淡江大學九十三學年度碩士班招生考試試題

系別：財務金融學系　　　　科目：財　務　管　理

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○　簡單型計算機

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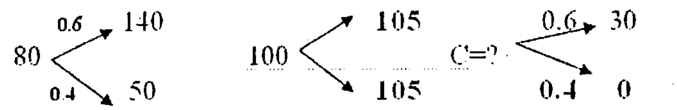
本試題雙面印製

共有 10 題，每題皆為 10 分，滿分為 100。

1. A portfolio is currently worth $100 million and has a beta of 1.0. The S&P 100 is currently standing at 500. Explain how a put option on S&P 100 with a strike of 480 can be used to provide portfolio insurance.
2. What does a firm's internal growth rate tell us? What does a firm's sustainable growth rate tell us? Which rate would be larger? Why?
3. Suppose that you have found the following quotes: stock price for firm ABC is $31, the current risk–free rate is 10% per annum, the price of a three-month European call option with an exercise of $30 on firm ABC is $3, and the price of a three-month European put option with an exercise of $30 on firm ABC is $2.25. Could you detect any arbitrage opportunity? If so, how will you proceed to take advantage of this opportunity? Explain your each step clearly.
4. The current prices of ABD stock and of a government bond are $80 and $100, respectively. One year from now, the stock could be in one of two possible states: Up-state, with a probability of 0.6 at a price of 140, and Down-state, with a probability of 0.6 at a price of 50. The risk-free rate is 5%. An European call option on the stock with a strike price of $110 is traded on the market as well.



Stock Price　　**Risk-free asset** r=5%　　**Call Strike: X=110**

   (a) Replicate the call option by constructing a portfolio invested in both the underlying stock and the risk-free bond.

   (b) What is the price of the call option today? What is the hedge ratio of the option? Interpret the sign of the hedge ratio.
5. Which of the following swaps is riskier and why:

   (a) a 3-year, $2 million notional principal swap of the 3-month Treasury rate for a fixed rate of 6.2%, with payments every 3 months or

   (b) a 3-year, $2 million notional principal swap of the 6-month LIBOR for a fixed rate of 8%, with payments every 6 months,

   where the current 3-month Treasury rate is 5% with a standard deviation of 0.4% and the current 6-month LIBOR is 6% with a standard deviation of 0.3%. Assume a flat term structure for both the 3-month Treasury rate and the 6-month LIBOR.
6. You have $100,000 to invest in either Stock D, Stock F, or a risk-free asset. You must invest all of your money. Your goal is to create a portfolio that has an

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expected return of 14 percent and is as risky as the overall market. If D has an expected return of 18 percent and a beta of 1.50, F has an expected return of 15.2 percent and a beta of 1.15, and the risk-free rate is 6 percent, and if you invest $50,000 in Stock D, how much will you invest in Stock F?

7. How to calculate financial leverage and operating leverage? What do they mean? Explain clearly.
8. Firm A and Firm B both seek funding at the lowest possible costs. They face the following rate structure:

	Firm A	Firm B
Credit Rating	AA	BB
Cost for fixed-rate borrowing	10.0%	13.0%
Cost for floating-rate borrowing	LIBOR+0.5%	LIBOR+1.0%

   (a) In what type of borrowing does Firm A have a comparative advantage? In what type of borrowing does Firm B have a comparative advantage? Why?
   (b) Design an swap transaction that would generate such a saving divided equally between the 2 firms.

9. Microsoft Software Co. is trying to estimate its optimal capital structure. Microsoft's current capital structure consists of 25% debt and 75% equity; however, management believes the firm should use more debt. The risk-free rate is 5%, the market risk premium, $r_m - r_f$, is 6%, and the tax rate is 40%. Currently, Microsoft's cost of equity is 14%, which is determined on the basis of the CAPM. What would be Microsoft's estimated cost of equity if it were to change its capital structure from its present capital structure to 50% debt and 50% equity?
10. Brassy Co. has expected EBIT of $910, debt with a face and market value of $2,000 paying an 8.5% annual coupon, and an unlevered cost of capital of 12%. If the tax rate is 34%, what is the value of the firm?