

Multiple choice – 3 points each – 30 points total

1. If its yield to maturity is less than its coupon rate, a bond will sell at a _____, and decreases in market interest rates will _____.
 - A. discount; decrease this discount
 - B. discount; increase this discount
 - C. premium; decrease this premium
 - D. premium; increase this premium
 - E. None of the above.

2. If a company purchases inventory with cash, the current ratio will:
 - A. increase only if it was originally greater than one.
 - B. increase only if it was originally less than one.
 - C. decrease only if it was originally less than one.
 - D. increase regardless of its original value.
 - E. remain constant.

3. You are evaluating two annuities. They are identical in every way, except that one is an ordinary annuity and one is an annuity due. Which of the following is FALSE?
 - A. The ordinary annuity must have a lower present value than the annuity due.
 - B. The ordinary annuity must have a lower future value than the annuity due.
 - C. The annuity due must have the same present value as the ordinary annuity.
 - D. The two annuities will differ in present value by the amount $(1 + R)$.
 - E. The annuity due and the ordinary annuity will make the same number of total payments over time.

4. If a firm's debt-to-equity ratio is 0.5, what is its total debt to total asset ratio?
 - A. 0.25
 - B. 0.33
 - C. 0.50
 - D. 0.75
 - E. 0.80

5. What does a total asset turnover of 1.5 times mean?
 - A. For each \$1 of sales generated, the firm has total assets of \$1.50.
 - B. For each \$1 of total assets, the firm generated sales of \$1.50.
 - C. For each \$1 of total assets, the firm generated \$1.50 in net income.
 - D. For each \$ of net income generated, the firm has \$1.50 in total assets.
 - E. The firm completely replaces its fixed assets 1.5 times a year on average.

6. A bond that can be exchanged for shares of the issuing company's stock at the discretion of the bondholder is a ____ bond.
- A. callable
 - B. premium
 - C. convertible
 - D. junk
 - E. discount
7. Which of following items(s) is/are included in the bond indenture?
- I. Call provisions, if any
 - II. Sinking fund provisions, if any
 - III. Negative covenants, if any
 - IV. A description of the property used as security, if any
- A. I, II, and IV only
 - B. I and II only
 - C. I and III only
 - D. I, II, III, and IV only
 - E. II, III, and IV only
8. When would a firm's return on equity equal the return on assets?
- A. Whenever a firm's return on equity is equal to 100%.
 - B. Whenever a firm has no long-term debt.
 - C. Whenever a firm's debt to equity ratio is equal to one.
 - D. Whenever a firm's total debt ratio is equal to zero.
 - E. Whenever a firm's long-term debt ratio is equal to zero.
9. Which of the following are true? All else equal, present values _____.
- I. increase as the discount rate increases
 - II. increase the further away in time the future value is
 - III. are always smaller than the future value when the number of periods and interest rate are positive
- A. I only
 - B. I and II
 - C. II and III
 - D. III only
 - E. I and III
10. You purchase a car for \$45,000 with a 60 month contract and a 9% APR. If the loan contract is in the form of an annuity due, what is your monthly payment?
- A. \$927.17
 - B. \$934.13
 - C. \$941.82
 - D. \$948.65
 - E. \$956.31

Partial Credit Problems --- SHOW ALL WORK

TIMELINES REQUIRED FOR PROBLEMS 1, 2, 3, 4, 5, and 6

Problem 1 (10 points) You have decided to have a room remodeled at cost of \$15,000. In order to pay for the remodeling, you go to a finance company. A representative tells you that the interest rate on the loan will be 14 percent per year with monthly payments. Since the total interest over the 3 years will be \$7,223.16 ($3 \times .14 \times \$15,000$), your total monthly payment will be $\$22,223.16/36 = \671.31 . What is the APR and EAR of the loan?

Problem 2 (12 points) You want to retire in 30 years. Currently, you have \$100,000 invested in a bond account and \$200,000 invested in a stock account. The bond account will earn a 7 percent EAR and the stock account will earn an 11 percent EAR. You also plan to deposit \$750 per month for the next 15 years into the stock account and then \$1,000 per month for the last 15 years into your bond account. All deposits are in real terms. When you retire you plan to move all of your money into an account that earns an 8.5 percent EAR. You plan to live for 25 years after you retire. Additionally, at the end of your retirement you want to leave \$1,000,000 for your grandchildren in today's dollars. All rates are nominal. Over the next 55 years, you expect inflation to be 3.5 percent. How much can you withdraw each month in real terms? What is the amount of the check your grandchildren will receive?

Problem 3 (8 points) Your grandparents purchased their house in 1968 for \$7,800. They were amazed when they recently sold the house for \$295,000 and feel that their return was tremendous. Of course, these are the same grandparents who complain that a candy bar that sold for \$.25 when they bought the house now costs \$1.30. What was the real selling price of the house in 1968 dollars?

Problem 4 (9 points) Dr. Joe Schmo is a finance professor at a small Southern liberal arts university. A student who has performed poorly in the introductory finance class has offered to pay Dr. Schmo for a better grade. Dr. Schmo presented the student with this agreement to sell a better grade: Since he would be fired from his position, he would lose his salary and benefits. His salary is \$63,000 per year, paid in equal payments at the end of the each month. His salary is expected to keep pace with inflation. His benefits amount to \$25,000 per year, and the benefit payments occur at the beginning of each year. The benefits will also increase at the rate of inflation. He expects to work for another 20 years. Assume the required return is 7.1 percent nominal and the inflation rate is 3.4 percent. All rates are effective annual rates. If Dr. Schmo is willing to sell the student a better grade if the student pays the present value of the future lost salary and benefits, how much will the student have to pay for a better grade?

Problem 5 (11 points) You are considering the purchase of an apartment building that generated \$325,000 over the past year in cash flows to the owner. The cash flows are expected to keep pace with the inflation rate of 3.3 percent and occur at the end of each year forever. If you require an 11 percent nominal return on your investment, how much will you pay for the building today?

Suppose instead that the apartment building will only last for 20 years until it must be torn down. At that time, the land can be sold for \$1.5 million net of demolition costs in that year's dollars. How much will you pay for the building now?

Problem 6 (9 points) A financial advisor is trying to sell you a short-term increasing perpetuity. One year from today you will receive \$10,000, and the payments will increase at \$10,000 per year. Thus, in 2 years you will receive \$20,000, in 3 years you will receive \$30,000, and so on. When the payments reach \$70,000 per year, they will remain constant. If the interest rate is a 3.6 percent APR compounded daily, how much should you pay for this perpetuity today?

Problem 7 (10 points) The most recent financial statements a company are shown below. The company expects that sales will grow 15 percent next year. Interest expense, depreciation, the tax rate, notes payable, long-term debt, and the dividend payout rate will remain constant. COGS, other expenses, current assets, and accounts payable increase spontaneously with sales. The firm is operating at 86 percent capacity. If fixed assets are required, the company must purchase \$15 million in fixed assets. Show the pro forma financial statements for next year. What is the EFN for next year? The tax rate is 40 percent.

Sales	\$126,000,000
COGS	94,300,000
Other expenses	16,200,000
Depreciation	<u>7,500,000</u>
EBIT	\$8,000,000
Interest	<u>2,900,000</u>
Taxable income	\$5,100,000
Taxes (40%)	<u>2,040,000</u>
Net income	\$3,060,000

Dividends	\$1,400,000
Add to RE	1,660,000

Assets		Liabilities & Equity	
Current Assets		Current liabilities	
Cash	\$957,000	Accounts payable	\$1,050,000
Accounts rec.	1,130,000	Notes payable	<u>1,275,000</u>
Inventory	<u>1,959,000</u>	Total CL	\$2,325,000
Total CA	\$4,046,000		
		Long-term debt	\$19,400,000
Fixed assets		Shareholder equity	
Net PP&E	<u>\$55,800,000</u>	Common stock	\$5,500,000
		Retained earnings	<u>\$32,621,000</u>
		Total equity	<u>\$38,121,000</u>
Total assets	\$59,846,000	Total L&E	\$59,846,000