

※ 考生請注意：本試題可使用計算機。請於答案卷(卡)作答，於本試題紙上作答者，不予計分。

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

1. The treasurer usually oversees the following functions of a corporation except:
  - A) Obtaining finances
  - B) Investor relationships
  - C) Cash management
  - D) Preparation of financial statements
  
2. Mr. Crow has \$100 income this year and zero income next year. The market interest rate is 10% per year. Mr. Crow also has an investment opportunity in which he can invest \$50 today and receive \$70 next year. Suppose Mr. Crow consumes \$20 this year and invests in the project. What will be his consumption next year?
  - A) \$88
  - B) \$103
  - C) \$80
  - D) \$100
  
3. You would like to have enough money saved to receive a growing perpetuity, growing at a rate of 5% per year, the first payment being \$100,000, after retirement so that you and your family can lead a good life. How much would you need to save in your retirement fund to achieve this goal (assume that the growing perpetuity payments start one year from the date of your retirement. The interest rate is 10%)?
  - A) \$1,000,000
  - B) \$10,000,000
  - C) \$2,000,000
  - D) None of the above

4. Y2K Technology Corporation has just paid a dividend of \$0.40 per share. The dividends are expected to grow at 30% per year for the next two years and at 5% per year thereafter. If the required rate of return in the stock is 15% (APR), calculate the current value of the stock.
- A) \$1.420
  - B) \$6.33
  - C) \$5.63
  - D) None of the above
5. You have been asked to evaluate a project with infinite life. Sales and costs are projected to be \$1000 and \$500 respectively. There is no depreciation and the tax rate is 30%. The real required rate of return is 10%. The inflation rate is 4% and is expected to be 4% forever. Sales and costs will increase at the rate of inflation. If the project costs \$3000, what is the NPV?
- A) \$365.38
  - B) \$1629.62
  - C) \$500.00
  - D) \$438
6. Stock M and Stock N have had returns for the past three years of -12%, 10%, 32% and 6%, 15%, 24% respectively. Calculate the covariance between the two securities.
- A) +132
  - B) -198
  - C) +198
  - D) None of the above

7. Which of the following statements is most correct?
- A) Beta measures market risk, but if a firm's stockholders are not well diversified, beta may not accurately measure stand-alone risk.
  - B) If the calculated beta underestimates the firm's true investment risk, then the CAPM method will overestimate  $r_s$ .
  - C) The discounted cash flow method of estimating the cost of equity can't be used unless the growth component,  $g$ , is constant during the analysis period.
  - D) An advantage shared by both the DCF and CAPM methods of estimating the cost of equity capital, is that they yield precise estimates and require little or no judgement.
8. Financial Calculator Company proposes to invest \$9 million in a new calculator making plant. Fixed costs are \$2 million a year. A financial calculator costs \$8 per unit to manufacture and can be sold for \$24 per unit. If the plant lasts for 4 years and the cost of capital is 20%, what is the break-even level of annual rates? (Assume no taxes.)
- A) 125,000 units
  - B) 217,500 units
  - C) 342,290 units
  - D) 423,350 units
9. Goldsmith labs recover gold from printed circuit boards. It has developed new equipment for the purpose. The following data is given.
- (1.) Equipment costs \$250,000
  - (2.) It will cost 100,000 per year to run
  - (3.) It has an economic life of 5 years and is depreciated using straight-line method
  - (4.) It will recover 1000 ounces of gold per year
  - (5.) The current price of gold is \$300 per ounce and it expected to increase at a rate 4% per year for the foreseeable future
  - (6.) The tax rate is 30%
  - (7.) The cost of capital is 8%

What is NPV of the equipment?

- A) \$580,400
- B) \$520,510
- C) \$470,400
- D) None of the above

10. The New Word Corporation has 1,000,000 shares outstanding at \$30/share. If the firm wishes to raise \$13.5 million at a subscription price of \$27/share, calculate the value of a right.
- A) \$3/right
  - B) \$1/right
  - C) \$2/riggght
  - D) \$3.5/right
11. Health and Wealth Company is financed entirely by common stock which is priced to offer a 15% expected return. If the company repurchases 25% of the common stock and substitutes an equal value of debt yielding 6%, what is the expected return on the common stock after refinancing? (Ignore taxes.)
- A) 24%
  - B) 18%
  - C) 15%
  - D) None of the above
12. The Boston Company has total assets of \$30 million, of which \$10 million are financed by debt and \$20 million by equity. The EBIT is \$6 million. If the firm's tax rate is 34%, and the interest rate on debt is 10%, calculate it's after tax cash flow.
- A) \$3.96 million
  - B) \$1.70 million
  - C) \$2.04 million
  - D) \$3.30 million

13. Generally, managers of corporations prefer internally generated cash to finance their capital expenditures because:
- A) They can avoid the discipline of the financial markets
  - B) The costs of issuing new securities are high
  - C) The announcement of new equity issue is usually bad news for investors
  - D) All of the above
14. Buying a call option, investing the present value of the exercise price in T-bills, and selling the underlying share is the same as:
- A) Buying a call and a put
  - B) Buying a put and a share
  - C) Buying a put
  - D) Selling a call
15. Relative to the underlying stock, a call option always has:
- A) A higher beta and a higher standard deviation of return
  - B) A lower beta and a higher standard deviation of return
  - C) A higher beta and a lower standard deviation of return
  - D) A lower beta and a lower standard deviation of return
16. Which of the following statements is most correct?
- A) One advantage of stock repurchases is that they are generally taxed more favorably than dividend payments.
  - B) One advantage of dividend reinvestment plans is that they enable investors to avoid paying taxes on the dividends they receive.
  - C) Stock repurchases make sense if a company is interested in increasing its equity ratio.
  - D) Stock repurchases make sense if a company believes that its stock is overvalued and that it has a lot of profitable projects to fund over the next year.

17. Standard Oil company of Maine has 400,000 shares outstanding and 80,000 warrants. Each warrant entitles its owner to buy one share anytime in the next two years at a price of \$10. Undiluted earnings per share are \$6.73. What are diluted earnings per share?
- A) \$6.73
  - B) \$3.37
  - C) \$2.38
  - D) \$5.61
18. A sinking fund is useful to a corporation because:
- A) The corporation does not have to worry about paying the bondholders
  - B) It provides the corporation with the option to buy the bonds back at the lower of face value or market price
  - C) The payments to the sinking fund are not necessary when the firm is in financial difficulty
  - D) They are simple and easy to monitor
19. If the after-tax present value of buying equipment and using it for 6 years is \$100,000, calculate the break-even after-tax yearly lease payment (7 payments) using 7% discount rate. (Assume that the lease payments are made at the beginning of the year.)
- A) \$14,286
  - B) \$19,355
  - C) \$18,555
  - D) \$17,341
20. Your firm has debt worth \$200,000, with a yield of 9 percent, and equity worth \$300,000. It is growing at a 4 percent rate, and faces a 40 percent tax rate. A similar firm with no debt has a cost of equity of 12 percent. Under the MM extension with growth, what is the value of your firm's tax shield?
- A) \$90,000
  - B) \$100,000
  - C) \$120,000
  - D) \$144,000

**Section B: Essay Questions (20 marks)**

1. In what circumstances is a private placement preferable to a public issue? Explain in English ONLY.
2. What is meant by “moral hazard” and “adverse selection”?  
Explain why these effects tend to increase insurance premiums in English ONLY.