

國立成功大學

114學年度碩士班招生考試試題

編 號：163

系 所：財務金融研究所

科 目：財務管理

日 期：0211

節 次：第 2 節

注 意：1. 可使用計算機
2. 請於答案卷(卡)作答，於
試題上作答，不予計分。

Section A: Multiple Choice Questions (80 marks, 4 points each)

Please provide your answer in capital letter (i.e., A, B, C, D, or E)

1. Anacott Steel is acquiring Terafly Incorporated. Terafly is expected to provide Anacott with operating cash flows of \$12, \$21, \$16, and \$9 million over the next four years, respectively. In addition, the horizon value of all remaining cash flows at the end of Year 4 is estimated at \$18 million. The merger will cost Anacott \$45.0 million today. If the value of the merger is estimated at \$9.00 per share and Anacott has 1,000,000 shares outstanding, what equity discount rate must the firm be using to value this acquisition?
 - a. 11.63%
 - b. 12.25%
 - c. 12.89%
 - d. 13.57%
 - e. 14.25%

2. The Ritz Company has a 40-year-old employee that will retire at age 60 and live to age 75. The firm has promised a retirement income of \$20,000 at the end of each year following retirement until death. The firm's pension fund is expected to earn 7 percent annually on its assets. What is Ritz's annual pension contribution to the nearest dollar for this employee? (Assume certainty and end-of-year cash flows.)
 - a. \$2,756
 - b. \$3,642
 - c. \$4,443
 - d. \$4,967
 - e. \$5,491

3. Ellis Enterprises is considering whether to lease or buy some necessary equipment it needs for a project that will last the next 3 years. If the firm buys the equipment, it will borrow \$4,800,000 at 8% interest. The firm's tax rate is 35% and the firm's before-tax cost of debt is 8%. Annual maintenance costs associated with ownership are estimated to be \$300,000 and the equipment will be depreciated on a straight-line basis over 3 years. What is the annual end-of-year lease payment (in thousands of dollars) for a 3-year lease that would make the firm indifferent between buying or leasing the equipment? (Suggestion: Delete 3 zeros from dollars and work in thousands.)
 - a. \$1,950
 - b. \$2,052

- c. \$2,160
 - d. \$2,268
 - e. \$2,382
4. Suppose in the spot market 1 U.S. dollar equals 1.75 Canadian dollars. 6-month Canadian securities have an annualized return of 6% (and thus a 6-month periodic return of 3%). 6-month U.S. securities have an annualized return of 6.5% and a periodic return of 3.25%. If interest rate parity holds, what is the U.S. dollar-Canadian dollar exchange rate in the 180-day forward market? In other words, how many Canadian dollars are required to purchase one U.S. dollar in the 180-day forward market?
- a. 1.2727
 - b. 1.4141
 - c. 1.5712
 - d. 1.7458
 - e. 1.9203
5. Warnes Motors' stock is trading at \$20 a share. Three-month call options with an exercise price of \$20 have a price of \$1.50. Which of the following will occur if the stock price increases 10% to \$22 a share?
- a. The price of the call option will increase by \$2.
 - b. The price of the call option will increase by less than \$2, but the percentage increase in price will be more than 10%.
 - c. The price of the call option will increase by less than \$2, and the percentage increase in price will be less than 10%.
 - d. The price of the call option will increase by more than \$2.
 - e. The price of the call option will increase by more than \$2, but the percentage increase in price will be less than 10%.
6. Which of the following statements is CORRECT?
- a. Under normal conditions, a firm's expected ROE would probably be higher if it financed with short-term rather than with long-term debt, but using short-term debt would probably increase the firm's risk.
 - b. Conservative firms generally use no short-term debt and thus have zero current liabilities.
 - c. A short-term loan can usually be obtained more quickly than a long-term loan, but the cost of short-term debt is normally higher than that of long-term debt.

- d. If a firm that can borrow from its bank at a 6% interest rate buys materials on terms of 2/10, net 30, and if it must pay by Day 30 or else be cut off, then we would expect to see zero accounts payable on its balance sheet.
- e. If one of your firm's customers is "stretching" its accounts payable, this may be a nuisance but it will not have an adverse financial impact on your firm if the customer periodically pays off its entire balance.

7. Which of the following statements is NOT CORRECT?

- a. Stock repurchases can be used by a firm as part of a plan to change its capital structure.
- b. After a 3-for-1 stock split, a company's price per share should fall, but the number of shares outstanding will rise.
- c. Investors may interpret a stock repurchase program as a signal that the firm's managers believe the stock is undervalued, or, alternatively, as a signal that the firm does not have many good investment opportunities.
- d. A company can repurchase stock to distribute a large one-time cash inflow, say from the sale of a division, to stockholders without having to increase its regular dividend.
- e. Stockholders pay no income tax on dividends if the dividends are used to purchase stock through a dividend reinvestment plan.

8. Which of the following statements is CORRECT?

- a. Generally, debt ratios do not vary much among different industries, although they do vary among firms within a given industry.
- b. Electric utilities generally have very high common equity ratios because their revenues are more volatile than those of firms in most other industries.
- c. Airline companies tend to have very volatile earnings, and as a result they generally have high target debt-to-equity ratios.
- d. Wide variations in capital structures exist both between industries and among individual firms within given industries. These differences are caused by differing business risks and also managerial attitudes.
- e. Since most stocks sell at or very close to their book values, book value capital structures are typically adequate for use in estimating firms' weighted average costs of capital.

9. Games Unlimited Inc. is considering a new game that would require an investment of \$20.0 million. If the new game is well received, then the project would produce cash flows of \$9.5 million a year for 3 years. However, if the market does not like the new game, then the cash flows would be only \$6.0 million per year. There is a 50% probability of both good and bad market conditions. The firm could delay the project for a year while it conducts a test to determine if demand would be strong or weak. The project's cost and expected annual cash flows would be the same whether the project is delayed or not. If the WACC is 9.0%, what is the value (in thousands) of the investment timing option?
- a. \$1,857
 - b. \$2,042
 - c. \$2,246
 - d. \$2,471
 - e. \$2,718
10. High Roller Properties is considering building a new casino at a cost of \$10 million at $t = 0$. The after-tax cash flows the casino generates will depend on whether the state imposes a new income tax, and there is a 50-50 chance the tax will pass. If it passes, after-tax cash flows will be \$1.875 million per year for the next 5 years. If it doesn't pass, the after-tax cash flows will be \$3.75 million per year for the next 5 years. The project's WACC is 11.0%. If the tax is passed, the firm will have the option to abandon the project 1 year from now, in which case the property could be sold to net \$6.5 million after tax at $t = 1$. What is the value (in thousands) of this abandonment option?
- a. \$202
 - b. \$224
 - c. \$249
 - d. \$277
 - e. \$308

11. Which of the following statements is CORRECT?
- a. An externality is a situation where a project would have an adverse effect on some other part of the firm's overall operations. If the project would have a favorable effect on other operations, then this is not an externality.
 - b. An example of an externality is a situation where a bank opens a new office, and that new office causes deposits in the bank's other offices to increase.
 - c. The NPV method automatically deals correctly with externalities, even if the externalities are not specifically identified, but the IRR method does not. This is another reason to favor the NPV.
 - d. Both the NPV and IRR methods deal correctly with externalities, even if the externalities are not specifically identified. However, the payback method does not.
 - e. Identifying an externality can never lead to an increase in the calculated NPV.
12. Project X's IRR is 19% and Project Y's IRR is 17%. The projects have the same risk and the same lives, and each has constant cash flows during each year of their lives. If the WACC is 10%, Project Y has a higher NPV than X. Given this information, which of the following statements is CORRECT?
- a. The crossover rate must be less than 10%.
 - b. The crossover rate must be greater than 10%.
 - c. If the WACC is 8%, Project X will have the higher NPV.
 - d. If the WACC is 18%, Project Y will have the higher NPV.
 - e. Project X is larger in the sense that it has the higher initial cost.
13. Which of the following statements is CORRECT?
- a. In the WACC calculation, we must adjust the cost of preferred stock (the market yield) to reflect the fact that 70% of the dividends received by corporate investors are excluded from their taxable income.
 - b. We should use historical measures of the component costs from prior financings that are still outstanding when estimating a company's WACC for capital budgeting purposes.
 - c. The cost of new equity (r_e) could possibly be lower than the cost of retained earnings (r_s) if the market risk premium, risk-free rate, and the company's beta all decline by a sufficiently large amount.
 - d. Its cost of retained earnings is the rate of return stockholders require on a firm's common stock.
 - e. The component cost of preferred stock is expressed as $r_p(1 - T)$, because preferred stock dividends are treated as fixed charges, similar to the treatment of interest on debt.

14. Savickas Petroleum's stock has a required return of 12%, and the stock sells for \$40 per share. The firm just paid a dividend of \$1.00, and the dividend is expected to grow by 30% per year for the next 4 years, so $D_4 = \$1.00(1.30)^4 = \2.8561 . After $t = 4$, the dividend is expected to grow at a constant rate of $X\%$ per year forever. What is the stock's expected constant growth rate after $t = 4$, i.e., what is X ?
- a. 5.17%
 - b. 5.44%
 - c. 5.72%
 - d. 6.02%
 - e. 6.34%
15. Which of the following statements is CORRECT?
- a. Assume that two bonds have equal maturities and are of equal risk, but one bond sells at par while the other sells at a premium above par. The premium bond must have a lower current yield and a higher capital gains yield than the par bond.
 - b. A bond's current yield must always be either equal to its yield to maturity or between its yield to maturity and its coupon rate.
 - c. If a bond sells at par, then its current yield will be less than its yield to maturity.
 - d. If a bond sells for less than par, then its yield to maturity is less than its coupon rate.
 - e. A discount bond's price declines each year until it matures, when its value equals its par value.
16. Other things held constant, if the expected inflation rate decreases and investors also become more risk averse, the Security Market Line would be affected as follows:
- a. The y-axis intercept would decline, and the slope would increase.
 - b. The x-axis intercept would decline, and the slope would increase.
 - c. The y-axis intercept would increase, and the slope would decline.
 - d. The SML would be affected only if betas changed.
 - e. Both the y-axis intercept and the slope would increase, leading to higher required returns.
17. Which of the following statements is CORRECT?
- a. The maturity premiums embedded in the interest rates on U.S. Treasury securities are due primarily to the fact that the probability of default is higher on long-term bonds than on short-term bonds.
 - b. Reinvestment rate risk is lower, other things held constant, on long-term than on short-term bonds.

- c. The pure expectations theory of the term structure states that borrowers generally prefer to borrow on a long-term basis while savers generally prefer to lend on a short-term basis, and as a result, the yield curve is normally upward sloping.
- d. If the maturity risk premium were zero and interest rates were expected to decrease in the future, then the yield curve for U.S. Treasury securities would, other things held constant, have an upward slope.
- e. Liquidity premiums are generally higher on Treasury than on corporate bonds.

18. Which of the following statements is CORRECT?

- a. The sustainable growth rate is the maximum achievable growth rate without the firm having to raise external funds. In other words, it is the growth rate at which the firm's AFN equals zero.
- b. If a firm's assets are growing at a positive rate, but its retained earnings are not increasing, then it would be impossible for the firm's AFN to be negative.
- c. If a firm increases its dividend payout ratio in anticipation of higher earnings, but sales and earnings actually decrease, then the firm's actual AFN must, mathematically, exceed the previously calculated AFN.
- d. Higher sales usually require higher asset levels, and this leads to what we call AFN. However, the AFN will be zero if the firm chooses to retain all of its profits, i.e., to have a zero dividend payout ratio.
- e. Dividend policy does not affect the requirement for external funds based on the AFN equation.

19. A \$50,000 loan is to be amortized over 7 years, with annual end-of-year payments. Which of these statements is CORRECT?

- a. The annual payments would be larger if the interest rate were lower.
- b. If the loan were amortized over 10 years rather than 7 years, and if the interest rate were the same in either case, the first payment would include more dollars of interest under the 7-year amortization plan.
- c. The proportion of each payment that represents interest as opposed to repayment of principal would be lower if the interest rate were lower.
- d. The last payment would have a higher proportion of interest than the first payment.
- e. The proportion of interest versus principal repayment would be the same for each of the 7 payments.

20. Quigley Inc. is considering two financial plans for the coming year. Management expects sales to be \$300,000, operating costs to be \$265,000, assets (capital) to be \$200,000, and its tax rate to be 35%. Under Plan A it would use 25% debt and 75% common equity. The interest rate on the debt would be 8.8%, but under a contract with existing bondholders the TIE (Times Interest Earned) ratio would have to be maintained at or above 4.0. Under Plan B, the maximum debt that met the TIE constraint would be employed. Assuming that sales, operating costs, assets, the interest rate, and the tax rate would all remain constant, by how much would the ROE change in response to the change in the capital structure?
- a. 3.71%
 - b. 4.08%
 - c. 4.48%
 - d. 4.93%
 - e. 5.18%

Section B: Essay Questions (20 marks)

1. What are the pros and cons of cryptocurrencies? Provide your answer in English ONLY. (10 marks)

2. Briefly explain how the option pricing model can be used for pricing risky debt. Provide your answer in English ONLY. (10 marks)