11/16

MITSloan MANAGEMENT	**MIT Sloan School of Management** **15.501 Corporate Financial Accounting** **Midterm Examination** **November 19, 2008**

Name: Practice

Section: (Circle one):

[A] OR [B]

Instructions:

1) Exam Length: 1 hour and 20 minutes
2) This exam is 15 pages long including the cover page. **Please make sure your copy of the exam is not missing any pages.**
3) A calculator and one double-sided page of notes may be used during this exam.
4) **Write your answers in the space provided and <u>show any supporting computations you make</u>.** Do not attach additional material.

w/o much review

Question	Possible Points	Points Scored
1	10	
2	16	
3	12	
4	17	
5	10	
6	15	
7	20	
Total	100	

Problem 1 (10 points)

Use the table below to answer the following multiple choice questions. Circle the correct answer.

1. If a purchaser using a perpetual inventory system pays the transportation costs, then the
   a. Merchandise Inventory account is increased. gets added in
   b. Merchandise Inventory account is not affected.
   c. Freight-out account is increased.
   d. Delivery Expense account is increased. ✓

2. A plant asset was purchased on January 1 for $27,000 with an estimated salvage value of $3,000 at the end of its useful life. The current year's Depreciation Expense is $3,000 calculated on the straight-line basis and the balance of the Accumulated Depreciation account at the end of the year is $15,000. The remaining useful life of the plant asset is accelerated -10
   a. 10 years.
   b. 8 years.
   c. 5 years. used up
   d. 3 years.

~~does~~ not say ~~why~~

$27-3 = \frac{24{,}000}{3{,}000} = 8$

~~BVB~~ $15/3 = 5$

3. The interest charged on a $100,000 note payable, at the rate of 6%, on a 90-day note would be
   a. $6,000.
   b. $3,333.
   c. $1,500.
   d. $500.

$\frac{1}{4}$ the year.

So $\approx \frac{1}{4} \cdot 6 = 1.5$

4. The current portion of long-term debt should
   a. be paid immediately.
   b. be reclassified as a current liability.
   c. be classified as a long-term liability.
   d. not be separated from the long-term portion of debt.

5. Tanner Company is about to issue $200,000 of 5-year bonds, with a contract rate of interest of 10%, payable semiannually. The discount rate for such securities is 8%. How much can Tanner expect to receive from the sale of these bonds?
   a. $184,556. less
   b. $200,000.
   c. $216,221.
   d. None of the above.

Capon > market

Preimum

gets paid extra

discount rate = market rate

Problem 2 (16 points)

was the machine in use for > 1 year - assume yes

The Loktionov Procrastination Software Company purchased a machine on January 1, 2007. In addition to the purchase price paid, the following additional costs were incurred:

(a) sales tax paid on the purchase price,

(b) transportation and insurance costs while the machinery was in transit from the seller,

(c) personnel training costs for initial operation of the machinery,

(d) installation costs necessary to secure the machinery to the building flooring,

(e) major overhaul to extend the life of the machinery,

(f) lubrication of the machinery gearing before the machinery was placed into service,

(g) lubrication of the machinery gearing after the machinery was placed into service, and

(h) annual city operating license.

Instructions
Indicate whether the items (a) through (h) are capital or revenue by circling the correct answer.

(a)	Capital	Revenue
(b)	Capital	Revenue
(c)	Capital	Revenue
(d)	Capital	Revenue
(e)	Capital	Revenue
(f)	Capital	Revenue
(g)	Capital	Revenue
(h)	Capital	Revenue

✓ all correct

Problem 3 (12 points)

Akins Asset Pricing Industries Inc. uses the straight-line method of depreciation. The company's fiscal year end is December 31. The following transactions and events occurred during the first three years.

Instructions
Prepare the necessary entries using the provided BSE worksheet.

2006 July 1 Purchased an HP computer from the Computer Center for $3,500 cash plus sales tax of $305, and shipping costs of $250.
Nov. 3 Incurred ordinary repairs on computer of $240.
Dec. 31 Recorded 2006 depreciation on the basis of a four-year life and estimated salvage value of $455

3600 base

+ do I remember these

		Cash	Non Cash =	Liabilites	Contrib	Retained
Purchase	July 1	-4055	+4055			
Repairs	Nov 3	-240				-240
Dec 31	Dep.	~~900~~	- ~~900~~			- ~~900~~
			450			450

half a year - oh duh prorate

2007 Dec. 31 Recorded 2007 depreciation.

Dec 31	Dep		-900			-900

2008 Jan. 1 Paid $1,800 for a major upgrade of the computer (purchased on July 1, 2006). This expenditure is expected to increase the operating efficiency and capacity of the computer. How long - don't need

longer than a year.

						~~Description~~
Jan 1	Upgrade Capital expense	-1800	+1800			

Problem 4 (17 points)

Roychowdhury Boxing Equipment Inc reported the following summarized annual data at the end of 2007:

Sales revenue	$1,600,000
Cost of goods sold*	800,000
Gross margin	800,000
Operating expenses	300,000
Income before income taxes	$ 500,000

*Based on an ending FIFO inventory of $250,000. ← previous?? ignoring

The income tax rate is 30%. The controller of the company is considering a switch from FIFO to LIFO. He has determined that on a LIFO basis, the ending inventory would have been $170,000. Assume that the opening LIFO reserve balance is $0.

Instructions ✓? weird

1) Restate the summary information above on a LIFO basis.

2) What effect, if any, would the proposed change have on Sampson's income tax expense, net income, and cash flows? Show all calculations.

3) If you were an owner of this business, what would your reaction be to this proposed change? Circle the correct answer and explain in no more than 3 lines.

Positive	Negative	Indifferent

1. Sales 1,600,000 ← should be higher?

COGS ~~630,000~~ 880,000 Inventory 170,000

Gross Margin ~~970,000~~ 720,000

Expenses 300,000

Income b/t taxes ~~670,000~~ 420,000

? Is LIFO have higher income? No

✓ End inventory 250,000 − 170,000 = 80,000 less

ok makes sense now

LIFO higher COGS

lower end inventory

lower income

2. Tax expense

~~before~~ FIFO ~~150,000~~ 150,000 ↓ say

~~after~~ LIFO ~~201,000~~ 126,000 ↓ -24,000

Retry

Net income

FIFO 350,000 -56,000

LIFO 294,000

Cash flows

- ? what is this in this context again?

~~Ø~~ ↑ 24,000 from not paying tax

- oh duh - did not think about a problem we did before this

3. Lower apparent income bad if trying to show investors but tax ~~~~ 24,000 in pocket - always good. If small investment council, they will likely understand.

Positive

80,000 base
10,000/year ↓

57,000 base
11,400

Problem 5 (10 points)

Khan & Co Inc sold the following two machines in 2007:

	Machine A	Machine B
Cost	$84,000	$60,000
Purchase date	7/1/03	1/1/04
Useful life	8 years	5 years
Salvage value	$4,000	$3,000
Depreciation method	Straight-line	Straight-line
Date sold	7/1/07	9/1/07
Sales Price	$39,000	$20,000

Instructions

Provide entries using the BSE worksheet below to update depreciation and record the sales of the two assets in 2007. The company has recorded depreciation on the machine through December 31, 2006.

When record dep ? - end of year
- 1 year after purchase

Date	Des	Cash	N.C. Assets	Liabilites	Contrib	Earned/Retained
7/1/03	Pur	-84,000	+84000			
~~12/31/03~~	Dep	*	~~-10,000~~ 5,000			-10,000 -5,000

duh pro rate

1/1/04	Pur	-60,000	-60,000			
12/31/04	Dep	-	-10,000			-10,000
12/31/04	Dep		-11,400	← 7,600		-11,400

to prorate (and at start + end of year)

12/31/05 Dep -10,000 -10,000

12/31/05 Dep -11,400 -11,400

12/31/06 Dep -10,000 -10,000

12/31/06 Dep -11,400 -11,400

(So value A = 44,000 B - 25,800)
- inc salvage value

7/1/07 Sale -39,000 -44,000 -5,000 loss on disposal

9/1/07 Sale -20,000 -25,800 -5,800 +1,800

Rules for capitalization:
1. When lease auto trasfers to purchase at end
2. Or allows a bargin purchase option
3. Term < 75% of life of asset
4. PV of lease payments ≥ 90% fair market value

Problem 6 (15 points)

On January 2, 2006, Carrot Top Products, as lessee, leases a machine used in its operations. The annual lease payment of $10,000 is due on December 31 of 2006, 2007, and 2008. The machine reverts to the lessor at the end of three years. The lessor can either sell the machine or lease it to another firm for the remainder of its expected total useful life of five years. Carrot Top Products could borrow on a three-year collateralized loan at 12 percent. The market value of the machine at the inception of the lease is $30,000.

so operational lease

Instructions

Complete the following:

a. Assume that this lease qualifies as an operating lease. Give the BSE worksheet entries for Carrot Top Products over the three-year lease period.

	Cash	RE
Sign Lease	no mention	
12/31/06 payment	-10,000	-10,000
07 "	"	"
08 "	"	"
Revert back		

b. Assume that this lease qualifies as a capital lease. Give the BSE worksheet entries for Carrot Top Products over the three-year lease period.

? how is this split again
depreciate like own asset
then pay interest w/ the rest

	Cash	assets	Liabilities	RE
Sign Lease		~~+30,000~~ +24,018	~~-30,000~~ -24,018	
Depreciation 06		~~-6,000~~ 24018/3		-6000
Lease Payment 06	-10,000		-6,400	~~-4200~~ -3,600

need to be PV of the asset!

over the period time

payment interest

unpaid lease liability · interest rate it could get

then these slightly off

	Cash	asset	liabilities	RE
Depreciation 07		-6,000		-6,000
Lease Payment 07	-10,000	0	-7168	-2832
Depreciation 08		-6,000		-6,000
~~Lease 08~~ Payment	~~-10,000~~		~~-8028~~	-1971
			nothing at end	
Now what is end?		~~12,000~~	~~8404~~	

Remember the whole Dr/Cr thing

Assets = Liabilities + Equity

Assets Dr	Assets Cr
↑	↓

Liabilities Dr	Liabilities Cr
	↑

Equity Dr	Equity Cr
	↑

Problem 7 (20 points)

In recent times, Yelp.com Inc has not had any significant amount of long-term debt. However, assume that at the beginning of 2008, Lynn Li, the Yelp.com Inc CEO, is considering the option of using debt financing to fund growth plans. At this time, Yelp.com Inc faces a 8% market rate of interest.

Having consulted with Lehman Brothers Inc, Yelp.com Inc's investment banking advisors, Yelp.com Inc is considering the following two alternatives:

Zero-Coupon Bond (Bond A) - *Face Value = $10,000*
Maturity = 5 years

Regular Bond (Bond B) - *Face Value = $10,000*
Maturity = 5 years
Coupon Rate = 9% extra expense

Assume that all coupons are annual and paid out at the end of each year. Using the information above, answer the following questions. The coupon thing is always challenging

Show all calculations.

read the q!

1. Assume that Yelp.com issues **1000** certificates of Bond A at the beginning of 2008. How much cash would Yelp.com be able to raise from this sale?

Zero-coupon - need to discount to PV

.68058

↳ 6,805 = 6,805,800 raised ← just this needed here

Bond issued at prem

PV of the 10,000 (see above)

PV OA of 8%

↑ discounted to MR

6805 + 3.99 · 900 = 10396

↑ coupon rate · principal

if discount must pay at

- discount better for firm
- but decreases each year

2. How much interest expense would Yelp.com record at the end of 2008 on Bond A?

like bela does not actually have to pay

0

6 805 832 · .08 = 544,467

market value

3. Assume that Yelp.com issues **1000** certificates of Bond B at the beginning of 2008. How much cash would Yelp.com Inc. be able to raise from this sale?

- on back page

10,39~~8~~,000

10,396 · 1000

rounding

4. How much interest expense would Yelp.com record at the end of 2008 on Bond B?

ans is just

10 339 293 · .08

~~900,000~~ 831,442

this I think

this need practice on doing for 1

	Cash	=	(Bond payable	+ Premium)	= NBP	world interest rate	+ RE
Issue	+10396		10,000	396	10396	.08	
Paid	-900			-68.32	10327		-831.68
				Cash - RE	old net + premium		

5. Assume that at the beginning of 2008, the market rate of interest for Yelp.com Inc's bonds rose to 12 percent. Record the interest expense and the amortization of premium or discount for **Bond A** for 2008.

Interest Expense for 2008	544,467
Amortization of Premium or Discount for 2008	~~7349~~ 544,467

no cash interest payment → but must add Interest to Bond Payable

cash they got · market interest

still have to do this I think

each year the interest added to discount

amt added not total

Cash	(Bond Payable	- Discount)	= NBP	RE
+6805			+6805	
0	+544		7349	-544

(: world interest)

6. Assume that at the start of 2011, the market rate of interest for Yelp.com's bonds remained at 12 percent and that Yelp.com Inc. decided to repurchase all certificates of Bond B from its creditors at that time (the start of 2011). Repurchase means buying the bonds from their owners. How much would Yelp.com Inc have to pay to repurchase the bonds?

": did we ever do this?

: the market value

Remaining payments on Bond B relevant

MV of bonds = $\underbrace{\text{PV (~~face~~ w/ market rate) + PVOA (interest)}}_{\text{Same as at issue}}$

Has 2 types of value remaining:

FV + Coupon payments

Coupons 900

MV (10000 · 2 years, 12% interest) + PVOA (900, 2 years, 12%)

9,492

MIT Sloan School of Management
15.501 Corporate Financial Accounting
Midterm Examination
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Name: key

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Question	Possible Points	Points Scored
1	10	
2	16	
3	12	
4	17	
5	10	
6	15	
7	20	
Total	100	

Problem 1 (10 points)

bad ~~m~~ printing!

Use the table below to answer the following multiple choice questions. Circle the correct answer.

1	A	B	C	D
2	A	B	C	D
3	A	B	C	D
4	A	B	C	D
5	A	B	C	D

1. If a purchaser using a perpetual inventory system pays the transportation costs, then the
   a. Merchandise Inventory account is increased.
   b. Merchandise Inventory account is not affected.
   c. Freight-out account is increased.
   d. Delivery Expense account is increased.

2. A plant asset was purchased on January 1 for $27,000 with an estimated salvage value of $3,000 at the end of its useful life. The current year's Depreciation Expense is $3,000 calculated on the straight-line basis and the balance of the Accumulated Depreciation account at the end of the year is $15,000. The remaining useful life of the plant asset is
   a. 10 years.
   b. 8 years.
   c. 5 years.
   d. 3 years.

3. The interest charged on a $100,000 note payable, at the rate of 6%, on a 90-day note would be
   a. $6,000.
   b. $3,333.
   c. $1,500.
   d. $500.

4. The current portion of long-term debt should
   a. be paid immediately.
   b. be reclassified as a current liability.
   c. be classified as a long-term liability.
   d. not be separated from the long-term portion of debt.

5. Tanner Company is about to issue $200,000 of 5-year bonds, with a contract rate of interest of 10%, payable semiannually. The discount rate for such securities is 8%. How much can Tanner expect to receive from the sale of these bonds?
   a. $184,556.
   b. $200,000.
   c. $216,221.
   d. None of the above.

Problem 2 (16 points)

The Loktionov Procrastination Software Company purchased a machine on January 1, 2007. In addition to the purchase price paid, the following additional costs were incurred:

(a) sales tax paid on the purchase price,

(b) transportation and insurance costs while the machinery was in transit from the seller,

(c) personnel training costs for initial operation of the machinery,

(d) installation costs necessary to secure the machinery to the building flooring,

(e) major overhaul to extend the life of the machinery,

(f) lubrication of the machinery gearing before the machinery was placed into service,

(g) lubrication of the machinery gearing after the machinery was placed into service, and

(h) annual city operating license.

Instructions
Indicate whether the items (a) through (h) are capital or revenue by circling the correct answer.

(a)	Capital	Revenue
(b)	Capital	Revenue
(c)	Capital	Revenue
(d)	Capital	Revenue
(e)	Capital	Revenue
(f)	Capital	Revenue
(g)	Capital	Revenue
(h)	Capital	Revenue

Problem 3 (12 points)

Akins Asset Pricing Industries Inc. uses the straight-line method of depreciation. The company's fiscal year end is December 31. The following transactions and events occurred during the first three years.

Instructions

Prepare the necessary entries using the provided BSE worksheet.

2006 July 1 Purchased an HP computer from the Computer Center for $3,500 cash plus sales tax of $305, and shipping costs of $250.

Nov. 3 Incurred ordinary repairs on computer of $240.

Dec. 31 Recorded 2006 depreciation on the basis of a four-year life and estimated salvage value of $455

	Cash	PPE	Acc Dep		R.E	Description
July 1	(4055)	4055				Asset purch.
Nov 3	240				(240)	Repair Exp
Dec 31			450		(450)	Depn Exp

2007 Dec. 31 Recorded 2007 depreciation.

						Description
Dec 31			900		(900)	Depn Exp

2008 Jan. 1 Paid $1,800 for a major upgrade of the computer (purchased on July 1, 2006). This expenditure is expected to increase the operating efficiency and capacity of the computer.

						Description
Jan 1	(1800)	1800				Capital Expense

2006	July 1	**Dr Computer Equipment**	4,055	
		Cr Cash		4,055
	Nov. 3	**Dr Repairs Expense**	240	
		Cr Cash		240
	Dec. 31	**Dr Depreciation Expense**	450	
		Cr Accumulated Depreciation		450
		[($4,055 – $455) ÷ 4 × 1/2]		
2007	Dec. 31	**Dr Depreciation Expense**	900	
		Cr Accumulated Depreciation ($3,600 ÷ 4)		900
2008	Jan. 1	**Dr Computer Equipment**	1,800	
		Cr Cash		1,800

Problem 4 (17 points)

Roychowdhury Boxing Equipment Inc reported the following summarized annual data at the end of 2007:

Sales revenue	$1,600,000
Cost of goods sold*	800,000
Gross margin	800,000
Operating expenses	300,000
Income before income taxes	$ 500,000

*Based on an ending FIFO inventory of $250,000.

The income tax rate is 30%. The controller of the company is considering a switch from FIFO to LIFO. He has determined that on a LIFO basis, the ending inventory would have been $170,000. Assume that the opening LIFO reserve balance is $0.

Instructions

1) Restate the summary information above on a LIFO basis.

Restate to a LIFO basis:

Sales revenue	**$1,600,000**
Cost of goods sold*	**880,000**
Gross margin	**720,000**
Operating expenses	**300,000**
Income before income taxes	**$ 420,000**

***Ending inventory would be $80,000 less ($250,000 – $170,000 = $80,000) under LIFO, thereby increasing cost of goods by $80,000.**

2) What effect, if any, would the proposed change have on Sampson's income tax expense, net income, and cash flows? Show all calculations.

The taxes on the FIFO basis would be:
$500,000 × .30 = $150,000
Leaving Net Income of $350,000; ($500,000 – $150,000 = $350,000).

The taxes on the LIFO basis would be:
$420,000 × .30 = $126,000
Leaving Net Income of $294,000; ($420,000 – $126,000 = $294,000).

Income tax expense: $126,000, reduction of $24,000

Net income: $294,000, reduction of $56,000

Switching to the LIFO basis will result in $24,000 less income tax expense and less net income of $56,000. The cash effect is $24,000; ($150,000 – $126,000 = $24,000) saved in taxes if LIFO were used.

Cash flows: $ Increase of $24,000

3) If you were an owner of this business, what would your reaction be to this proposed change? Circle the correct answer and explain in no more than 3 lines.

Positive	Negative	Indifferent

Owners of the business may favor the LIFO basis since more cash will be available for use in the business. LIFO results in more cash being retained in the business since less is paid out for income taxes.

Problem 5 (10 points)

Khan & Co Inc sold the following two machines in 2007:

	Machine A	Machine B
Cost	$84,000	$60,000
Purchase date	7/1/03	1/1/04
Useful life	8 years	5 years
Salvage value	$4,000	$3,000
Depreciation method	Straight-line	Straight-line
Date sold	7/1/07	9/1/07
Sales Price	$39,000	$20,000

Instructions
Provide entries using the BSE worksheet below to update depreciation and record the sales of the two assets in 2007. The company has recorded depreciation on the machine through December 31, 2006.

Machine A

		Debit	Credit
July 1	Depreciation Expense	5,000	
	Accumulated Depreciation—Machine A		5,000
	($84,000 – $4,000) ÷ 8 years × 6/12 = $5,000		
	Cash	39,000	
	Accumulated Depreciation—Machine A*	40,000	
	Loss on Disposal ($44,000 – $39,000)	5,000	
	Machine A		84,000

*2003 ($84,000 – $4,000) ÷ 8 years × 6/12 = $5,000
04 ($84,000 – $4,000) ÷ 8 years = $10,000
05 $10,000
06 $10,000
2007 ($84,000 – $4,000) ÷ 8 years × 6/12 = $5,000
Total accumulated depreciation at date of disposal = $40,000

Cash	Mach A	Ac. Dep			RE	Details
		(5,000)			(5,000)	Depn Exp
39,000	(84,000)	40,000			(5,000)	Loss on Disp

Machine B

		Debit	Credit
Sept. 1	Depreciation Expense	7,600	
	Accumulated Depreciation—Machine B		7,600
	($60,000 – $3,000) ÷ 5 years × 8/12 = $7,600 r. to prorate		
	Cash	20,000	
	Accumulated Depreciation—Machine B**	41,800	
	Machine B		60,000
	Gain on Disposal ($20,000 – $18,200)		1,800

**2004 ($60,000 – $3,000) ÷ 5 years = $11,400
05 $11,400
06 $11,400
2007 ($60,000 – $3,000) ÷ 5 years × 8/12 = $7,600
Total accumulated depreciation at date of disposal = $41,800

Cash	Mach A	Ac. Dep			RE	Details
		(7,600)			(7,600)	Depn Exp
20,000	(60,000)	41,800			1,800	Loss on Disp

Problem 6 (15 points)

On January 2, 2006, Carrot Top Products, as lessee, leases a machine used in its operations. The annual lease payment of $10,000 is due on December 31 of 2006, 2007, and 2008. The machine reverts to the lessor at the end of three years. The lessor can either sell the machine or lease it to another firm for the remainder of its expected total useful life of five years. Carrot Top Products could borrow on a three-year collateralized loan at 12 percent. The market value of the machine at the inception of the lease is $30,000.

Instructions

Complete the following:

a. Assume that this lease qualifies as an operating lease. Give the BSE worksheet entries for Carrot Top Products over the three-year lease period.

a.) at the end of each year:
Dr Rental expense: 10,000
Cr Cash: 10,000
Dr Retained earnings: 10,000
Cr Rental expense: 10,000

b. Assume that this lease qualifies as a capital lease. Give the BSE worksheet entries for Carrot Top Products over the three-year lease period.

b.) PV of $1 annuity with n = 3, r = 12%: 2.402 (3dp) i.e. this is the PV Annuity factor (PVA)
PV of lease payments = Lease payment * PVA
= $10,000 * PVA
= $24,018 (slight adjustment from rounding)

(as a sidenote: Lecture 16, p 13 in slides, this is written as:
PV lease payments/PVA = Lease Payment)

Journal entry for Jan 2, 2006:
Dr Leased asset: $24,018
Cr Lease liability: 24,018

Journal entry for Dec 31, 2006:
Dr Interest expense: 2,882 (12% of 24,018)
Dr Lease liability: 7,118 ($10,000 lease payment – interest expense)
Cr Cash: 10,000
Dr Depreciation expense: 8,006
Cr Accumulated depreciation: 8,006

Journal entry for Dec 31, 2007:
Dr Interest expense: 2,028 (12% of 24,018 – 7,118 = 16,900)
Dr Lease liability: 7,972 ($10,000 lease payment – interest expense)
Cr Cash: 10,000
Dr Depreciation expense: 8,006
Cr Accumulated depreciation: 8,006

Journal entry for Dec 31, 2006:
Dr Interest expense: 1,071 (12% of 24,018 – 7,118 – 7,972 = 8,929)
Dr Lease liability: 8,929 ($10,000 lease payment – interest expense)
Cr Cash: 10,000
Dr Depreciation expense: 8,006
Cr Accumulated depreciation: 8,006

Problem 7 (20 points)

In recent times, Yelp.com Inc has not had any significant amount of long-term debt. However, assume that at the beginning of 2008, Lynn Li, the Yelp.com Inc CEO, is considering the option of using debt financing to fund growth plans. At this time, Yelp.com Inc faces a 8% market rate of interest.

Having consulted with Lehman Brothers Inc, Yelp.com Inc's investment banking advisors, Yelp.com Inc is considering the following two alternatives:

Zero-Coupon Bond (Bond A) - Face Value = $10,000
Maturity = 5 years

Regular Bond (Bond B) - *Face Value = $10,000*
Maturity = 5 years
Coupon Rate = 9%

Assume that all coupons are annual and paid out at the end of each year. Using the information above, answer the following questions.

Show all calculations.

1. Assume that Yelp.com issues 1000 certificates of Bond A at the beginning of 2008. How much cash would Yelp.com be able to raise from this sale?

1000 * PV (10,000, r=8, n=5) = $6,805,832

2. How much interest expense would Yelp.com record at the end of 2008 on Bond A?

$6,805,832* 0.08 = $544,467

3. Assume that Yelp.com issues **1000** certificates of Bond B at the beginning of 2008. How much cash would Yelp.com Inc. be able to raise from this sale?

Note that the PV of cash flows is discounted at the MARKET interest rate of 8%
PVOA (n = 5, r = 8%) x $900 = 3.99271 x 900 = $3,593,439
PV of (10,000, n = 5, r = 8%) = 0.68058 x 10,000 = $6,805,800
Total = $10,399,293

4. How much interest expense would Yelp.com record at the end of 2008 on Bond B?

$10,399,293 * 0.08 = $831,942

5. Assume that at the beginning of 2008, the market rate of interest for Yelp.com Inc's bonds rose to 12 percent. Record the interest expense and the amortization of premium or discount for **Bond A** for 2008.

Interest Expense for 2008		$544,467 (the change in market rate does NOT change the interest expense from part #2)
Amortization of Premium or Discount for 2008		$544,467

6. Assume that at the start of 2011, the market rate of interest for Yelp.com's bonds remained at 12 percent and that Yelp.com Inc. decided to repurchase all certificates of Bond B from its creditors at that time (the start of 2011). Repurchase means buying the bonds from their owners. How much would Yelp.com Inc have to pay to repurchase the bonds?

At this stage, the remaining payments on Bond B are relevant. The market value of the bonds, which is the amount Yelp.com Inc would have to pay in order to repurchase 1000 certificates of Bond B, is equal to the present value, using the current market rate of interest, of all future payments on Bond B starting in 2010. Bond B has two types of payment remaining, the face value at the time of maturity and annual coupon payments at the end of each year.

9%

Coupon Payment = Face Value x Coupon Rate = $10,000,000 x 9% = $800,000
Market Value = PV ($10,000 x 1000, 2 years, 12% interest rate)
+ PV ($900 annuity x 1000, 2 years, 12% interest rate)

Market Value = $10,000,000 / (1+12%)^ 2 +$1000 x 900 x PVA (r = 8%, n = 2)
= $7,971,939 + $1,521,045 = $9,492,985

11/16

MITSloan MANAGEMENT	15.501/15.516 Corporate Financial Accounting Exam 2 November 18, 2009

Practice

Name: Michael D Plasr

Instructions:

1) The exam length is 1 hour and 20 minutes.
2) A non-programmable calculator may be used for computation purposes during the exam. No other materials are to be used during the exam.
3) Write your answers in the space provided and show any supporting computations you make. Do not attach additional material.
4) If you feel assumptions are necessary to answer a question, state all assumptions clearly.

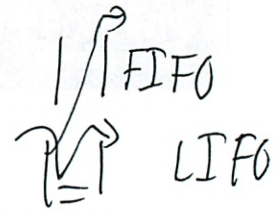
Manage your time efficiently.

Question	Possible Points	Actual Points
1	16	
2	20	
3	12	
4	22	
5	12	
6	12	
Total	94	

Question 1 –Effects of Accounting Choice (16 points)

1. (5 points) Determine whether using LIFO during periods of rising prices and stable or increasing inventory quantities will produce the following that are greater than (>), less than (<), or equal to (=) what they would be under FIFO. ahh

   COGS LIFO __>__ FIFO ✓
   Ending inventory balance LIFO __<__ FIFO ✓
   Net income LIFO __<__ FIFO ✓
   Taxes LIFO __<__ FIFO ✓
   Cash flows) from paying) LIFO __>__ FIFO

   oh duh paying less of than

2. (7 points) Under straight line depreciation, are the following greater than (>), less than (<), or equal to (=) what they would be under accelerated depreciation in the *earliest* years of the asset's life. (Note that the relationship is reversed in later years.)

   Depreciation expense Straight line __<__ Accelerated
   Net income Straight line __>__ Accelerated
   Assets Straight line __>__ Accelerated
   Equity Straight line __>__ Accelerated RE remember
   Return on assets Straight line __>__ Accelerated - assets bigger and net income bigger
   Return on equity Straight line __>__ Accelerated
   Total asset turnover ratio Straight line __<__ Accelerated

   revenue ← same
   assets ← larger | so smaller, so bigger
   (under straight line)

3. (4 points) Determine whether a capital lease will cause the following financial statement totals and ratios to be greater than (>), less than (<), or equal to (=) what they would be under an operating lease.

   in magnitude, or signed value
   assuming

   Financial Statement Totals & Financial Ratios
   Assets Capital __>__ Operating guess
   Liabilities Capital __>__ Operating
   Net income (in the early years) Capital __<__ Operating ; depreciation
   Total income over lease life Capital __=__ Operating

Question 2 – Leases (20 points)

Excerpts from the notes to the financial statements of the Furyan Corporation for the year ending January 31, Year 9, appear below (amounts in millions).

Long-term Lease Obligations. The company and certain of its subsidiaries maintain long-term leases for stores and equipment. Aggregate minimum annual rentals at January 31, Year 9, under leases appear below. Assume that Furyan makes lease payments at the end of each fiscal year.

Fiscal Year Ending January 31:	Capital Leases	Operating Leases
Year 10	$ 204.7	$ 249.3
Year 11	$ 205.2	$ 238.2
Year 12	$ 204.6	$ 229.6
Year 13	$ 204.8	$ 220.7
Year 14	$ 204.7	$ 224.1
After Year 14	$ 2,859.7	$ 2,409.6
Total	$ 3,883.7	$ 3,571.5
Less Interest at 11 Percent	$ (2,189.5)	
Capital Lease Liability	$ 1,694.2	

use this # for te liability

a. (5 points) Prepare the journal entries or T-accounts to record cash payments under capital leases during fiscal Year 10.

	Cash	=	Liabilities	RE
Depreciation				
Lease Payment	−204.7		− ~~182.18~~ 18.3	− ~~22.51~~ 186.4
			than to split	Interest

duh can't just pay interest on payment — think!

b. (5 points) Prepare journal entries or T-accounts to record cash payments under operating leases during fiscal Year 10.

	Cash	RE
Lease payment	− 249.3	−249.3
		Lease payment

PV at market interest rate

c. (10 points) Assume that the present value of Furyan's operating lease commitments when discounted at 12% is $1,586.5 million on January 31, Year 9, and that these leases have a remaining life of 15 years. Give the journal entries or T-accounts to convert these operating leases into capital leases as of January 31, Year 9, and to account for them as capital leases for the year ending January 31, Year 10. ?can you do

- treat just like a new lease

in millions

	Cash	Assets	= Liabilities	+ RE
Sign Lease		+ 1,586.5	+ 1586.5	✓
Depreciation		-105.76		-105.76 ✓
Lease Payment	~~-204~~ -249		- ~~136.62~~ 58.9	-190.38

? what is the lease payment? ? the old operating leases — think

? very small principal payment

? what is intrest - current liability

~~? could I calculate total~~

Close

Review "Accumulated Depreciation"

↳ Asset on balance sheet XA

- Offsets the asset account

Depreciation Expense - ~~E~~RE Category

Question 3 – Stockholders' Equity (12 points)

Based on the following summary of stockholders' equity accounts for the Hunter-Gratzner Company, answer the following questions. No dividends were declared or paid during Year 1 or Year 2.

	December 31, Year 1	December 31, Year 2
Common Stock, $5 par value	$ 1,000,000	$ 1,250,000
Additional Paid-In Capital	1,500,000	2,000,000
Retained Earnings	2,000,000	2,500,000
Less: Treasury Stock	(200,000)	(224,000)
Total Stockholders' Equity	$ 4,300,000	$ 5,526,000

a) (3 points) What was net income during Year 2?

~~22,00~~ 2,500,000 – 2,000,000

500,000 – duh was thinking

b) (3 points) What was the cost per share of treasury stock acquired during Year 2 if 2,000 additional shares were acquired during the year?

$$\frac{24{,}000}{2{,}000} = \$12$$

c) (3 points) How many additional common shares were issued in Year 2?

$$\frac{250{,}000}{5} = 50{,}000$$

d) (3 points) At what price did the company issue additional common shares in Year 2? Assume that the issuance of stock was the only transaction affecting Additional Paid-In Capital.

$$\frac{500{,}000}{50{,}000} = \$10$$ + Par $5 = $15

finally a nice q

but still tricky

Why can't I get this down

This one also more complex w/ 2/year

Question 4 – Bond Accounting (22 points)

Coupon rate

"contract ~~market interest rate~~"

Aereon Corporation issues on January 2, Year 1, 8 percent semiannual coupon bonds maturing three years from the date of issue with a face value of $100,000. The coupons, dated for January 1 and July 1 of each year, each promise 4 percent of the face value (8 percent total each year). The firm issues the bonds to yield 10 percent, compounded semi-annually.

issued at ~~premium~~ discount

market rate;

a. (5 points) What are the issue proceeds received by Aereon Corporation?

discounted to market rate

b. (10 points) Give the journal entries or T-accounts relating to these bonds for the first year. Aereon Corporation uses a calendar year for its accounting period.

c. (7 points) Assume that on January 2, Year 2, Aereon Corporation reacquires $20,000 face value of these bonds for 102 percent of par and retires them. Give the journal entries or T-accounts to record the retirement.

Question 5 – Long Term Assets (12 points)

A machine was purchased by the Riddick Corporation for $37,000 and depreciated for five years on a straightline basis under the assumption it would have a ten-year life and a $1,000 salvage value. At the beginning of the machine's sixth year it was recognized that the machine had three years of remaining life instead of five and that at the end of the remaining three years its salvage value would be $1,600. What amount of depreciation should be recorded in each of the machine's remaining three years?

$\frac{36,000}{10} = 3,600$

So 5 years = 18000

18,000 value left

~~18,000~~ =

$\frac{19,000 - 1,600}{3} = 5,800$

0

- never did qu on OCI

Question 6 – DuPont Analysis (12 points)

The following data show five items from the financial statements of two companies for a recent year (amounts in millions):

	Johns	Toombs
For Year		
Revenues	$ 4,076	$ 4,624
Income before Interest and Related Taxes[a]	$ 268	$ 772
Net Income to Common Shareholders[b]	$ 268	$ 761
Average during Year		
Total Assets	$ 2,472	$ 4,392
Common Shareholders' Equity	$ 1,903	$ 2,595

[a]Net Income + [Interest Expense * (1 – Tax Rate)]
[b]Net Income + Preferred Stock Dividends

Study ratios - though fairly obvious

a. (6 points) Compare the rate of return on assets for each company. Disaggregate the rate of return on assets into profit margin for ROA and total assets turnover components.

~~Assets~~ $\frac{\text{Income before TD}}{\text{Assets}}$ $\frac{268}{2472} = .10$ ✓ $\frac{772}{4392} = .175$ ✓

= Profit margin asset turnover

$\frac{\text{Income before T,D}}{\text{Revenue}} \cdot \frac{\text{Revenue}}{\text{Assets}}$

also when x they cancle out

← think through ratios make sens

b. (6 points) Compute the rate of return on common shareholders' equity for each company. Disaggregate the rate of return on common shareholders' equity into profit margin for ROCE (return on common equity), total assets turnover, and capital leverage ratio components.

ROCE = Profit Marging · Asset Turnover · Leverage

$\frac{\text{Net income to shareholders}}{\text{SEquity}}$ = ~~Revenue / Total assets~~ · a

$\frac{\text{net income shareholders}}{\text{revenue}} \cdot \frac{\text{revenue}}{\text{assets}} \cdot \frac{\text{assets}}{\text{equity}}$

Did we study these?

again cancles

MITSloan MANAGEMENT

15.501/15.516
Corporate Financial Accounting

Exam 2
November 18, 2009

Name: KEY

Instructions:

1) The exam length is 1 hour and 20 minutes.
2) A non-programmable calculator may be used for computation purposes during the exam. No other materials are to be used during the exam.
3) Write your answers in the space provided and show any supporting computations you make. Do not attach additional material.
4) If you feel assumptions are necessary to answer a question, state all assumptions clearly.

Manage your time efficiently.

Question	Possible Points	Actual Points
1	16	
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Total	94	

Question 1 –Effects of Accounting Choice (16 points)

1. (5 points) Determine whether using LIFO during periods of rising prices and stable or increasing inventory quantities will produce the following that are greater than (>), less than (<), or equal to (=) what they would be under FIFO.

COGS	LIFO __>__ FIFO
Ending inventory balance	LIFO __<__ FIFO
Net income	LIFO __<__ FIFO
Taxes	LIFO __<__ FIFO
Cash flows	LIFO __>__ FIFO

2. (7 points) Under straight line depreciation, are the following greater than (>), less than (<), or equal to (=) what they would be under accelerated depreciation in the *earliest* years of the asset's life. (Note that the relationship is reversed in later years.)

Depreciation expense	Straight line __<__ Accelerated
Net income	Straight line __>__ Accelerated
Assets	Straight line __>__ Accelerated
Equity	Straight line __>__ Accelerated
Return on assets	Straight line __>__ Accelerated
Return on equity	Straight line __>__ Accelerated
Total asset turnover ratio	Straight line __<__ Accelerated

3. (4 points) Determine whether a capital lease will cause the following financial statement totals and ratios to be greater than (>), less than (<), or equal to (=) what they would be under an operating lease.

Financial Statement Totals & Financial Ratios	
Assets	Capital __>__ Operating
Liabilities	Capital __>__ Operating
Net income (in the early years)	Capital __<__ Operating
Total income over lease life	Capital __=__ Operating

Question 2 – Leases (20 points)

Excerpts from the notes to the financial statements of the Furyan Corporation for the year ending January 31, Year 9, appear below (amounts in millions).

Long-term Lease Obligations. The company and certain of its subsidiaries maintain long-term leases for stores and equipment. Aggregate minimum annual rentals at January 31, Year 9, under leases appear below. Assume that Furyan makes lease payments at the end of each fiscal year.

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Year 14	$ 204.7	$ 224.1
After Year 14	$ 2,859.7	$ 2,409.6
Total	$ 3,883.7	$ 3,571.5
Less Interest at 11 Percent	$ (2,189.5)	
Capital Lease Liability	$ 1,694.2	

a. (5 points) Prepare the journal entries or T-accounts to record cash payments under capital leases during fiscal Year 10.
(2 points for interest expense, 3 for entries)

Interest Expense (=.11*1,694.2)	**186.4**	
Lease Liability (Plug)	**18.3**	
Cash (Given)		**204.7**

b. (5 points) Prepare journal entries or T-accounts to record cash payments under operating leases during fiscal Year 10.
(2 points for amount, 3 for accounts)

Rent Expense	**249.3**	
Cash		**249.3**

c. (10 points) Assume that the present value of Furyan's operating lease commitments when discounted at 12% is $1,586.5 million on January 31, Year 9, and that these leases have a remaining life of 15 years. Give the journal entries or T-accounts to convert these operating leases into capital leases as of January 31, Year 9, and to account for them as capital leases for the year ending January 31, Year 10.

<u>January 31, Year 9</u> (3 points)

Leased Asset	**1,586.5**	
Lease Liability		**1,586.5**

<u>January 31, Year 10</u> (4 points)
Now that the leases are capital leases, we need to account for the interest expense, payment, and depreciation.

Interest Expense (=.12*1,586.5)	**190.4**	
Lease Liability	**58.9**	
Cash		**249.3**

(3 points)
Depreciation = 1,586.5/15 = 105.8

Depreciation Expense	**105.8**	
Accumulated Depreciation		**105.8**

Question 3 – Stockholders' Equity (12 points)

Based on the following summary of stockholders' equity accounts for the Hunter-Gratzner Company, answer the following questions. No dividends were declared or paid during Year 1 or Year 2.

	December 31, Year 1	December 31, Year 2
Common Stock, $5 par value	$ 1,000,000	$ 1,250,000
Additional Paid-In Capital	1,500,000	2,000,000
Retained Earnings	2,000,000	2,500,000
Less: Treasury Stock	(200,000)	(224,000)
Total Stockholders' Equity	$ 4,300,000	$ 5,526,000

a) (3 points) What was net income during Year 2?

$500,000 = (2,500,000 - 2,000,000)

b) (3 points) What was the cost per share of treasury stock acquired during Year 2 if 2,000 additional shares were acquired during the year?

$12 = ((224,000 - 200,000) / 2,000)

c) (3 points) How many additional common shares were issued in Year 2?

50,000 = ((1,250.000 - 1,000,000) / 5)

d) (3 points) At what price did the company issue additional common shares in Year 2? Assume that the issuance of stock was the only transaction affecting Additional Paid-In Capital.

$15 = APIC + Par = $10 + $5

APIC = $10 = (2,000,000 - 1,500,000) / 50,000

Question 4 – Bond Accounting (22 points)

Aereon Corporation issues on January 2, Year 1, 8 percent semiannual coupon bonds maturing three years from the date of issue with a face value of $100,000. The coupons, dated for January 1 and July 1 of each year, each promise 4 percent of the face value (8 percent total each year). The firm issues the bonds to yield 10 percent, compounded semi-annually.

a. (5 points) What are the issue proceeds received by Aereon Corporation?
(2 points for procedure, 3 for inputs/output)
100,000*.74622 (for six periods since coupons are twice/year) = $74,622
4,000*5.07569 = $20,303
Issue price = $74,622 + $20,303 = $94,925

b. (10 points) Give the journal entries or T-accounts relating to these bonds for the first year. Aereon Corporation uses a calendar year for its accounting period.

<u>January 2, Year 1</u> (3 points)		
Cash	**94,925**	
Bond Discount	**5,075**	
Bonds Payable		**100,000**
<u>June 30, Year 1</u> (3 points)		
Interest Expense (= 94,925*.05)	**4,746**	
Interest Payable		**4,000**
Bond Discount		**746**
<u>July 1, Year 1</u>		
Interest Payable	**4,000**	
Cash		**4,000**

Note that the Net Bond Payable (NBP) total is now $95,671 (= 94,925 + 746).

<u>December 31, Year 1</u> (4 points)		
Interest Expense (= 95,671 * .05)	**4,784**	
Interest Payable		**4,000**
Bond Discount		**784**

c. (7 points) Assume that on January 2, Year 2, Aereon Corporation reacquires $20,000 face value of these bonds for 102 percent of par and retires them. Give the journal entries or T-accounts to record the retirement.
(2 points for right amounts, 5 for entries)
Note that the NBP total is now 96,455.

Bonds Payable	**20,000**	
Loss on Retirement of Bonds	**1,109**	
Cash (= 20,000*1.02)		**20,400**
Bond Discount (=20,000 - . 20*96,455)		**709**

Question 5 – Long Term Assets (12 points)

A machine was purchased by the Riddick Corporation for $37,000 and depreciated for five years on a straightline basis under the assumption it would have a ten-year life and a $1,000 salvage value. At the beginning of the machine's sixth year it was recognized that the machine had three years of remaining life instead of five and that at the end of the remaining three years its salvage value would be $1,600. What amount of depreciation should be recorded in each of the machine's remaining three years?

Each part is 3 points

Original Depreciation = (37,000 – 1,000)/10 = 3,600

Acc Depreciation after 5 years = 5*3,600 = 18,000

Value of machine undepreciated after 5 years = 37,000 – 18,000 = 19,000

Depreciation per year in last 3 years = (19,000 – 1,600)/3 = 5,800

Question 6 – DuPont Analysis (12 points)

The following data show five items from the financial statements of two companies for a recent year (amounts in millions):

	Johns	Toombs
For Year		
Revenues	$ 4,076	$ 4,624
Income before Interest and Related Taxes[a]	$ 268	$ 772
Net Income to Common Shareholders[b]	$ 268	$ 761
Average during Year		
Total Assets	$ 2,472	$ 4,392
Common Shareholders' Equity	$ 1,903	$ 2,595

[a]Net Income + [Interest Expense * (1 – Tax Rate)]
[b]Net Income + Preferred Stock Dividends

a. (6 points) Compare the rate of return on assets for each company. Disaggregate the rate of return on assets into profit margin for ROA and total assets turnover components.

	ROA =	Profit Margin	*	Asset Turnover
Johns:	**268/2,472 =**	**268/4,076**	*	**4,076/2,472**
	10.8% =	**6.6%**	*	**1.65**
Toombs:	**772/4,392 =**	**772/4,624**	*	**4,624/4,392**
	17.6% =	**16.7%**	*	**1.05**

b. (6 points) Compute the rate of return on common shareholders' equity for each company. Disaggregate the rate of return on common shareholders' equity into profit margin for ROCE (return on common equity), total assets turnover, and capital leverage ratio components.

ROCE = Profit Margin	*	Asset Turnover	*	Leverage
Johns:				
268/1,903 = 268/4,076	*	**4,076/2,472**	*	**2,472/1,903**
14.1% = 6.6%	*	**1.65**	*	**1.30**
Toombs:				
761/2,595 = 761/4,624	*	**4,624/4,392**	*	**4,392/2,595**
29.3% = 16.5%	*	**1.05**	*	**1.69**

A few ratios

1/16

- from book

$$EPS = \frac{\text{net income} - \text{dividend}}{\text{Shares outstanding}}$$

$$\text{rate of return} = \frac{\text{Income before tax, interest}}{\text{Assets}}$$

$$\text{profit margin} = \frac{\text{Income before tax, interest}}{\text{Revenue}}$$ is a % so must be < 1

$$\text{asset turnover} = \frac{\text{revenue}}{\text{assets}}$$ should be > 1

$$\text{return on common equity} = \frac{\text{net income to shareholders}}{\text{shareholder equity}}$$

$$= \text{profit margin} \cdot \text{asset turnover} \cdot \text{leverage}$$

$$\text{profit margin} = \frac{\text{net income to shareholders}}{\text{revenue}}$$

$$\text{asset turnover} = \frac{\text{revenue}}{\text{assets}}$$

$$\text{leverage} = \frac{\text{assets}}{\text{equity}}$$

(2)

Times interest earned = $\frac{\text{Income before taxes + interest}}{\text{Interest expense}}$ <1 "times"

- indicates companies ability to meet interest ~~rates~~ payments

~~PPPE~~

PPE Turnover = PPET = $\frac{\text{Sales}}{\text{Avg PPE expenses}}$

Bonds

11/17

Clarification on value of bond

PV of face value (at market/discount rate) + $\underbrace{\qquad}_{\text{PVOA using discount rate}}$ · coupon rate · principal

Then get total value + compare is it discount/premium

Interest expense + more

~~Cash payment~~ Interest expence = Net bond payable · $\underbrace{.08}_{\text{market/discount rate}}$ = ammortization of premium/discount

what they collected in

Then Cash payment = Face value · coupon rate

Δ in discount/premium = Cash payment − Interest

new Net Bond Payable = old NBP $\pm$ Δ in discount/premium