UCLA- ENG 111 SECOND MIDTERM WINTER 2017 Meliha Bulu Taciroglu

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**Multiple Choice Questions (4 points each)**

**1.** A company decides to buy back its stocks with cash. In the short run, a stock buyback would lead to:

E↓
A↓
S↓

a) Increase in Return on Equity
b) Increase in Return on Assets
c) Decrease in Earnings per Share
d) A and B
e) None of the above

**2.** An increase in which of the following accounts increases a firm's current ratio without affecting its cash ratio?

a) Accounts payable
b) Cash
c) Accounts receivable
d) Notes Payable
e) None of the above

**3.** According to the Generally Accepted Accounting Principles:

a) Intangible assets cannot be recorded under balance sheet, they have to be recorded in pro-forma financial statements.
b) Intangible assets do not depreciate.
c) Taxes have to be paid in the year they are due.
d) Assets are recorded according to how liquid they are with less liquid ones recorded first.
e) Revenue coming from a one-time sale of a plant or an equipment cannot be recorded under the operating section of income statement.

**4.** As a direct effect of the increased stock price of a company:

a) Earnings would go up.
b) Equity would go up.
c) Profit Margin would go up.
d) Market Capitalization would go up.
e) c and d

**5.** When would an investor be worried about a high Equity Multiplier?

a) If P/E ratio is low
b) If profit margin is high
c) If market capitalization is unstable (changing from day to day)
d) If total asset turnover is low
e) All of the above

**6.** Which of the following will increase sustainable growth rate?

a) Keep the retention ratio constant
b) Increase debt
c) Decrease Costs of Goods Sold
d) Decrease in asset turnover ratio
e) Increase dividend payout ratio

**7.** BGL Enterprises increases its operating efficiency such that costs decrease while sales remain constant. As a result, given all else constant, the:

a) return on equity will increase.
b) return on assets will decrease.
c) profit margin will decline.
d) equity multiplier will decrease.
e) price-earnings ratio will increase.

**8.** A firm has a financial objective of keeping its debt to equity ratio constant. Which of the following is most likely to happen if the firm makes a loss and does not sell any stocks or any of its fixed assets?

a) short term debt will rise
b) long term debt will rise
c) either short or long term debt or both will rise
d) net working capital will fall
e) equity will rise

**9.** 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.

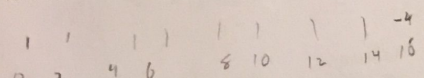
**10.** Which of the following is NOT a reasonable action for a startup company that is trying to introduce a new product to the market?

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) b and c

**Numeric Problems (12 points each)**

**11.** You are depositing $1000 with a bank with r=10% and annual compounding every two years beginning today. Two years after your last deposit you withdraw $4000 and every two years thereafter. How many withdrawals can you make if you made a total of 8 deposits (round your answer to the nearest whole number)?

start withdrawing year 16




$C_{16} = 1000(1.1)^{16} + 1000(1.1)^{14} + 1000(1.1)^{12} + 1000(1.1)^{10} + 1000(1.1)^{8} + 1000(1.1)^{6} + 1000(1.1)^{4} + 1000(1.1)^{2}$

$C_{16} = 20713.89$

$C_{18} = C_{16}(1.1)^{2} - 4000 = 21063.81$

The account earns more than $4000 in interest every two years, so it is possible to withdraw $4000 every two years forever. +

**12.** You are offered two investment opportunities with the following cash flow starting from a year today.

| | Year 1 | Year 2 | Year 3 | Year 4 |
|---|---|---|---|---|
| A | 1,800 | 2,600 | 2,000 | 1,850 |
| B | 1,200 | 2,200 | 1,800 | 1,900 |

You can get A at a cost of C and B at a cost of C+100. The value of option A is twice as much as option B to you today. If your alternative is earning 6% annually in the market, what is C?

$NPV(A) = 2\,NPV(B)$ ✓

$NPV(A) = -C + \frac{1800}{1.06} + \frac{2600}{1.06^2} + \frac{2000}{1.06^3} + \frac{1850}{1.06^4} = -C + 8729.72$

$NPV(B) = -(C+100) + \frac{1200}{1.06} + \frac{2200}{1.06^2} + \frac{1800}{1.06^3} + \frac{1900}{1.06^4} = -C + 6006.36$

$-C + 8729.72 = 2(-C + 6006.36)$

$C = 2(6006.36) - 8729.72$

$C = 3283$ +

**13.** 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?

$PM = 0.059$

$TAT = 0.85$

$\frac{Debt}{Equity} = 0.3$

$D + E = A$

$\frac{A}{E} = \frac{D+E}{E} = \frac{D}{E} + 1 =$ equity multiplier

$EM = \frac{D}{E} + 1 = 1.3$

$ROE = PM \cdot TAT \cdot EM = (0.059)\left(\frac{1}{0.85}\right)(1.3)$

$ROE = 0.0652$

sustainable growth rate $= 0.12 = \frac{0.0652b}{1 - 0.0652b}$

$0.12 - 0.12(.0652b) = .0652b$

$0.12 = .07302b$

$b = 1.64$ X

This growth rate is not possible since it would require a retention ratio of 1.64, but $b \leq 1$.

**14.** A project will bring money for 4 years after its initial investment of $10,000. In each of the first 3 years cash flow will be $X, and in 4th year, it will be $6,000. If the payback period of this project is 3 years and 2 months, what is NPV given APR is 10%?

x x x 6000

$$NPV = -10000 + \frac{X}{1.1} + \frac{X}{1.1^2} + \frac{X}{1.1^3} + \frac{6000}{1.1^4}$$

$PP = 3\frac{2}{12} = 3.167$

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$PP = 3\frac{2}{12} = 3.167 = \frac{10000}{\text{annual CF}}$

Annual CF = 3157.56

Total CF = 3157.56 × 4 = 12630.25

$3x + 6000 = 12630.25$

$x = 2210.08$

$$NPV = -10000 + \frac{2201.08}{1.1} + \frac{2201.08}{1.1^2} + \frac{2201.08}{1.1^3} + \frac{6000}{1.1^4}$$

$NPV = -428.16$

**15.** Following table provides cash flow information for three mutually exclusive projects: A, B, and C. You have a budget of $1,000. Which of these projects would you invest on using the Profitability Index criterion IF ANY? APR 10%. (NOTE that these are NOT mutually exclusive projects, you can pick as many as your budget would allow but you cannot invest on a project twice!!!)

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| Years | A | B | C |
|---|---|---|---|
| 0 | -500 | -180 | -450 |
| 1 | 200 | 20 | 160 |
| 2 | 200 | 20 | 180 |
| 3 | 200 | 100 | 200 |
| 4 | 200 | 100 | 200 |

$$PV(A) = \frac{200}{1.1} + \frac{200}{1.1^2} + \frac{200}{1.1^3} + \frac{200}{1.1^4} = 633.97$$

$$PI(A) = \frac{PV(A)}{500} = 1.268$$

$$PV(B) = \frac{20}{1.1} + \frac{20}{1.1^2} + \frac{100}{1.1^3} + \frac{100}{1.1^4} = 178.14$$

$$PI(B) = \frac{PV(B)}{180} = 0.990$$

$$PV(C) = \frac{160}{1.1} + \frac{180}{1.1^2} + \frac{200}{1.1^3} + \frac{200}{1.1^4} = 581.08$$

$$PI(C) = \frac{PV(C)}{450} = 1.291$$

PI(B) < 1, so B is not a good investment.

Invest in A and C.