

第一部分：投資學（共五十分）

（一） 單選題（共二十五分；每題五分）。請作答於答題本“選擇題作答區”上，否則不予計分。

1. You decide to purchase an equal number of shares of stocks of firms to create a portfolio. If you wanted to construct an index to track your portfolio performance, your best match for your portfolio would be to construct _____.
 - A) a value-weighted index
 - B) a industrial equity index
 - C) a price-weighted index
 - D) a global equity index
 - E) an equally weighted index

2. An investor can design a risky portfolio based on two stocks, A and B. The standard deviation of return on stock A is 20%, while the standard deviation on stock B is 15%. The correlation coefficient between the returns on A and B is 0%. The rate of return for stocks A and B is 20% and 10%, respectively. The expected return on the minimum-variance portfolio is approximately _____.
 - A) 15.7%
 - B) 13.6%
 - C) 14.3%
 - D) 16.7%
 - E) 16.4%

3. In a simple CAPM world which of the following statements is (are) correct?
 - I. All investors will choose to hold the market portfolio, which includes all risky assets in the world.
 - II. Investors' complete portfolio will vary depending on their risk aversion.
 - III. The return per unit of risk will be identical for all individual assets.
 - IV. The market portfolio will be on the efficient frontier, but it will not be the optimal risky portfolio.
 - A) I, II, and III only
 - B) I, III, and IV only
 - C) II, III, and IV only
 - D) I and III only
 - E) I, II, III, and IV

4. NTU Corporation is expected to pay a dividend of \$3 in the upcoming year. Dividends are expected to grow at the rate of 8% per year. The risk-free rate of return is 5%, and the expected return on the market portfolio is 17%. The NTU has a beta of 0.75. Using the constant-growth DDM, the intrinsic value of the stock is _____.
 - A) \$54.00
 - B) \$23.53
 - C) \$21.43

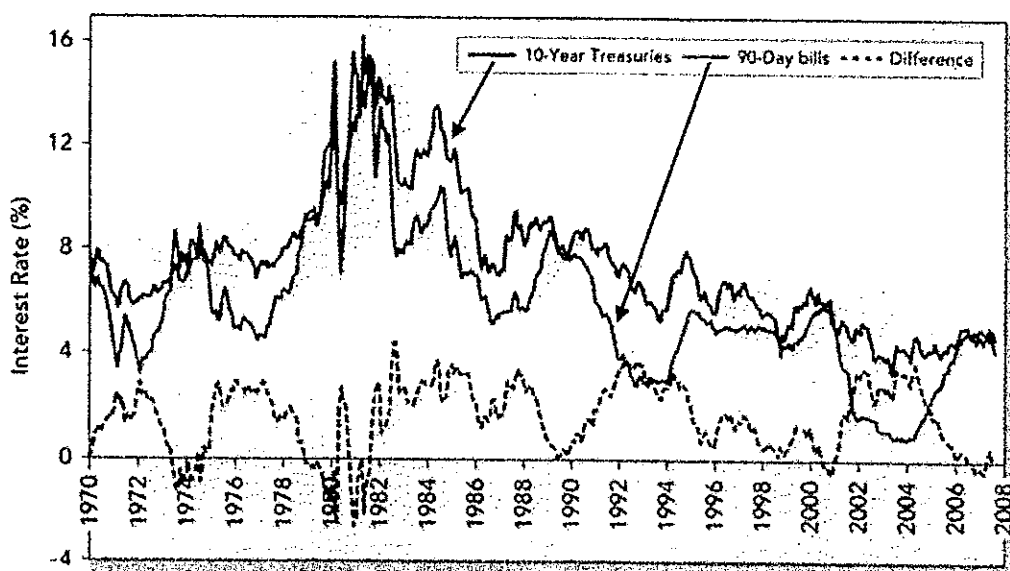
見背面

- D) \$30.77
- E) \$50.00

5. Suppose you find two bonds identical in all respects except that bond A is convertible to common stock and bond B is not. Bond A is priced at \$1,245, and bond B is priced at \$1,120. Bond A has a promised yield to maturity of 5.6%, and bond B has a promised yield to maturity of 6.7%. The stock of bond A is trading at \$49.80 per share. Which of the following statements is (are) correct?
- I The value of the conversion option for bond A is \$125.
 - II The lower promised yield to maturity of bond A indicates that the bond is priced according to its straight debt value rather than its conversion value.
 - III If bond A can be converted into 25 shares of stock, the investor would break even at the current prices.
- A) II only
 - B) I and II only
 - C) III only
 - D) I and III only
 - E) I, II, and III

(二) 簡答題 (配分詳見各題)

1. Prospect theory challenges the standard financial theory based on rationality. Use graphs to show, compared with the standard financial theory, how the utility function of a risk-averse investor would be different based on prospect theory and state its implication on investor behavior. (十分, 答案以五行為限, 否則不予計分)
2. The figure below presents the rates of 10-Year Treasury and 90-Day T-Bill as well as the difference between the long-term rate and the short-term rate over time. By observing the figure, specify important facts on the term structure of interest rates. (九分) In addition, which theory of the term structure of interest rates is likely to explain most of those facts and why. (六分)
(答案以十行為限, 否則不予計分)



接次頁

第二部分：填空題（共五十分。每題 5 分）

注意事項：

※※所有問題均請詳列計算過程，若只有答案將不予計分※※

※※填空題題型請至少計算至小數點後第二位※※

※※答案請於答題本上標示清楚，如 ANS: _____ ※※

※※一律作答於所附之考試答題本上。若於試題卷上作答者，將不予計分※※

1. Bob is about to start kindergarten in a private school. Currently, the tuition is \$41,500 per year, payable at the start of the school year. Bob's dad expects annual tuition increases to average 5% per year over the next 13 years. Assuming that Bob remains in this private school through high school and that the current interest rate is 5%, then the present value of Bob's private school education is closest to? ANS: _____

2. Assume that you are 30 years old today, and that you are planning on retirement at age 65. Your current salary is \$60,000 and you expect your salary to increase at a rate of 2% per year as long as you work. To save for your retirement, you plan on making annual contributions to a retirement account. Your first contribution will be made on your 31st birthday and will be 7.5% of this year's salary. Likewise, you expect to deposit 7.5% of your salary each year until you reach age 65. Assume that the rate of interest is 6%. The future value at retirement of your savings is? ANS: _____

3. Suppose the term structure of interest rates is shown below:

Term	1 year	2 years	3 years	5 years	8 years	10 years	20 years
Rate (EAR%)	4.00%	3.50%	3.20%	3.00%	2.95%	2.90%	2.80%

Consider an investment that pays \$1000 certain at the end of each of the next four years. If the investment costs \$3,500 and has an NPV of \$190, then the fourth-year risk-free interest rate is closest to? ANS: _____

4. Use the table for the question(s) below.

	Cash flow today	Cash flow in one year
Security		
Snorlax	0	200
Piplup	200	0
Eevee	200	200

If the value of security " Eevee " is \$288, then what must be the value of security " Snorlax "? ANS:

見背面

5. Charmander Inc. is planning two new issues of 30-year bonds. Bond Gengar will be sold at its \$1,000 par value, and it will have a 10% semiannual coupon. Bond Gible will be an original issue discount bond, and it will have a 30-year maturity and a \$1,000 par value, but its semiannual coupon will be only 5.50%. If both bonds are to provide investors with the same effective yield, how many of the Gible bonds must Charmander issue to raise \$1,000,000? Disregard flotation costs, and round your final answer up to a whole number of bonds. ANS: _____

6. Psyduck's stock has a required return of 10%, and the stock sells for \$60 per share. The firm just paid a dividend of \$2.20, and the dividend is expected to grow by 25% per year for the next 4 years. After $t = 4$, the dividend is expected to grow at a constant rate of $Y\%$ per year forever. What is the stock's expected constant growth rate after $t = 4$? ANS: _____

7. Budew Corp. is considering acquiring Lapras and has compiled this information on Lapras:

Year	1	2	3
EBIT	\$ 415,000	\$ 425,000	\$ 435,000
Capital spending	59,000	49,000	39,000
Increases in net working capital	9,000	7,000	5,000
Depreciation	50,000	42,000	39,200

The applicable tax rate is 32 percent and the terminal value of Lapras as of Year 3 is \$3.5 million. What is the NPV of this acquisition if the discount rate is 8.50 percent and the acquisition cost is \$3.25 million? ANS: _____

8. Suppose you have \$16,000 in cash to invest. You decide to sell short \$6,000 worth of OMG stock and invest the proceeds from your short sale, plus your \$16,000 into one-year U.S. treasury bills earning 5%. At the end of the year, you decide to liquidate your portfolio. OMG Industries has the following realized returns:

	P_0	Div_1	P_1
OMG	\$30.00	\$1.50	\$38.00

The return on your portfolio is closest to? ANS: _____

接次頁

9. Cresselia Inc. has the following balance sheet and income statement data:

Cash	14,000	Accounts payable	42,000
Receivables	70,000	Other current liab.	<u>28,000</u>
Inventories	<u>250,000</u>	Total CL	\$70,000
Total CA	\$334,000	Long-term debt	140,000
Net fixed assets	<u>126,000</u>	Common equity	<u>250,000</u>
Total assets	<u>\$460,000</u>	Total liab. and equity	<u>\$460,000</u>
Sales	\$280,000		
Net income	\$21,000		

The CEO thinks that inventories are excessive and could be lowered sufficiently to cause the current ratio to equal the industry average, 2.25, without affecting either sales or net income. Assuming that inventories are sold off and not replaced to get the current ratio to the target level, and that the funds generated are used to buy back common stock at book value, by how much would the ROE change? ANS: _____

10. Two years ago the Jynx Restaurant purchased a grill for \$60,000. The owner has learned that a new grill is available that will cook Jynx Patties twice as fast as the existing grill. This new grill can be purchased for \$100,000 and would be depreciated straight line over 8 years, after which it would have no salvage value. The owner expects that the new grill will produce EBITDA of \$55,000 per year for the next eight years while the existing grill produces EBITDA of only \$33,000 per year. The current grill is being depreciated straight line over its useful life of 10 years after which it will have no salvage value. All other operating expenses are identical for both grills. The existing grill can be sold to another restaurant now for \$30,000. The Jynx's tax rate is 35%. Compute the IRR for upgrading to the new grill. If the Jynx's opportunity cost of capital is 12%, then based on the IRR rule, should the Jynx install the new grill? ANS: _____

試題隨卷繳回