※ 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. If Diplomat goes ahead with this project today, it will obtain knowledge that will give rise to additional opportunities 5 years from now (at t = 5). The company can decide at t = 5 whether or not it wants to pursue these additional opportunities. Based on the best information available today, there is a 35% probability that the outlook will be favorable, in which case the future investment opportunity will have a net present value of $6 million at t = 5. There is a 65% probability that the outlook will be unfavorable, in which case the future investment opportunity will have a net present value of -$6 million at t = 5. Diplomat.com does not have to decide today whether it wants to pursue the additional opportunity. Instead, it can wait to see what the outlook is. However, the company cannot pursue the future opportunity unless it makes the $3 million investment today. What is the estimated net present value of the project, after consideration of the potential future opportunity?
   a. -$1,104,607
   b. -$875,203
   c. $199,328
   d. $561,947
   e. $898,205

2. A commercial bank recognizes that its net income suffers whenever interest rates increase. Which of the following strategies would protect the bank against rising interest rates?
   a. Buying inverse floaters.
   b. Entering into an interest rate swap where the bank receives a fixed payment stream, and in return agrees to make payments that float with market interest rates.
   c. Purchase principal only (PO) strips that decline in value whenever interest rates rise.
   d. Sell some of the bank's floating-rate loans and use the proceeds to make fixed-rate loans.
   e. Enter into a short hedge where the bank agrees to sell interest rate futures.

3. The Ritz Company has a 40-year-old employee who 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 and the firm uses 7% to discount pension benefits. 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

4. Midwest Investment Consultants (MIC) operates several stock investment portfolios that are used by firms for investment of pension plan assets. Last year, one portfolio had a realized return of 12.6 percent and a beta coefficient of 1.15. The average T-bond rate was 7 percent and the realized rate of return on the S&P 500 was 12 percent. What was the portfolio's alpha?
   a. -0.75%
   b. -0.15%
   c. 0.05%
   d. 0.15%
   e. 0.75%

5. Assume an economy in which there are three securities: Stock A with r_A = 10% and σ_A = 10%; Stock B with r_B = 15% and σ_B = 20%; and a riskless asset with r_{RF} = 7%. Stocks A and B are uncorrelated (r_{AB} = 0). Which of the following statements is most CORRECT?
   a. The expected return on the investor's portfolio will probably have an expected return that is somewhat below 15% and a standard deviation (SD) that is between 10% and 20%.
   b. The expected return on the investor's portfolio will probably have an expected return that is somewhat below 10% and a standard deviation (SD) of approximately 10%.
   c. The expected return on the investor's portfolio will probably have an expected return that is somewhat above 15% and a standard deviation (SD) of approximately 20%.
   d. The investor's risk/return indifference curve will be tangent to the CML at a point where the expected return is in the range of 7% to 10%.
   e. Since the two stocks have a zero correlation coefficient, the investor can form a riskless portfolio whose expected return is in the range of 10% to 15%.

6. Rainier Bros. has 12.0% semiannual coupon bonds outstanding that mature in 10 years. Each bond is now eligible to be called at a call price of $1,060. If the bonds are called, the company must replace them with new 10-year bonds. The flotation cost of issuing new bonds is estimated to be $45 per bond. How low would the yield to maturity on the new bonds have to be in order for it to be profitable to call the bonds today, i.e., what is the nominal annual "breakeven rate"?
   a. 9.29%
   b. 9.78%
   c. 10.29%
   d. 10.81%
   e. 11.35%

7. What would be the priority of the claims as to the distribution of assets in a liquidation under Chapter 7 of the Bankruptcy Act?
   (1) Trustees' costs to administer and operate the firm.
   (2) Common stockholders.
   (3) General, or unsecured, creditors.
   (4) Secured creditors, who have a claim to the proceeds from the sale of specific property pledged to secure a loan.
   (5) Taxes due to federal and state governments.
   a. 4, 1, 5, 3, 2
   b. 5, 4, 1, 3, 2
   c. 1, 4, 3, 5, 2
   d. 5, 1, 4, 2, 3
   e. 1, 5, 4, 3, 2

8. To finance the construction of a new plant, Benefield Inc. must raise an additional $10,000,000 of equity capital through the sale of common stock. The firm currently has an EPS of $5.40 and a P/E ratio of 10, with 1,200,000 shares outstanding. If the firm wants its ex-rights price to be $50, what subscription price must it set on the new shares?
   a. $29.55
   b. $33.78
   c. $39.28
   d. $41.80
   e. $50.00

9. Which of the following statements is most CORRECT?
   a. Preferred stock generally has a higher component cost of capital to the firm than does common stock.
   b. By law in most states, all preferred stock must be cumulative, meaning that the compounded total of all unpaid preferred dividends must be paid before any dividends can be paid on the firm's common stock.
   c. Unlike bonds, preferred stock cannot have a convertible feature.
   d. Whereas common stock has an indefinite life, preferred stocks always have a specific maturity date, generally 25 years or less.
   e. From the issuer's point of view, preferred stock is less risky than bonds.

10. Kohers Inc. is considering a leasing arrangement to finance some manufacturing tools that it needs for the next 3 years. The tools will be obsolete and worthless after 3 years. The firm will depreciate the cost of the tools on a straight-line basis over their 3-year life. It can borrow $4,800,000, the purchase price, at 10% and buy the tools, or it can make 3 equal end-of-year lease payments of $2,100,000 each and lease them. The loan obtained from the bank is a 3-year simple interest loan, with interest paid at the end of the year. The firm's tax rate is 40%. Annual maintenance costs associated with ownership are estimated at $240,000, but this cost would be borne by the lessor if it leases. What is the net advantage to leasing (NAL), in thousands? (Suggestion: Delete 3 zeros from dollars and work in thousands.)
    a. $96
    b. $106
    c. $112
    d. $117
    e. $123

11. Stover Corporation, a U.S. based importer, makes a purchase of crystal glassware from a firm in Switzerland for 39,960 Swiss francs, or $24,000, at the spot rate of 1.665 francs per dollar. The terms of the purchase are net 90 days, and the U.S. firm wants to cover this trade payable with a forward market hedge to eliminate its exchange rate risk. Suppose the firm completes a forward hedge at the 90-day forward rate of 1.682 francs. If the spot rate in 90 days is actually 1.638 francs, how much will the U.S. firm have saved or lost in U.S. dollars by hedging its exchange rate exposure?
    a. -$396
    b. -$243
    c. $0
    d. $243
    e. $638

12. 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.

13. Which of the following statements is CORRECT?

a. If the underlying stock does not pay a dividend, it makes good economic sense to exercise a call option as soon as the stock's price exceeds the strike price by about 10%, because this permits the option holder to lock in an immediate profit.

b. Call options generally sell at a price less than their exercise value.

c. If a stock becomes riskier (more volatile), call options on the stock are likely to decline in value.

d. Call options generally sell at prices above their exercise value, but for an in-the-money option, the greater the exercise value in relation to the strike price, the lower the premium on the option is likely to be.

e. Because of the put-call parity relationship, under equilibrium conditions a put option on a stock must sell at exactly the same price as a call option on the stock.

14. Leak Inc. forecasts the free cash flows (in millions) shown below. If the weighted average cost of capital is 11% and FCF is expected to grow at a rate of 5% after Year 2, what is the Year 0 value of operations, in millions? Assume that the return on invested capital is expected to remain constant in Year 2 and beyond (and do not make any half-year adjustments).

Year:	1	2
Free cash flow:	-$50	$100

a. $1,456

b. $1,529

c. $1,606

d. $1,686

e. $1,770

15. Which of the following statements is CORRECT?
    a. Since depreciation is a cash expense, the faster an asset is depreciated, the lower the projected NPV from investing in the asset.
    b. Under current laws and regulations, corporations must use straight-line depreciation for all assets whose lives are 5 years or longer.
    c. Corporations must use the same depreciation method for both stockholder reporting and tax purposes.
    d. Using accelerated depreciation rather than straight line normally has the effect of speeding up cash flows and thus increasing a project's forecasted NPV.
    e. Using accelerated depreciation rather than straight line normally has no effect on a project's total projected cash flows nor would it affect the timing of those cash flows or the resulting NPV of the project.

16. Which of the following statements regarding a 30-year monthly payment amortized mortgage with a nominal interest rate of 10% is CORRECT?
    a. The monthly payments will increase over time.
    b. A larger proportion of the first monthly payment will be interest, and a smaller proportion will be principal, than for the last monthly payment.
    c. The total dollar amount of interest being paid off each month gets larger as the loan approaches maturity.
    d. The amount representing interest in the first payment would be higher if the nominal interest rate were 7% rather than 10%.
    e. Exactly 10% of the first monthly payment represents interest.

17. A 12-year bond has an annual coupon rate of 9%. The coupon rate will remain fixed until the bond matures. The bond has a yield to maturity of 7%. Which of the following statements is CORRECT?
    a. If market interest rates decline, the price of the bond will also decline.
    b. The bond is currently selling at a price below its par value.
    c. If market interest rates remain unchanged, the bond's price one year from now will be lower than it is today.
    d. The bond should currently be selling at its par value.
    e. If market interest rates remain unchanged, the bond's price one year from now will be higher than it is today.

18. Stock A has a beta of 0.7, whereas Stock B has a beta of 1.3. Portfolio P has 50% invested in both A and B. Which of the following would occur if the market risk premium increased by 1% but the risk-free rate remained constant?
    a. The required return on Portfolio P would increase by 1%.
    b. The required return on both stocks would increase by 1%.
    c. The required return on Portfolio P would remain unchanged.
    d. The required return on Stock A would increase by more than 1%, while the return on Stock B would increase by less than 1%.
    e. The required return for Stock A would fall, but the required return for Stock B would increase.

19. Which of the following statements is CORRECT?
    a. One defect of the IRR method is that it does not take account of cash flows over a project's full life.
    b. One defect of the IRR method is that it does not take account of the time value of money.
    c. One defect of the IRR method is that it does not take account of the cost of capital.
    d. One defect of the IRR method is that it values a dollar received today the same as a dollar that will not be received until sometime in the future.
    e. One defect of the IRR method is that it assumes that the cash flows to be received from a project can be reinvested at the IRR itself, and that assumption is often not valid.

20. Which of the following statements about valuing a firm using the APV approach is most CORRECT?
    a. The value of operations is calculated by discounting the horizon value, the tax shields, and the free cash flows at the cost of equity.
    b. The value of equity is calculated by discounting the horizon value, the tax shields, and the free cash flows at the cost of equity.
    c. The value of equity is calculated by discounting the horizon value and the free cash flows at the cost of equity.
    d. The value of operations is calculated by discounting the horizon value, the tax shields, and the free cash flows before the horizon date at the unlevered cost of equity.
    e. The APV approach stands for the accounting pre-valuation approach.

Section B: Essay Questions (20 marks)

1. Explain the concept of equity as an option. Please provide your answer in English ONLY. **(10 marks)**

2. Suppose a company simultaneously issues $50 million of convertible bonds with a coupon rate of 10% and $50 million of straight bonds with a coupon rate of 14%. Both bonds have the same maturity. Is the cost of capital lower on the convertible than on the straight bond? Please explain in English ONLY and also rank the firm's costs of capital on convertible, straight bond, and common stock. **(10 marks)**