

Name \_\_\_\_\_

Student Number \_\_\_\_\_

TEST 1

MGF 301 Corporation Finance  
Fall 2008

Please sign name in 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. A bank is paying interest at a 5% annual rate on deposits. If you invest 10,000 and the bank compounds interest daily (i.e., 365 times per year), which of the following shows how much you will have in your account after two years?

- (a)  $10,000 \times (1.05)^2$
- (b)  $10,000 \times (1 + .05/365)^{365 \times 2}$**
- (c)  $10,000 \times [1/.05 - 1/ (.05(1.05^2))]$
- (d)  $10,000 \times (1 + .05/(365 \times 2))^2$

2. An investment is expected to pay the following:  $C_1 = \$2,300$ ,  $C_2 = \$2,600$ ,  $C_3 = \$2,900$ , and then for time period 4 and continuing forever thereafter the payment will increase 5% over the previous year. If the discount rate is 10%, how would you calculate a fair price for this investment? Setup the problem and be as specific as you can (Note: you do not have to solve it) (7 points)

$$PV = 2300/(1.1) + 2600/(1.1^2) + 2900/ (.1 - .05)/1.1^2$$

3. The common stock of ABC corporation increased in price by 10% yesterday in trading on the New York Stock Exchange. Which of the following is true about ABC?

- (a) the book value of equity increased by 10% when the stock price went up
- (b) the market value of the assets increased by 10% when the stock price went up**
- (c) the increase in the stock price increased the amount of cash that ABC has
- (d) none of the above is true.

4. You are offered the choice of receiving (a) \$100,000 in time 10 or (b) 5 annual payments of \$20,000 beginning in time 1 and continuing through time 5. Can you determine without doing any calculations which choice has the higher present value? Explain. (6 points)

**Choice B has the higher present value because you receive 100,000 within 5 years instead of 10. Regardless of the interest rate (as long as it is positive), money is worth less in future periods so it is preferable to receive the money in the shortest period possible.**

5. If you pay 11% interest compounded semi-annually (i.e., 2 times per year), what is the effective annual rate?
- (a) 5.5%
  - (b) 11%
  - (c) **11.30%**
  - (d) 11.55%
6. Ben is selling his car to his friend Jason for \$10,000. If Jason wants to make equal monthly payments over three years for the car, how should Ben and Jason determine the appropriate payment if the annual interest rate is agreed on at 8%? Describe the answer or set up a calculation being as specific as possible. (Note: you do not have to solve it) (7 points)

**They need to find an annuity for a period of 36 months at the monthly interest rate using the formula  $PV = C[1/r - 1/r(1+r)^T]$  where  $PV = 10000$ ,  $r = .08/12$  and  $T = 36$ . You could also answer with the Excel formula  $=PMT(.08/12,36,10000)$ .**

7. Which of the following is not true about a 10 year 8% bond with a face value of 1,000 that is selling for 1,100?
- (a) the bond will pay \$80 each year as interest
  - (b) if the yield to maturity remains constant over the next year, the price will be lower next year
  - (c) the yield to maturity is less than 8%
  - (d) **all of the above are true**
8. Exactly ten years ago, in 1997, WXZ corp. issued a 9% bond with face value of \$1,000 and a 30 year maturity. The bond was issued with a price of \$990 and was rated BB by Standard & Poors. Without doing any calculations, approximately what was the yield to maturity in 1997 when the bond was first issued?
- (a) **a little above 9%**
  - (b) a little below 9%
  - (c) exactly 9%
  - (d) cannot be determined

9. Assume the bond from question 8 is now priced at priced at \$800 in 2007. Describe two possible explanations for how a bond price could decrease so much over the 10 year period. (6 points)

**The bond could have become riskier due to poor financial results which will result in a lower bond rating and an increase in the YTM (as investors require a higher return from the bond)**

**Interest rates overall in the economy could have gone up which would increase the YTM and lower the price**

10. Generic Products Inc. issued 200,000 shares of stock with par value \$.01/share. The stock was issued for \$20/share. If the stock price is now \$30 per share and the company has retained earnings of \$1,000,000, calculate (a) the par value, (b) the capital in excess of par and (c) the overall book value of equity. Show your calculations. (6 points)

$$\text{Par value} = 200,000 \times .01 = 2,000$$

$$\text{Capital in excess of par} = 20 \times 200,000 - 2,000 = 3,998,000$$

$$\text{Book value} = 2,000 + 3,998,000 + 1,000,000 = 5,000,000$$

11. Baby Products Inc. has 1,000,000 shares of stock issued and outstanding. The expected earnings of the company are \$2 million next year. The discount rate is 13%.

(a) If Baby Products pays out 60% of its earnings as dividends and has a return on equity of 14%, calculate the growth rate of dividends. (6 points)

$$g = .14 \times .4 = .056$$

(b) If the dividend paid by Baby Products is expected to grow at the rate in (a) above, calculate the price of Baby Products stock. (6 points)

$$\text{Price} = 1.2 / (.13 - .056) = 16.22$$

(c) Calculate the present value of growth options (PVGO) for this stock. (6 points)

$$\text{PVGO} = 16.22 - 2 / .13 = 16.22 - 15.38 = .84$$

12. If the stock in question 11 does not pay a dividend, which of the following is true?

(a) All the theoretical models we discussed in class require a dividend to calculate stock prices, so there is no way to estimate this stock price

**(b) It is still possible to estimate the stock price by discounting another measure of firm value such as cash flows**

(c) If the stock does not pay dividends, we can estimate the stock price by calculating the bond price

(d) None of the above are true