ENG 111 Homework 1 Solutions

Mel Bulu-Taciroglu

1. (20 points) AGENCY PROBLEM

After reading the following short article, answer the subsequent question with one or two sentences:

http://www.forbes.com/sites/timworstall/2013/03/01/solving-the-principal-agent-problem-apple-insists-that-executives-must-hold-company-stock/#1a1501227728

Why were stock options introduced?

In order to align the manager and owners interests. (20 points)

2. (20 points) FINANCIAL STATEMENTS

Publicly traded companies file their financial statements with SEC (Securities Exchange Commission) periodically. 10K report refers to their annual filings and 10Q refers to their quarterly filings . You can access this information from company webpage, usually via a link such as "investor relations", "legal", or "company information".
Every publicly traded company has such a link for investors on their webpage where they have their filed financial statements. Additionally you can find financial information on aggregator sites such as yahoo.finance, marketwatch.com as well as on stock exchange websites such as nyse.com and nasdaq.com. Using APPLE and GAMESTOP's Balance Sheet for years ending 2018 and 2019, fill out the following table:

In Millions $	***Current Assets***	***Current Liabilities***	***Equity***	***Net Working Capital***
AAPL 2018	131,339	116,866	107,147	*14,473*
AAPL 2019	162,819	105,718	90,488	*57,101*
% Change	*23.97*	*-9.54*	*-15.55*	*294.53*
GME 2018	3,018	1,931	2,215	*-99.48*
GME 2019	3,128	2,181	1,336	*-133.78*
% Change	*3.64*	*12.95*	*-39.68*	*34.47*

Identify the percentage change in these accounts from 2018 to 2019.
What can you say about the financial health of these companies ONLY based on the above information?

Each red cell is 2 points (a total of 16 points)

Apple's Net Working Capital(NWC) is positive significantly improved from 2018 to 2019 whereas Game Stop has negative and deteriorating NWC. (2 points)

Equity went down for both companies from 2018 to 2019, however, this is excepted due to Covid related recession. (2 points)

Based solely on these numbers, we can conclude that Apple is financially in better shape compared to GameStop.

3. (20 points) Use the following information for Company COLTIB to create the Balance Sheet for 2018 and 2019. ~~Tax rate is 30% for both 2018 and 2019~~ (You do not need this info for this question, it will be needed for a follow up question in HW2)

	2018	***2019***
Accumulated Depreciation as of Dec 31st	2,500	3,000
Cash as of Dec 31st	300	800
Accounts Receivable as of Dec 31st	250	310
Short-term Notes Payable as of Dec 31st	450	317
Long-term Debt as of Dec 31st	1,800	2,000
Total Gross Fixed Assets as of Dec 31st	8,000	8,000
Accounts Payable as of Dec 31st	500	300
Inventory as of Dec 31st	600	640
Accumulated Retained Earnings	You should find it, given that this is the only non-zero account under Equity!	

BALANCE SHEET	2018	2019
Cash	300	800
Accounts Receivable	250	310
Inventory	600	640
Total Current Assets	1,150	1,750
Total Gross Fixed Assets as of Dec 31st	8,000	8,000
Accumulated Depreciation	2,500	3,000
Net Fixed Assets	5,500	5,000
TOTAL ASSETS	6,650	6,750
Accounts Payable as of Dec 31st	500	300
Short-term Notes Payable	450	317
Total Current Liabilities	950	617
Long-term Debt as of Dec 31st	1,800	2,000
Accumulated Retained Earnings	3,900	4,133
TOTAL LIABILITIES & EQUITY	6,650	6,750

Takeoff 2 points for each incorrect cell.

Accumulated Retained Earnings can be found a follows:

Total Asset = Total Liabilities + Total Equity

2018 Retained Earnings = 6,650 - 950 - 1,800 = 3,900
2019 Retained Earnings = 6,750 - 617 - 2,000 = 4,133

4. (20 points) Balance Sheet of the Green Co. for the end of 2020 year is given below. Company is planning on making a profit of $120,000 in year 2021. Assume that the operations of the company will unfold in such a way to keep the short term assets and the liabilities accounts the same at the end of year 2021. If Green Co. wants to keep its Net Working Capital as before and does not want to buy any fixed assets, what are the options open to the company given that there will be no dividends distributed in 2021. Please clearly state your assumptions and provide the projected Balance Sheet for the end of 2021.

ASSETS	
Current assets	
Cash and cash equivalents	$ 100,000
Accounts receivable	20,000
Inventory	15,000
Prepaid expense	4,000
Investments	10,000
Total current assets	149,000
Property and equipment	
Land	24,300
Buildings and improvements	250,000
Equipment	50,000
Less accumulated depreciation	(5,000)
Other assets	
Intangible assets	4,000
Less accumulated amortization	(200)
Total assets	$ 472,100

LIABILITIES AND SHAREHOLDERS' EQUITY	
Current liabilities	
Accounts payable	$ 30,000
Notes payable	10,000
Accrued expenses	5,000
Deferred revenue	2,000
Total current liabilities	47,000
Long-term debt	200,000
Total liabilities	247,000
Shareholders' Equity	
Common stock	10,000
Additional paid-in capital	20,000
Retained earnings	197,100
Treasury stock	(2,000)
Total liabilities and shareholders' equity	$ 472,100

Given that short term assets, short term liabilities as well as the fixed assets will stay the same in 2021 (we do not know how much the fixed assets will depreciate in 2021), when the company makes a profit of $120,000, the retained earnings will go up! That is, there is cash coming into the Balance Sheet, however, according to the question's restrictions, we cannot put this amount in the cash account. Neither we can buy fixed assets. Even if we assumed that there was some depreciation in the fixed assets and we replaced the depreciation, there would still be funds leftover and the balance sheet would not be in balance.

We can pay back long term debt! (10 points)
We can buy back stock, that is we can add to the treasury stock (10 points)

5. (20 points) Balance Sheet and Income Statement of the Performance Corporation are given as of the end of 2100. If the company wants to have its operations so as to have the same Income Statement and Cash Account at the end of 2101 and does not want to distribute any dividends, what are the options open to Performance. You do not need to reproduce the financial statements. It is enough to enumerate the options available to the company.

PERFORMANCE CORPORATION
Income Statement
For the Year Ended December 31, 2100

Revenues:			
Sales		$180,000	
Services		52,000	
Total revenues			$232,000
Expenses:			
Cost of goods sold		$ 90,000	
Selling expenses		25,000	
Depreciation expense		12,000	
Salaries and wages	62,000		
Total expenses (excluding income tax)			189,000
Pretax income			43,000
Income tax expense (25% x $43,000)			10,750
Net income			$32,250

PERFORMANCE CORPORATION
Balance Sheet
At December 31, 2100

Assets			
Cash			$ 32,000
Accounts receivable (from customers)			13,000
Merchandise inventory (for resale)		42,000	
Supplies inventory (for use in rendering services)		15,000	
Service vehicles	$50,000		
Less accumulated depreciation	(12,000)		38,000
Total assets			$140,000
Liabilities			
Accounts payable (to suppliers)			$17,750
Note payable (to bank)			25,000
Total liabilities			42,750
Stockholders' equity			
Common stock, 6,500 shares	$65,000		
Retained earnings	32,250		
Total stockholders' equity			97,250
Total liabilities and stockholders' equity			$140,000

Retained Earnings will increase by $32,250. Cash will not go up, then:

1. *Inventory can go up (4 points)*
2. *Service Vehicles can go up (4 points)*
3. *Accounts payable can go down (this alone will not balance the balance sheet since the $17,750 < $ $32,250) (4 points)*
4. *Notes Payable can go down (this alone will not balance the balance sheet since the $17,750 < $ $32,250) (4 points)*
5. *Company can buyback stock (4 points)*