to all of the factors that caused ROA to decline plus the effect of increased preferred share dividends. Although EPS has increased, this was due solely to the fact that the company repurchased 30,000 common shares between 2002 and 2004. The higher EPS is the result of management manipulating the capital structure and not the result of improved company performance. Contrary to the president's statements, it may not be "a wonderful time to be a common shareholder".

(c) Calculate the Price/Earnings ratio for all three years. What do your results tell you about investors' attitudes regarding Maverick's future? **(5 marks)**

	2004	2003	2002
Price/Earnings	$\frac{\$37.02}{\$4.46} = \underline{\underline{8.3 \text{ times}}}$	$\frac{\$35.01}{\$3.89} = \underline{\underline{9.0 \text{ times}}}$	$\frac{\$32.80}{\$3.28} = \underline{\underline{10.0 \text{ times}}}$

The P/E ratio has declined steadily over the past three years. This means that investors are willing to pay less for each dollar of earnings generated by the company.

This decrease in P/E could be due to the combination of:

- (1) The market feels that the company is now riskier than before and thus demands a higher required rate of return (e.g., ROCE) in order to be properly compensated for the higher risk.
- (2) The market feels that the company's growth prospects are not as attractive as initially believed to be. In other words, investors feel that earnings growth will decline in the future and thus they are not willing to pay as much for shares as before. Again, it should be noted that the increase in share price is only due to the common share repurchases.