

考 試 科 目	財務管理	所 別	4122 金融學系財務工程組	考 試 時 間	2 月 26 日 (日) 第 1 節
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I. Explain the following terms briefly (24 %, each 4 %)

- (1) Perpetuity.
- (2) The term structure of interest rates.
- (3) TIPs.
- (4) Market efficiency.
- (5) Sunk costs.
- (6) Sharpe ratio.

II. Computational Questions (30 %, each 6 %)

1. A bond with a face value of \$1,000 has coupon rate of 7% (paid annually), yield to maturity of 10%, and five years to maturity. Calculate the bond's Macaulay duration.
2. The Wall Street Journal quotation for a company has the following values: Div: \$1.12, PE: 18.3, Close: \$37.22. Calculate the dividend payout ratio for the company (Approximately).
3. R&D Technology Corporation has just paid a dividend of \$0.50 per share. The dividends are expected to grow at 24% per year for the next two years and at 8% per year thereafter. If the required rate of return in the stock is 16% (APR), calculate the current value of the stock.
4. Dry-Sand Company is considering investing in a new project. The project will need an initial investment of \$1,200,000 and will generate \$600,000 (after-tax) cash flows for three years. Calculate the MIRR (modified internal rate of return) for the project if the cost of capital is 15%.
5. You are considering the purchase of one of two machines required in your production process. Machine A has a life of two years. Machine A costs \$50 initially and then \$70 per year in maintenance. Machine B has an initial cost of \$90. It requires \$40 in maintenance for each year of its 3 year life. Either machine must be replaced at the end of its life. Which is the better machine for the firm? The discount rate is 15% and the tax rate is zero.

III. Short Answer Questions (18 %, each 6 %)

1. Geothermal Corp. just announced good news: its earnings have increased by 20 percent. Most investors had anticipated an increase of 25 percent. Will Geothermal's stock price increase or decrease when the announcement is made? Explain your answer.
2. How does the information content of a repurchase program differ from that of dividend increase? Which signal has lasting result?

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3. Project A has an IRR of 20% while Project B has an IRR of 30%. These two project NPV profiles cross at an interest rate of 15%. Under what situations might you be inclined to select Project A, assuming the projects to be mutually exclusive projects?

IV. Questions (28 %)

1. Suppose two equally risky shares, Div and Cap, offer the same expected return before tax. Div shares pay a generous dividend but offer low expected capital gains. Cap shares pay low dividends but offer high expected capital gains. Which of the two shares would a pension fund prefer? (2%) An individual? (2%) A corporation? (2%) Explain your answers.

2. The ongoing European sovereign debt crisis continues to shake financial markets and the Eurozone. The IMF and the EU have acted swiftly to diminish panic and uncertainty by providing emergency assistance to Greece, Ireland and Portugal.

a. What happened of the yield to maturity of the government debt issued by Greece, Ireland and Portugal under the European sovereign debt crisis? Explain your answer. (6%)

b. Comparing the impacts of the European sovereign debt crisis and the U.S. subprime mortgage crisis on the world financial markets. (8%)

3. How do you use a call option and a put option to form a contract whose payoff has the same form as shorting a forward contract? (8%)

