Instructions. PLEASE WRITE YOUR NAME ON EACH PAGE. This exam is closed book and closed note. If you have a question, raise your hand. Scratch pages are not allowed. Write your answer in the space provided or in an equal space elsewhere. Spill-overs and unreasonably tiny writing are penalized.

1. What are the problems of using the internal rate of return to evaluate investment projects?

2. Explain the concept of incremental cash flows of a project with special attention to sunk costs, opportunity costs, and erosion.
3. In the Miller “clienteles” model, the leverage of an individual firm is irrelevant to the value of the firm, but the leverage of the market as a whole is determined by forces of supply and demand. Explain.

4. In a world without taxes or bankruptcy, explain why dividend policy does not affect the value of the firm.
5. A. A bond bearing a 6% coupon rate matures five years from today. It pays interest twice each year. The yield is 9%. What is the price of the bond? For full credit, show the timing of the cash flows and the expression for the value as well as giving the numerical answer.

B. The rate of return on the stock of firm A is $R_S$. The rate of return of the market is $R_M$.

\[ \text{Cov}(R_M, R_S) = .3 \quad \text{Var}(R_M) = .25 \quad \text{Var}(R_S) = .49. \]

What is the beta of the stock of firm A? _______

The T-bill rate is 4%. The market risk premium is 8%. What is the required return on the stock of firm A? _______

C. Each share of a firm is expected to pay a dividend of $2 one-year from now and that dividend is expected to remain constant forever. The required return on the equity of the firm is .13. What is the price of one share of the firm’s stock?

6. A. A firm has debt with a market value of $50,000. It has 5,000 shares of stock outstanding at $20 a share. Required return on the equity of the firm is .18. The corporate tax rate is 34%, and the interest rate on debt is .08. What is the value of the firm?

What would the value be if the firm were unlevered?

What is the weighted average cost of capital for the firm?

B. Consider a firm which, if it issued no debt, would have a required return to equity of 20%. However, the firm actually has a debt-equity ratio of 1/3. The interest rate on its debt is 12%, the corporate tax rate is 40%? What is the required rate of return on the equity of the levered firm? _______________