

Name _____

Student Number _____

TEST 1MGF 301 Corporation Finance
Spring 2011

Please sign your name in the box

Please tear off the answer sheet and answer all of the following questions on the answer sheet.
(Note: Total Points = 100; Multiple Choice = 4 points each unless otherwise indicated)

1. Large Co. semi-annual bonds are selling at 102 (i.e., the price is \$1020 for the \$1,000 bond). There are 23 years remaining until maturity on the bonds and the yield to maturity is 7%. Mark each of the following as (T) rue and (F) alse (2 points each):

T a. The bonds must have a coupon rate greater than 7%

F b. If the yield to maturity stays constant, the bonds will sell for the same price one year from now

F c. Large Co. will pay its bondholders 23 equal payments. Each payment will be a combination of interest and principal repayment

2. Common Products has issued its \$.01 par value stock in two separate financing transactions. Transaction 1: ten years ago, the founder of the company purchased 2,000,000 shares of stock for \$500,000. Transaction 2: last year the company went public last year by issuing 8,000,000 shares of stock to the public for \$30 million. Use this information to fill in the following table: (6 points)

Common shares (par value)	_____ 100,000 _____
Additional paid-in capital	_____ 30,400,000 _____
Retained Earnings	_____ 11,500,000 _____
Net Equity	42,000,000

3. A 30 year maturity bond with a coupon rate of 6.5% has 10 years remaining. The bond has a face value of \$1,000, makes semi-annual coupon payments and has a yield to maturity of 5%. Setup a formula in as much detail as possible to find the price of the bond (Note: you do not need to solve the formula). (6 points)

$$P = 32.50/(1.025) + 32.50/(1.025^2) + 32.50/(1.025^3) + \dots + 1032.50/(1.025^{20})$$

4. Which of the following is true about stock prices?

(a) stock prices are based on the book value of equity

(b) if future growth rates go up but the current growth rate stays the same, the stock price will stay the same

(c) if a stock does not pay a dividend, then there is no way to estimate the stock price

(d) none of the above

5. Which of the following gives the formula for calculating the EAR with weekly compounding of an 6% APR?

- (a) $EAR = (1+.06)^{52} - 1$
- (b) $EAR = (1+.06/12)^{12} - 1$
- (c) $EAR = (1+.06/52)^{52} - 1$
- (d) None of the above

6. You have won an accident settlement in court and can choose between the following choices of payment plans:

- A: \$10,000 immediately and \$10,000 at the end of each year for 9 years
- B: \$100,000 immediately
- C: \$20,000 immediately and \$20,000 at the end of each year for 4 years

Assuming r is a discount rate greater than the risk-free rate, mark each of the following as (T) rue or (F) alse (2 points each):

- T a. Plan B will always have the highest present value
- F b. At some discount rates, A will have a higher present value than C
- F c. The future value in time 10 of A, B & C is the same

7. Below are the data for two stocks, both of which have a discount rate of 11 percent.

	Stock A	Stock B
Dividends per share	\$.50	\$.80
Growth Rate	10%	7%

The stock price estimates are $P_A = .50/(\.11 - .10) = 50$ and $P_B = .80/(\.11 - .07) = 20$

If stock B has a higher dividend and stock price is calculated by discounting dividends, how is it possible that stock A has the higher price? Explain. (6 points)

Stock A has a higher growth rate which means that, even though the dividend of stock A is lower today, in time the dividend of stock A will be much larger than that of stock B. Hence if we discount all these dividends back to time 0, the dividend stream for stock A has a higher PV.

8. United Sports, Inc. is expected to pay a dividend of \$1 next year (in year 1) and \$2 two years from now (in year 2). For dividends beyond two years, dividends are expected to increase at 6% per year from the prior year. If the discount rate is 10%, which calculation correctly estimates the stock price?

- (a) $P = 1/1.10 + 2/1.10^2 + 2/(\.10 - .06)/(1.10^2)$
- (b) $P = 1/1.10 + 2/1.10^2 + 2.2/(\.10 - .06)/(1.10^3)$
- (c) $P = 1/1.10 + 2/(\.10 - .06)/(1.10)$
- (d) none of the above

9. If you buy a 10 year bond with a 5% coupon that has a yield to maturity of 6% and you sell it after one year, what return will you earn on the bond if the YTM stays at 6% over the year?

- (a) 5%
- (b) 6%
- (c) We need to know if it is a premium or discount bond to answer this question
- (d) Cannot be determined

10. A company has introduced a new type of bond that pays interest that increases by 1% each year. There are 5 years to maturity on the bond and it has a \$1,000 face value. The coupon rate is 4% interest the first year, 5% the second year, 6% interest the third year, 7% the fourth year, and 8% the fifth year. If the bond is sold for \$1,000 and the yield to maturity stays constant over the next 5 years, what will happen to the bond price over time:

- (a) the bond price will stay the same each year
- (b) the bond price will go up each year**
- (c) the bond price will go down each year

11. You have won a special lottery that pays \$1000 per week forever. If the first payment is received today (time 0) and the annual discount rate is 6%, calculate the present value of the lottery using weekly compounding. Show your work. (6 points)

$$PV = 1000 + 1000/((.06/52)) = 867,666.67$$

12. Your uncle died last year and left you money in his will. You are to receive \$300,000 four years from today (i.e., in time 4). If you invest the money when you receive it in time 4, how much will it grow to 50 years from today (i.e., in time 50) if you earn 4% each year?

- (a) $300,000 \times 1.04^{50}$
- (b) $[300,000 / 1.04^4] \times 1.04^{50}$**
- (c) $300,000 \times 50$
- (d) none of the above

13. BC Inc. has 3,000,000 shares of stock outstanding. The expected dividend of the company is \$1.80 per share next year. The discount rate is 11%.

- (a) If BC retains 40% of its earnings (i.e., BC pays out 60% as dividends) and has a return on equity of 15%, calculate the growth rate of dividends. Show your work along with the answer (6 points)

$$g = .4 \times .15 = .06$$

- (b) If the dividend paid by BC is expected to grow at the rate in (a) above, calculate the price of its stock using the constant growth model? (6 points) Show your work along with the answer

$$P = 1.80/((.11 - .06)) = 36$$

- (c) Calculate the present value of growth options (PVGO) for BC stock. (6 points) Show your work along with the answer

$$PVGO = 36 - 3/.11 = 36 - 27.27 = 8.73$$

(Note: without growth, $EPS = Div = 3$)