

淡江大學 101 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

考試日期：2 月 26 日(星期日) 第 2 節

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※ 下列各題只寫答案，沒有寫出運算證明過程不予計分。

1. Growth Enterprises believes its latest project, which will cost \$80,000 to install, will generate a perpetual growing stream of cash flows. Cash flow at the end of the first year will be \$5,000, and cash flows in future years are expected to grow indefinitely at an annual rate of 5%.
- (A)(5%) If the discount rate for this project is 10%, what is the project NPV?
- (B)(5%) What is the project IRR?

- 2.(15%) Machines H and K are mutually exclusive and have the following investment and operating costs. Note that machine H lasts for only 2 years:

Year:	0	1	2	3
H	\$10,000	\$1,100	\$1,200	—
K	12,000	1,100	1,200	\$1,300

- Now suppose you have an existing machine. You can keep it going for 1 more year only, but it will cost \$2,500 in repairs and \$1,800 in operating costs. Is it worth replacing now with either H or K? The discount rate is 10%.
- 3.(15%) You can purchase an optical scanner today for \$4,000. The scanner provides benefits worth \$1,000 a year. The expected life of the scanner is 5 years. Scanners are expected to decrease in price by 50% per year. Suppose the discount rate is 10%. Should you purchase the scanner today or wait to purchase? When is the best purchase time?

4. Web Cites Research projects a rate of return of 20% on new projects. Management plans to plow back 30% of all earnings into the firm. Earnings this year will be \$4 per share, and investors expect a 10% rate of return on stocks facing the same risks as Web Cites.
- (A)(5%) What is the stock price?
- (B)(5%) What is the present value of growth opportunities?

5. XYZ Co. can produce tools that will be sold for \$100 each. Non-depreciation fixed costs are \$1,000 per year and variable costs are \$80 per unit.
- (A)(15%) If the project requires an initial investment of \$5,000 and is expected to last for 5 years and the firm pays no taxes, what are the accounting and NPV break-even levels of sales? The initial investment will be depreciated straight-line over 5 years to a final value of zero, and the discount rate is 10%.
- (B)(5%) What is the degree of operating leverage of XYZ when sales are \$20,000?

本試題雙面印刷

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6.(5%) The common stock and debt of ABC are valued at \$7 million and \$3 million, respectively. Investors currently require a 13% return on the common stock and a 5% return on the debt. If ABC issues an additional \$1 million of common stock and uses this money to retire debt, what happens to the expected return on the stock? Assume that the change in capital structure does not affect the risk of the debt and that there are no taxes.

7.(15%) Suppose that the relevant equilibrium model is the CAPM with unlimited borrowing and lending at a riskless rate of interest. Complete the blanks [(1) ~ (5)] in the following table:

Asset	Expected Return	Standard Deviation	Beta	Residual Variance
A	0.15	(1)	1.5	0.13
B	(2)	0.4	1.0	0.00
C	0.09	0.3	0.5	(3)
D	0.06	(4)	(5)	0.09

8. A stock has two possible ending prices: \$150 or \$90. A call option written on it has an exercise price of \$110. The option expires in 1 year. You choose to make a hedged investment by buying stock and selling calls.

(A)(5%) Suppose you hedge a portfolio of 1,000 shares of stock with the sale of options. What is the value of this portfolio in 1 year?

(B)(5%) Given that the initial price of this stock was \$95, how would the option be priced so that your hedged investment yielded a risk-free rate of return of 10%?