YOU HAVE 75 MINUTES TO COMPLETE BOTH PARTS OF THIS EXAM

Instructions:
1) The part of the exam is closed book and closed notes. No scrap paper is allowed; use the back of the exam if necessary.
2) Partial points are based on readily observable evidence that you know at least part of the solution concept. The more evidence presented (and the clearer the evidence), the better the chance for partial points. In other words, SHOW ALL WORK!
3) If you have additional time remaining, give your work one last check.
4) True/False questions are worth 2 points. Multiple-choice questions are worth 3 points. Short answer/Fill in the Blanks questions usually take less than three sentences and are worth 4 points.

1. The cost of common stock is the rate of return stockholder’s require on the firm’s common stock.
   a. True  b. False

2) A company has a capital structure which consists of 50 percent debt and 50 percent equity. Which of the following statements is most correct?
   a. The cost of equity financing is greater than or equal to the cost of debt financing.
   b. The WACC exceeds the cost of equity financing.
   c. The WACC is calculated on a before-tax basis.
   d. The WACC represents the cost of capital based on historical averages. In that sense, it does not represent the marginal cost of capital.
   e. As a firm increases its weight of debt (i.e. becomes more levered), we generally expect the beta of the firm to decrease.

3) The constant dividend growth model may be used to find the price of a stock in all of the following situations except:
   a. when the expected dividend growth rate is less than the discount rate.
   b. when the expected dividend growth rate is negative.
   c. when the expected dividend growth rate is zero.
   d. when the expected dividend growth rate is more than the expected return.
   e. the constant growth model works in all known circumstances, it never fails.

4) Briefly list the major conclusions of the tradeoff theory of capital structure?

5) The firm’s business risk is largely determined by the financial characteristics of its industry.
   A) True  B) False

6) Historically which of the following BEST describes the correct order of returns? (lowest to highest)? Assume the corporate bonds, preferred stock and common stock is for a single (the same) company.
   a. T-bills, T-bonds, Corporate bonds, Preferred Stocks, Common Stocks
   b. T-bills, T-bonds, Corporate Bonds, Common Stocks, Preferred Stocks
   c. T-bonds, Corporate bonds, T-bills, Common Stocks, Preferred Stocks
   d. Preferred Stocks, T-bills, T-bonds, Corporate bonds, Common Stocks
   e. Common Stocks, Preferred Stocks, Corporate Bonds, T-bills, T-bonds

7. If a firm utilizes debt financing, a decrease in earnings before interest and taxes (EBIT) will result in a more than proportionate decrease in earnings per share.
   A) True  B) False
8) The second step in estimating a firm’s WACC is:
a. Estimate the project’s WACC (which includes both business risk and the effects of capital structure) by using \[ WACC = r - \left[ T^* Lrd(1+r) / (1+rd) \right] \] where \( r \) is given in the previous step and following estimates for the firm that is considering the investment.
b. Use the parameter estimates in the previous step to estimate H, WACC, and \( r \).
c. Use from the previous step the estimates of \( r \) from comparable firms to estimate a single \( r \) for the project reflecting its business risk.
d. Estimate the project’s WACC (which includes both business risk and the effects of capital structure) by using \[ WACC = r - \left[ T^* Lrd(1+r) / (1+rd) \right] \] where \( r \) is given in the previous step and following estimates for the firm that is considering the investment.
e. Choose one or more comparable firms that are similar to the project in risk and industry characteristics and have publicly traded securities.
b. Estimate values in the WACC formula for each comparable firm.

9) A firm in a highly cyclical industry should set higher interest coverage and fixed-charge coverage ratio standards to compensate for the greater operating risk.
   a. True      b. False

10) Studies show systematic differences in capital structures across industries. These are due mostly to differences in ________.
   A) what the arbitrage pricing theory tells us
   B) hiring and firing practices
   C) the availability of tax shelter provided by things other than debt, such as accelerated depreciation, investment tax credit, and operating tax loss carryforwards
   D) none of the above

11) The use of debt in the firm’s capital structure is called ________.
   A) operating leverage    B) homemade leverage
   C) financial leverage    D) decreasing leverage
   E) none of the above

12) List 4 ‘real-world’ factors that would affect a firm’s choice of capital structure?

13. (4 points) Match the term with the date:
   Record Date ____________ a. February 26, 2004
   Payment Date ____________ b. March 12, 2004
   Ex-Dividend Date __________ c. April 7, 2004
   Declaration Date __________ d. March 15, 2004

14. What are the three components/decisions in creating dividend policy for a firm?
   a.
   b.
   c.

15. What is the optimal capital structure? Why?
1. (12 points) Rolling Corporation is constructing its Cost of Capital schedule. The firm is at its target capital structure. Its bonds have a 6 percent coupon, paid semiannually, a current maturity of 9 years, and sell for $947.40. Rolling’ beta is 1.1, the risk-free rate is 3.4 %, and the market risk premium is 5.8 %. Rolling is a constant growth firm, which just paid a dividend of $1.35, sells for $25.00 per share, and has a growth rate of 4 %. The firm’s tax rate is 35%.

The firm’s book value balance sheet is as follows:

<table>
<thead>
<tr>
<th>Asset</th>
<th>$5,900</th>
<th>Long Term Debt</th>
<th>$11,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equity</td>
<td>$1,800</td>
<td>Retained Earnings</td>
<td>-$6,900</td>
</tr>
</tbody>
</table>

a. What is the firm’s leverage ratio?

b. What is Rolling’ after-tax cost of debt%?

c. What is Rolling’ cost of retained earnings using the Discounted Cash Flow approach?

d. What is Rolling’ cost of retained earnings using the Capital Asset Pricing Model approach?

e. Since the cost of Retained Earnings differs with the two above approaches, which rate should you use as the cost of retained earnings? Explain your choice?

f. Using your DCF estimate of the cost of retained earnings, what is Rolling’ WACC?

2. (8 points) In 2004, the Lissa Company, a low growth firm, paid dividends of $5,000,000 on after-tax income (cash flow) of $25,000,000. Capital budget projects totaled $4,000,000 in 2004. 2004 was a normal year for earnings, dividends, and capital budgets. For the past 12 years, earnings have grown at a constant rate of 4%. However, in 2005, earnings are expected to fall to $20,000,000 and the firm expects to have profitable investment opportunities will grow to $8,000,000. It is predicted that Lissa will not maintain the 2005 level of earnings growth, and the company will return to the 2004 earnings ($25,000,000) and growth rate (4%) in 2006. Lissa’s is an all equity firm.

a. Calculate Lissa’s total dividends for 2005 if its dividend payment is set to force dividends to grow at the long-run growth rate in earnings.

b. Calculate Lissa’s total dividends for 2005 if it continues its 2004 dividend payout ratio.

c. Calculate Lissa’s total dividends for 2005 if it uses a pure residual dividend.

d. Choosing only among a, b, and c, What is Lissa’s optimal dividend policy? Why?
3. (Point values are as listed) Use the following information for the next several questions. Consider a world of perfect capital markets. This world has no corporate or personal taxes, all investors have homogeneous expectations, no bankruptcy costs, and M&M’s no-tax theory of capital structure is true.

Company Y is financed has the following market value balance sheet:

<table>
<thead>
<tr>
<th>Assets</th>
<th>Liabilities</th>
<th>Equity</th>
</tr>
</thead>
<tbody>
<tr>
<td>$355</td>
<td>$81</td>
<td>$274</td>
</tr>
</tbody>
</table>

The firm had $31.95 in EBIT last year. The firm has 50 shares outstanding. The firm expects this same return for the foreseeable future. The firm is a zero growth firm, that pays out all excess earnings as dividends. Any time the firm changes its capital structure, it changes only the debt/equity mix and does not change its total assets. The firm’s liabilities consists entirely of perpetual debt. The firm’s debt is risk-less, perpetual, selling at par, and has a 4% yield. If the firm were to change its capital structure, new debt would still have a 4% yield. The expected return on the market is 9%. Given this information, answer the following questions:

a. (3 points) What is the firm’s return on equity?

b. (3 points) What is the firm’s current weighted average cost of capital.

c. (3 points) What is the current price per share?

d. (3 points) What is the beta of the firm’s levered equity?

Now assume that the above firm issues enough equity to repurchase all of the firm’s debt. This change in capital structure reveals no new information about future firm prospects.

e. (3 points) What is the overall firm’s new return on equity?

f. (3 points) What is the firm’s new unlevered equity beta?
4. Now consider a DIFFERENT COMPANY in a world that of perfect capital markets, with one change, CORPORATE TAXES DO EXIST. This world has no personal taxes, all investors have homogeneous expectations, no bankruptcy costs, and M&M’s with corporate taxes theory of capital structure is true. Company Y is financed has the following market value balance sheet:

\[
\begin{align*}
\text{Assets} &= \$110 \\
\text{Liabilities} &= \$0 \\
\text{Equity} &= \$110
\end{align*}
\]

The firm had $20 in EBIT last year. The firm has 20 shares outstanding. The firm expects the same return/profits for the foreseeable future. The firm a is a zero growth firm, that pays out all excess earnings as dividends. Any time the firm changes its capital structure, it changes only the debt/equity mix and does not change its physical/fixed assets. Liabilities consist only of the firm’s debt. The debt is riskless, perpetual, selling at par, and has a 8% pre-tax yield. If the firm were to change its capital structure, new debt would still have a 8% pre-tax yield. The firm’s tax rate is 35%. Given this information, answer the following questions:

a. (3 points) What is the current weighted average cost of capital (WACC)?

b. (3 points) What is the firm’s current dividends per share?

Now assume the firm issue $100 in debt and repurchases $100 in equity.

c. (3 points) Write out the firm’s new balance sheet after all of the changes.

d. (3 points) What is the firm’s Weighted Average Cost of Capital?

5. (4 points) A firm has the following book-value balance sheet; Debt =$20,000, Common Stock ($1 par)= 15 and Retained Earnings = $36,000. The book value of assets is the total of Debt, Common Stock and Retained Earnings. The firm's bonds are currently selling at par and the firm's stock is currently selling for $15. The firm's tax rate is 40%. What is the value of the firm's tax shield (i.e. the change in firm value due to the use of leverage in the capital structure)? Show your answer to the nearest $1.