1 Corporate Finance, Assignment 1 Winter 2008; **Valuation**

Due Date: see Course outline schedule

PLEASE READ THESE INSTRUCTIONS CAREFULLY (5% penalty if you do not follow the instructions)
- Your solutions to the assignment will be submitted on both:
A. Computer score sheet (I will hand out in class),
B. Typed report to all problems (zero will be awarded if no full solution is provided to the problem question)
Do not staple the computer score sheet to the typed report. Hand them separately!
- Indicate: Course name, course no., Your Professor Name (Prof. Raad Jassim), your Last name, Initial only of your first name and ID number as it appears on the university ID card. (respect the order)
- DO NOT recopy the questions – simply indicate your responses beside the appropriate question number.

Questions 1-30 are worth 0.5 marks each (Total = 15)

1. Which of the following work to reduce agency conflicts between stockholders and bondholders?

   a. Including restrictive covenants in the company's bond contract.
   b. Providing managers with a large number of stock options.
   c. The passage of laws that make it easier for companies to resist hostile takeovers.
   d. Statements b and c are correct.
   e. All of the statements above are correct.

2. Which of the following mechanisms is used to motivate managers to act in the interest of shareholders?

   a. Bond covenants.
   b. The threat of a takeover.
   c. Pressure from the board of directors.
   d. Statements a and b are correct.
   e. Statements b and c are correct.

3. You are evaluating two annuities that are identical except that one is an ordinary annuity and the other is an annuity due. Assuming an interest rate of 10%, which of the following is true?

   a. the ordinary annuity must have a lower future value than the annuity due
   b. the ordinary annuity must have a higher present value than the annuity due
   c. the two annuities will differ in present value by the amount of exactly one of the annuity payments
   d. the annuity due will be larger than the regular annuity by an amount equal to the present value of the last annuity payment

4. Which of the following statements is most correct?

   a. One advantage of organizing your business as a corporation is that your shareholders are not subject to limited liability.
   b. Restrictive covenants in debt agreements are an effective way to reduce agency conflicts between stockholders and managers.
   c. Managers generally welcome hostile takeovers since they often increase the company's stock price.
   d. Statements a and b are correct.
   e. None of the answers above is correct.

5. Which of the following statements is most correct?

   a. Hostile takeovers are most likely to occur when a firm's stock is undervalued, relative to its potential, because of poor management.
   b. One advantage to remaining a sole proprietor is that you have limited liability.
   c. In general, bondholders have a greater preference for riskier projects than do stockholders.
   d. Statements b and c are correct.
   e. All of the statements above are correct.

6. Which of the following statements is most correct?

   a. Since they are guaranteed a certain set of cash flows, corporate bondholders generally want corporate managers to select high risk/high return projects.
   b. One advantage of forming a corporation is that you can deduct your corporate taxes, and thereby eliminate the double taxation that you would face as a sole proprietor.
   c. One drawback of forming a corporation is that you lose the limited liability that you would otherwise receive as a sole proprietor.
   d. All of the statements above are correct.
   e. None of the statements above is correct.

7. A company needs to arrange financing for its expansion program. One bank offers to lend the required $1,000,000 on a loan which requires interest to be paid at the end of each quarter. The quoted rate is 10%, and the principal must be repaid at the end of the year. A second bank offers 9%, daily compounding (365-day year), with interest and principal due at the end of the year. What is the difference in the effective annual rates charged by the two banks?

   a. 0.96%
   b. 0.75%
   c. 0.53%
   d. 0.31%

8. Your subscription to Jogger's World Monthly is about to run out and you have the choice of renewing it by sending in the $10 a year regular rate or of getting a lifetime subscription to the magazine by paying $100. Your cost of capital is 7 percent. How many years would you have to live to make the lifetime subscription the better buy? Payments for the regular subscription are made at the beginning of each year. (Round up if necessary to obtain a whole number of years.)

   a. 15 years
   b. 10 years
   c. 18 years
   d. 7 years
   e. 8 years

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9. You are considering an investment in a 40-year security. The security will pay $25 a year at the end of each of the first three years. The security will then pay $30 a year at the end of each of the next 20 years. The nominal interest rate is assumed to be 8 percent, and the current price (present value) of the security is $360.39. Given this information, what is the equal annual payment to be received from Year 24 through Year 40 (for 17 years)?

a. $35
b. $38
c. $40
d. $45
e. $50

10. What is the present value of an income stream which has a **negative** flow of $100 per year for each of the next 3 years, and a **positive** flow of $300 per year in years 4 through 7, if the appropriate discount rate is 10%?

a. $466
b. $898
c. $963
d. $1,200

11. Procrastinating Pam has decided that it is time to provide for the education of her quintuplets. They are now 12 years old, and Pam plans for each of them to attend 3 years of university at an annual cost of $10,000 per child, payable at the beginning of each year. Pam can save until they enter university at age 18. However, she will only deposit at the end of every year. The interest rate is forecasted to be 8% for the next 6 years and to increase to 18% thereafter. Assuming annual compounding, how much must Pam save per year in order to provide for her children's education? (Rounded to the nearest hundred dollars)

a. $13,600
b. $14,800
c. $17,500
d. $18,700
e. $17,000

12. You have just taken out an amortized loan for $100,000. Assume that the loan will be repaid in 12 equal monthly installments of $9,456 and that the first payment will be due one month from today. How much of your
second monthly payment will go toward the repayment of principal?

a. $7,757.22
b. $7,605.12
c. $2,000.00
d. $1,850.88

13. You have just borrowed $20,000 to buy a new car. The loan agreement calls for 60 monthly payments of $444.89 each to begin one month from today. If the interest is compounded monthly, then what is the annual rate on this loan?

a. 12.68%
b. 14.12%
c. 12.00%
d. 13.25%

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14. Which of the following statements is most correct?

    a. All else equal, a bond that has a coupon rate of 10 percent will sell at a discount if the required return for a bond of similar risk is 8 percent.
    b. The price of a discount bond will increase over time, assuming that the bond's yield to maturity remains constant over time.
    c. The total return on a bond for a given year consists only of the coupon interest payments received.
    d. Both b and c are correct.

15. The current market price of V Corporation's 10 percent, 10 year bonds is $1,297.58. A 10 percent coupon interest rate is paid semiannually, and the par value is equal to $1,000. What is the YTM (stated on a nominal, or annual, basis) if the bonds mature 10 years from today?

    a. 8%
    b. 6%
    c. 4%
    d. 3%

16. Given the information provided in the previous problem (15), if we assume the yield to maturity increases to 12 percent 2 years after the bond is issued, what effect will this higher yield to maturity have on the market price of the bond?

    a. The market price of the bond will decrease to about $899
    b. The market price of the bond will decrease to about $885
    c. The market price of the bond will decrease to about $652
    d. The market price of the bond will increase to about $1,404

17. Techno Corp.'s common shares are priced at $45 per share. If an investor who purchased the stock 12 months ago received a 83 cent dividend and sells the stock today, she will realize a total return of 38.88 percent. At what price did she buy the stock?

    a. $30
    b. $31
    c. $33
    d. $60

18. Identical Corp.'s common shares currently sell for $40 per share. The firm is expected to pay a $2.00 dividend in the coming year. If investors believe that the expected return on Identical Corp. is 14 percent, what growth rate in dividends must be expected? (Hint: Use the constant growth model)

    a. 5%
    b. 9%
    c. 14%
    d. 6%

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19. Etling Enterprises' common stock dividend is expected to grow at 15% for the next 3 years and then at 10% indefinitely. If the current dividend is $4 and the required return is 14%, what is the price of the stock?

a. $125
b. $120
c. $115
d. $110

20. Your aunt, in her will, left you the sum of $5,000 a year forever with payments starting immediately. However, the news is better. She has specified that the amount should grow at 5% per year to maintain purchasing power. Given an interest rate of 12%, what is the PV of the inheritance?

A) $75,000
B) $48,750
C) $85,000
D) None of the above

21. You discover $40,000 under your pillow, which can be invested at a rate of 18% per year. If You spend $11,435 per year, beginning a year from now, how long will the money last?

a. 4 years
b. 5 years
c. 6 years
d. 7 years
e. 10 years

22. You discover $40,000 under your pillow, which can be invested at a rate of 18% per year. If you spend $10,000 now and save the rest, how much would you have accumulated at the end of the fourth year? (Rounded to the nearest hundred dollars)

a. $45,100
b. $47,500
c. $52,300
d. $56,000
e. $58,200.

23. Tom Medley was given the following data on Westland Inc.: P = $17 (Dec. 31, 1998) market yield on comparable long-term debt = 11% earnings per share have been: 1993 = $1.08 1994 = $1.17 1995 = $1.26 1996 = $1.36 1997 = $1.47 1998 = $1.59. If the company retains 60% of its earnings, what is the cost of common equity (ks) using the Constant Growth Model? (Rounded to the nearest percentage point)

a. 8%
b. 9%
c. 10%
d. 11%
e. 12%

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24. Lisa's Body Shop has preferred stock listed at the MSE that are currently trading for $30. These shares have a par value of $40 and a 5 % dividend yield. Assume preferred stock investors of Lisa's Body Shop expect a required rate of return of 10%. If the share price is expected to increase by $7, how much must the dividend change by? (Rounded to the nearest percentage point)

    a. 14%
    b. 35%
    c. 51%
    d. 72%
    e. 85%

25. The yearly maintenance costs on equipment you have just purchased are expected to be $500, $700, $1,400, and $1,400 respectively for the next four years. At 10% interest, what equal annual sum is equivalent to this series (assuming that the maintenance costs are paid at the end of each period)? (Rounded to the nearest ten dollars)

    a. $ 840
    b. $ 850
    c. $ 940
    d. $ 960
    e. $1,000

26. You have $500 in a savings account which earns 5% compounded annually. How much **additional** interest would you earn in 4 years if you moved the money to an account which earns 6% compounded annually?

    a) $21.89
    b) $23.49
    c) $24.93
    d) $25.88
    e) $29.94

27. The company you work for will deposit $600 at the end of each month into your retirement fund. Interest is compounded monthly. You plan to retire 15 years from now and estimate that you will need to withdraw $2,000 per month from the account for the subsequent 20 years. The account pays an APR rate of 8% compounded monthly. How much do you need to put into the account in addition to your company deposit in order to meet your objective?

    a) $0.00
    b) $57.59
    c) $82.58
    d) $90.99
    e) $95.88

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28. The bonds of a company carry a 7% coupon rate and a market price of $887.76. If the bond matures in 5 years and interest is paid on a semi-annual basis, what is the yield to maturity on the bond? Choose the range below that contains the solution.

a) 4.75-4.95%
b) 5.45-5.65%
c) 7.45-7.65%
d) 9.75-9.95%
e) 14.75-14.95%

29. A company has just paid a dividend of $1.40 per share. Dividends are expected to grow at a rate of 5% per year for the foreseeable future. If the required return is 10%, what is the value of one share of the company's stock?

a) $14.00
b) $15.25
c) $25.80
d) $28.00
e) $29.40

30. Biogenetics, Inc. plans to retain and reinvest all of their earnings for the next 30 years. Investors believe that, beginning in year 31, the firm will begin to pay a dividend of $12.00 per share. The dividend is expected to remain at the same level thereafter. Given a required return of 15%, what should the stock sell for today?

a) $1.21
b) $2.15
c) $8.15
d) $42.00
e) $80.00

END OF ASSIGNMENT