

考 試 科 目	財務管理	系 所 別	金融學系/金融管理組	考 試 時 間	2 月 3 日(五) 第三節
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I. Explain the following term briefly (24 points, 4 points for each)

1. maturity premium
2. opportunity cost of capital
3. countercyclical
4. specific risks
5. value stocks
6. trade-off theory

II. Computational Questions (30 points, 5 points for each)

1. The market portfolio has an expected return of 18% and the risk-free rate is 6%. An investor borrows \$100 at the risk-free rate and invests this and a further \$100 of his own in the market portfolio. What is his expected return?
2. A stock is expected to pay a year-end dividend of \$8 and then to sell at a price of \$109. The risk-free interest rate is 4%, the expected market return is 12% and the stock has a beta of 0.8. What is the stock price today?
3. A portfolio consists of an index mutual fund which represents the overall market and Treasury bills. The fund has a portfolio weight of 60%. The risk-free rate is 3.2% and the market risk premium is 7.6%. What is your best estimate of the portfolio expected rate of return?
4. If MM's proposition II without taxes is true and no bankruptcy risk exists, how much debt will a company prefer if their cost of debt is 6%, cost of equity is 10% and the corporate tax rate is 21%?
5. Assume an unlevered firm changes its capital structure to include \$1 million in permanent debt at a 7% interest rate. The tax rate is 21%. According to MM I with taxes, due to this change in its capital structure, what will the value of the firm increase by?
6. Because of its age, your car costs \$4,000 annually in maintenance expense. You could replace it with a newer vehicle costing \$8,000. Both vehicles would be expected to last 4 more years, at which point they will be valueless. If your opportunity cost is 8%, by how much must maintenance expense decrease on the newer vehicle to justify its purchase?

III. Short Answer Questions (10 points, 5 points for each)

1. What is the slope of the security market line? Draw and explain.

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2. Which of the following pair of firms do you think should be more highly levered: A retailing firm with prime downtown real estate, or a social media company whose major assets are its unique software and client loyalty? Briefly explain.

IV. Questions (36 points)

1. Megatrend's stock will generate earnings of \$6 per share this year. The discount rate for the stock is 15%, and the rate on reinvested earnings also is 15%.
 - a. Find both the growth rate of dividends and the price of the stock if the company reinvests the following fraction of its earnings in the firm: (i) 0%; (ii) 40%; (iii) 60%. (4 points for each)
 - b. Redo part (a) now assuming that the rate of return on reinvested earnings is 20%. What is the present value of growth opportunities for each reinvestment rate? (4 points for each)
 - c. Considering your answers to parts (a) and (b), can you briefly state the difference between companies experiencing growth and companies with growth opportunities? (4 points)
2. Alpha Inc. currently has EBIT of \$25000 and is all-equity-financed. EBIT is expected to stay at this level indefinitely. The firm pays corporate taxes equal to 21% of taxable income. The discount rate for the firm's projects is 10%.
 - a. Now assume the firm issues \$50000 of debt paying interest of 6% per year, using the proceeds to retire equity. The debt is expected to be permanent. What will happen to be the total value of the firm? (3 points)
 - b. following (a), the debt issue raises the probability of bankruptcy. The firm has a 30% chance of going bankrupt after three years. If it does go bankrupt, it will incur bankruptcy costs of \$200000. The discount rate is 10%. Judge if the firm should issue the debt or not. (5 points)

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- 一、作答於試題上者，不予計分。
- 二、試題請隨卷繳交。