UCLA ENG 111 MIDTERM SOLUTIONS FALL 2015 Meliha Bulu Taciroglu

Multiple Choice Questions (3 points each)

1. Which of the following is NOT a mechanism that helps aligning management and owner interests?

a) Possibility of a hostile takeover
b) Possibility of a proxy fight
c) Manager's reputation within the financial community
d) Tying managerial pay to the stock price of the company
e) Buying back company's stocks

2. Which of the following is NOT a reasonable action for a company that is trying to introduce a new product to the market (e.g. Tesla)?

a) Get ahead of the competition by borrowing.
b) Until making positive profit, rely on internal funds.
c) Increase the financial leverage as the market demand and the production process require.
d) Keep a high equity multiplier according to the needs of the company.
e) Allow borrowing a long as it helps boost company's market share.

3. If the plowback ratio is 1, you can say for sure that

a) Sustainable growth rate is positive.
b) Internal growth rate is zero.
c) External financing need is zero.
d) Internal growth rate is positive
e) There may or may not be an increase in retained earnings.

4. Occasionally, companies buy back their own stocks. Which of the following is the least likely reason for a stock buyback?

a) Satisfy financial ratio targets
b) Invest in the company itself
c) Sending a signal to the market that company is overvalued
d) Increasing per outstanding share value
e) Increase D/E ratio

5. If a firm has $100 in inventories, a current ratio equal to 1.2, and a quick ratio equal to 1.1, what is the firm's Net Working Capital?

a) $0
b) $100
c) $200
d) $1,000
e) $1,200

CA/CL=1.2, (CA-100)/CL=1.1,

CA=1.2CL (1.2CL-100)/CL=1.1, CL=1,000, CA=1,200, NWC=200

6. If a firm bases its growth projection on the rate of sustainable growth, and shows positive net income as well as positive plowback ratio then the:

a) fixed assets will have to increase at the same rate, regardless of the current capacity level.
b) number of common shares outstanding will increase at the same rate of growth.
c) debt-equity ratio will have to increase.
d) debt-equity ratio will remain constant while retained earnings increase.
e) fixed assets, debt-equity ratio, and number of common shares outstanding will all increase

7. As seen on an income statement:

a) interest is deducted from income and increases the total taxes incurred.
b) the tax rate is applied to the earnings before interest and taxes when the firm has both depreciation and interest expenses.
c) depreciation is shown as an expense but does not affect the taxes payable.
d) depreciation reduces both the pretax income and the net income.
e) interest expense is added to earnings before interest and taxes to get pretax income.

8. Assume Citigroup's interest coverage ratio (measured by times interest earned) is 1.5 and the industry is 10. These facts imply that compared to the typical bank:

a) Citi is more likely to issue additional debt.
b) Citi is less likely to go bankrupt if the economy worsens.
c) Citi is more likely to go bankrupt if the economy worsens.
d) Citi is more likely to introduce new banking branches.
e) None of the above

9. Which of the following is considered a profitability measure?

a) Days sales in inventory
b) Fixed asset turnover
c) Price-earnings ratio
d) Cash coverage ratio
e) Return on Assets

10. One primary advantage of forming a business as a corporation is

a) Double taxation
b) Unlimited liability
c) Limited liability
d) Single taxation
e) Limited life

11. a) (6 points) What should X be for Project A to be more financially attractive than Project B if the market rate is 12%?

Year	Year 0	Year 1	Year 2
Project A	-240	X+80	192
Project B	-2X	X+20	240

$$-240 + \frac{X+80}{1.12} + \frac{192}{1.12^2} > -2X + \frac{X+20}{1.12} + \frac{240}{1.12^2} \xrightarrow{\text{yields}} X > 112.34$$

b) (2 points) What can you say about the IRR of Project A relative to IRR of Project B if the Initial Investment of Project B is 500 (that is -2X = -500)?

(NOTE THAT YOU ONLY NEED TO KNOW THE DEFINITION OF IRR TO BE ABLE TO ANSWER THIS QUESTION!!!)
Since both projects have standard cash flows (first negative, then positive) more financially attractive project will have a higher IRR.
X = 250 then Project A is more financially attractive as we found in part (a).
Hence Project A has a higher IRR than Project B does.

12. (4 points) Bruin Software, a very successful UCLA start-up, had 6 million shares of stock outstanding at the end of 2008. During 2008, the company reported ROA of 15%, Equity Multiplier or Leverage of 1.2, ROE of 18%, the addition to retained earnings was $20 million and $4 million in dividends were paid. What are the earnings per share?

Obviously you are given more information than needed. Weeding out the unnecessary information is a part of the question:
Net Income = 20 + 4 = $24 million
EPS = NI / Shares Outstanding = 24M / 6M = $4.00 / share

13. (4 points)The 2014 COGS (cost of goods sold) are $35 million, revenue is $70 million and $5 million is the 12/31/2014 inventory. Based on year end data, what are Days Sales in Inventory?

*Days Sales in Inventory = 365 * (Inventory / COGS) = 365 * (5 / 35) = 52 days*

14. (6 points) a)You are the Financial Manager of Linkedin Inc. You wish to maintain a growth rate of 12% per year and a debt-equity ratio of .30. Profit Margin is 5.9%, and the ratio of Total Assets to Sales is constant at .85. Is this growth rate possible?

ROE = (PM)(TAT)(EM)
ROE = (.059)(1 / 0.85)(1 + 0.3)
ROE = .0902 or 9.02%

Now, we can use the sustainable growth rate equation to find the retention(plowback) ratio as:
Sustainable growth rate = (ROE × b) / [1 – (ROE × b)]
Sustainable growth rate = .12 = [.0902b] / [1 – .0902b]
b = 1.19
This implies the payout ratio is:
Payout ratio = 1 – b
Payout ratio = 1 – 1.19

Payout ratio = –0.19
It is not possible to have a negative payout ratio. Therefore, it is not possible to grow at 12% without changing some of the constraints given in the question.

15. (4 points)You are considering a project with an initial cost of $4,300. What is the payback period for this project if the cash inflows are $550, $970, $2,600, and $500 a year over the next four years?

550+970+2600=4,120 , Therefor payback period is between 3 and 4 years. We can estimate it exactly as 3+ (4,300-4,120)/500 = 3.36

16. (6 points) You want to have $10,000 saved ten years from now. How much less do you have to deposit today to reach this goal if you can earn 6% rather than 5% on your savings?

10,000(1/1.05^{10}- 1/1.06^{10}) = $555.2

17. (4 points) A company has renegotiated the terms of its long-term debt payment plan. According to this, company's interest payments will be lower per year but the time to pay off the debt will be extended. What kind of a short term and long term effect will this have on ROE?

In the <u>short run</u>, as interest payments go down, NI goes up and ROE goes up. Yet, since the loan term is extended, the company will make interest payments in the future years that it would not have made with the original plan. That is, ROE for those years will be lower (<u>long run</u>) than what it would have been with the original plan.

18. (8 points) The most recent Income Statement and the Balance Sheet for Tibet Corporation are given below:

Tibet Corp., Income Statement, end of year 2014	
Sales	$1,000
Cost of Goods Sold	800
Taxable Income	200
Taxes(34%)	68
Net Income	132
Dividends	44
Add. to Ret. Earnings	88

Tibet Corp., Balance Sheet, end of year 2014			
Current Assets		Current Liabilities	
Cash	160	Accounts Payable	300
Accounts Receivable	440	Notes Payable	100
Inventory	600	Total Current Liabilities	400
Total Current Assets	1,200	Long-Term Debt	800
Net Fixed Assets	1,800	Owners' Equity	
		Stock	800
		Retained Earnings	1,000
Total Assets	3,000	Total Liabilities and	3,000

Tibet Corporation would like to grow by 10% from 2014 to 2015. What is the External Financing Need (assume Profit Margin and dividend payout ratio stay the same from 2014 to 2015)?

$$EFN = \left(\frac{\text{Assets}}{\text{Sales}}\right) \times \Delta\text{Sales} - \frac{\text{Spon Liab}}{\text{Sales}} \times \Delta\text{Sales} - (PM \times \text{Projected Sales}) \times (1-d)$$

*EFN = (3,000/1,000) * 100 – (300/1,000) * 100 – [0.132 * 1,100 * (1-1/3)]*
= 300 – 30 – 96.8
= 173.2

19. (4 points) Write one positive and one negative aspect of using each of the following project evaluation methods:
(Graders: ONLY GRADE NPV AND PAYBACK PERIOD, No points taken off from positive and negatives of IRR.)

	Positive	*Negative*
NPV	*-uses all the cash flow* *-discounts them properly(incorporates time value of money)* *-tells exactly how much firm's value goes up.*	*-suffers from incorrect cash flow estimates* *-suffers from incorrect discount rate(incorrect risk estimates)*
Payback Period	*-simple to use* *-good if the investment needs to be recovered soon* *-good for control managers' decision making capabilities*	*-does not take time value of money into account* *-does not consider cash flow after the cut-off period* *-arbitrary decision rule (cutoff period)*
IRR	*-does not depend on any type of external discount rate.*	*-harder to calculate* *-multiple IRR problem* *-scale(size) problem* *-timing of cash flows problem*

For each of the following statements, circle TRUE or FALSE.
Explain "Why?" with one or two sentences (2 points each)

(Graders: TRUE/FALSE questions are mostly very broad. Explanation may deserve points even though student might have picked, say "FALSE" when the solution is given as "TRUE" below. Please pay particular attention to student's explanation.)

TRUE / FALSE : Since Apple is a technology company, you would expect Apple to use more intangible assets per sales than Exxon does, which is a hard industry company. In general, tech companies are expected to use more intangible assets.

Tech companies tend to have intellectual property(IP) as one of their big fixed asset items compared to hard industries such as oil industry.

TRUE / FALSE : Facebook started as a Sole Proprietorship and then formed a Partnership. With the coming IPO it will establish itself as a Corporation.

Facebook, as most other companies was not first established as a corporation.

TRUE / FALSE : The primary objective of a Financial Manager is to maximize the current value the company's current stock price. Then, the Financial Manager of a young company, like Linkedin, should not be concerned about announcing a quarterly loss.

Even though young companies are still in the process of establishing themselves and creating or obtaining market share, they still have to worry about reporting a loss and its effect on the stock price.

TRUE / FALSE : In order to keep the Balance Sheet balanced, an increase in the total fixed assets must be offset by an equal increase in total liabilities and/or stockholders' equity.

Not necessarily. If fixed asset increase is financed by cash for example, it would not be necessary to increase debt and/or equity.

TRUE / FALSE : A firm starts its year with a positive net working capital. During the year, the firm acquires more short-term debt than it does short-term assets. This means that: the ending net working capital must be negative.

Not necessarily. If the initial positive NWC is higher than extra accumulated debt, new NWC will still be positive.

TRUE / FALSE : The External Funds Needed (EFN) equation measures the rate of return to shareholders given the change in sales.

External Funds Needed refers to the difference between asset increase needs and retained earnings increase resulting from sales growth.

TRUE / FALSE : The higher the inventory turnover ratio, the faster a firm sells its inventory and the greater the Days' Sales in Inventory.

If the inventory ratio is high, firm is selling its inventory faster, hence it is taking less days to sell the inventory not more.

TRUE / FALSE : If a firm produces a 10% return on assets and also a 10% return on equity, then the firm has no debt of any kind.

ROA=ROE, NI/A = NI/E, hence A=E, A=D+E, D=0.

TRUE / FALSE : The only difference between Joe's and Moe's is that Joe's has old, fully depreciated equipment. Moe's just purchased all new equipment which will be depreciated over eight years. Assuming all else equal: Moe's will have a lower profit margin.

Depreciation will be reducing the profit margin for Moe's.

TRUE / FALSE : The sustainable growth rate can never be equivalent to the internal growth rate.

IGR=SGR if D=0.

TRUE/FALSE: Immediate effect of a company's stock buyback will be increased ROA and ROE.

Stock buyback will reduce E, hence ROE will go up. But if the company got into debt to purchase the stocks, then Assets will not change, hence ROA will not change.