2.96 - Management in Engineering, Fall 2004
Massachusetts Institute of Technology
Department of Mechanical Engineering
Instructors: Professor Jung-Hoon Chun and Professor Alexander d'Arbeloff

Massachusetts Institute of Technology 2.96 Management for Engineers Professor Jung-Hoon Chun Practice Exam Oct. 20, 2004 TA

Practice Quiz

(Fall 2003 Exam)

• This quiz is closed book

Problem 1: Financial Interpolation [20 pts] Complete the missing values from (a) to (i) in the chart below. Show your calculations. Note that the first year of operations is 2001.

CONSOLIDATED BALANCE SHEET

	2003	2002	2001
Assets			
Cash	600	500	100
Accounts Receivable	500	400	400
Inventory	400	350	(a)
Land	300	250	250
Property, plant, and equipment	900	(d)	600
Liabilities and Stockholder's Equity			
Accounts Payable	(g)	500	200
Bonds Payable	600	400	600
Contributed Capital	900	500	500
Retained Earnings	900	(e)	100
Sales	2000	(f)	1000
Expenses	(h)	(800)	(500)
Net Income	(i)	800	(b)
Dividends	500	0	(c)

(a) (Write an equation, solve it)

(b)

(c)

(d)

(e)

(f)

(g)

(h)

(i)

Problem 2: Cash Flow Statement [20 pts]

Use the Balance sheet and Income statement on the following pages to generate a cash flow statement for the same period in the space below.

CONSOLIDATED STATEMENT OF CASH FLOWS FOR TEST CORPORATION

CONSOLIDATED BALANCE SHEET FOR TEST CORPORATION				
PERIOD ENDING	1-Sep-02	2-Sep- <mark>01</mark>		
Assets	1	1		
Current Assests				
Cash And Cash Equivalents	806	603		
Short Term Investments	0	5		
Accounts Receivables	475	325		
Inventory	3,100	2,800		
Other Current Assets	223	212		
Total Current Assets	4,604	3,945		
Property Plant and Equipment				
Land	2,010	1,890		
Buildings and leaseholds	4,400	<mark>3,800</mark>		
Equipment and Fixtures	1,730	1,530		
Construction in progress	200	120		
	8,340	7,340		
Less Accumulated Depreciation	(1,790)	(1,708)		
Total	6,650	5,632		
Other Assets	420	380		
Total Assets	11,574	9,957		
Liabilities				
Current Liabilities				
Accounts Payable	3,637	3,364		
Short/Current Long Term Debt	105	195		
Other Current Liabilities	708	554		
Total Current Liabilities	4,450	4,113		
Long Term Debt	1,160	860		
Deferred Long Term Liability Charges	145	120		
Commitment in Minority Interest	129	115		
Total Liabilities	5,884	5,208		
Stockholder's Equity				
Preferred stock \$.005 par value	0	0		
Common stock \$.005 par value; 455,325 outstand	ing 3	3		
Retained Earnings	4,620	3,958		
Additional Paid-in Capital	1,067	788		
Total Stockholder Equity	5,690	4,749		

CONSOLIDATED INCOME STATEMENT FOR TEST CORPORATION

PERIOD ENDING	1-Sep-02	2-Sep- <mark>01</mark>
Total Revenue	38,700	34,800
Cost of Revenue	33,900	30,600
Gross Profit	4,800	4,200
Operating Expenses		
Selling General and Administrative	3,624	3,200
Depreciation and amortization	82	18
Total Operating Expenses	3706	3218
Operating Income or Loss	1,094	982
Income from Continuing Operations		
Total Other Income/Expenses Net	35	43
Earnings Before Interest and Taxes	1,129	1,025
Interest Expense	(29)	(32)
Income Before Tax	1,100	1,000
Income Tax Expense	438	401
Net Income From Continuing Ops	662	599
Non-recurring Events		
Discontinued Operations		
Net Income		
Preferred Stock and Other Adjustments	0	0
Net Income Applicable To Common Shares	662	599

Problem 3: Handling Transactions [10 pts]

(1) Explain in words how transactions are posted to accounts. Provide a rule explaining how to decide whether to debit or credit each amount in a transaction.
(2) Explain how you would treat each of the following transactions for the TEST
CORPORATION. Use the list of accounts from Problem 2.
(a) The firm purchases a fancy \$X testing machine and receives a bill due in 30 days.
(b) The first issues a 10 year bond for \$Y.