

**Multiple choice – 3 points each – 30 points total**

1. All else the same, a(n) \_\_\_\_\_ will decrease the required return on a bond.
  - A. call provision
  - B. lower bond rating
  - C. sinking fund
  - D. increase in inflation
  - E. increase in the size of the bond issue
  
2. Your company takes out a mortgage for \$10,000,000. The loan is amortized over 30 years with an interest rate of 8% and quarterly payments. The loan has a balloon payment in 5 years. What is the balloon payment assuming all quarterly payments were made exactly on time?
  - A. \$9,482,130
  - B. \$9,326,432
  - C. \$9,206,968
  - D. \$9,185,318
  - E. \$9,502,366
  
3. 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 form has \$1.50 in total assets.
  - E. The firm completely replaces its fixed assets 1.5 times a year on average.
  
4. All else the same, which of the following occurs when a firm buys inventory with cash?
  - A. The quick ratio goes up if it was greater than one before the purchase.
  - B. The current ratio goes up if it was greater than one before the purchase.
  - C. The quick ratio goes down if it was greater than one before the purchase.
  - D. The current ratio goes down if it was greater than one before the purchase.
  - E. The quick ratio declines but the current ratio remains unchanged.
  
5. What does the receivables period (days' sales in receivables ratio) measure?
  - A. The number of days it takes to generate dollar sales equal to the outstanding receivables.
  - B. The number of times a year the firm collects its receivables and renews its receivables.
  - C. The number of days in a year the firm's working capital becomes negative.
  - D. The number of days it would take to collect outstanding receivables if no new ones are created.
  - E. The number of days a firm takes to pay its bills assuming no new ones are created.

6. 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
7. Protective covenants are designed to protect:
- A. stockholders.
  - B. bondholders.
  - C. company management.
  - D. financial regulators.
  - E. stock markets.
8. Which of the following will increase the amount of the cash flow to creditors?
- A. A new long-term loan.
  - B. The early payment of an accounts payable.
  - C. An early payoff of a long-term loan.
  - D. A decrease in the rate of interest charged on a loan.
  - E. The payment of a cash dividend.
9. Last year a firm had a profit margin of 7%. This year the profit margin is 6%. Sales remained constant. Which one of the following statements is correct based on this information?
- A. The return on assets declined.
  - B. The return on equity increased.
  - C. The net income increased.
  - D. The price earnings ratio decreased.
  - E. The interval measure decreased.
10. A company had an ROA of 8 percent. The net profit margin was 4 percent on sales of \$250. What were total assets?
- A. \$30
  - B. \$64
  - C. \$125
  - D. \$224
  - E. \$317

**Partial Credit Problems --- SHOW ALL WORK**  
**TIMELINES REQUIRED FOR PROBLEMS 1, 2, 3, 4**

**Problem 1 (10 points)** You have successfully started and operated a company for the past 10 years. You have decided that it is time to sell your company and spend time on the beaches of Hawaii. A potential buyer is interested in your company, but does not have the necessary capital to pay you a lump sum. Instead, he has offered \$500,000 today and annuity payments for the balance. The first payment will be for \$225,000 in three months. The payments will increase at 2.2 percent per quarter and a total of 30 quarterly payments will be made. If you require an EAR of 11.5 percent, how much are you being offered for your company?

**Problem 2 (10 points)** You have just won the lottery! While the value of the lottery was announced as \$130 million, upon reading the fine print you find that you will actually receive 25 equal annual payments with the first payment received today. You would prefer equal monthly payments over the next 60 years with the first payment received today. If the APR is 9.5 percent compounded daily, what equal monthly payment would make you equally as well off as the payments proposed by the lottery?

**Problem 3 (14 points)** You are saving for retirement and currently have \$50,000 in your retirement account. You want to have \$10 million in your account in nominal dollars when you retire in 35 years. You will make monthly deposits into your account until you retire. When you retire, you will make monthly withdrawals for 30 years. You can earn an 11.1 percent nominal EAR before you retire and a 6.4 percent nominal EAR after you retire. The inflation rate is a 3.5 percent EAR over the entire period. How much will you need to deposit each month in real terms to fully fund your retirement? How much can you withdraw each month in real terms during your retirement? How much will your last withdrawal be in nominal terms?

**Problem 4 (9 points)** An engineer in 1965 earned an average of \$8,100 per year. In 2017, the average salary had increased to \$93,000. Over the same period, the average price of goods has increased by 6.07 times. What the real income in 1965 dollars?

**Problem 5 (10 points)** Following are the abbreviated financial statements for a company:

<b>Balance Sheet</b>				<b>Income Statement</b>	
	<b>2016</b>	<b>2017</b>		<b>2016</b>	<b>2017</b>
Current assets	\$1,306	\$707	Current liab.	\$522	\$586
Fixed assets	5,382	6,480	Long-term debt	2,844	3,024
			Sales		\$16,560
			Costs		7,722
			Depreciation		1,476
			Interest		422

- a. What is owners' equity for each year?
- b. What is the change in net working capital for 2017?
- c. In 2017, the company purchased \$2,700 in new fixed assets. How much in fixed assets did the company sell? If the tax rate is 23 percent, what is the cash flow from assets?
- d. During 2010, the company raised \$540 in new long-term debt. How much in long-term debt did the company pay off during the year? What is the cash flow to creditors?

**Problem 6 (8 points)** Credit terms are often stated in the following manner: 1/10, net 30. This means that if you pay within 10 days, you can take a 1 percent discount on the price, else the full amount is due in 30 days. For example, if you buy \$1,000 in goods, you can pay \$990 within 10 days or pay \$1,000 within 30 days. What is the EAR on this arrangement if you do not take advantage of the discount?

**Problem 7 (9 points)** The most recent financial statements for a company are shown below. Sales for next year are projected to grow by 20 percent. Interest expense and depreciation will remain constant; the tax rate and the dividend payout rate will also remain constant. COGS, other expenses, current assets, and accounts payable increase spontaneously with sales. Suppose the company is operating at 90 percent capacity and wishes to increase its sales by 20 percent. Prepare the pro forma financial statements and calculate the EFN. Assume fixed assets can be increased in any dollar amount desired and the company is willing to operate at full capacity.

Sales	\$198,000,000
COGS	108,600,000
Other expenses	21,500,000
Depreciation	<u>10,500,000</u>
EBIT	\$57,400,000
Interest	<u>4,350,000</u>
Taxable income	\$53,050,000
Taxes	<u>21,220,000</u>
Net income	\$31,830,000

Dividends	\$19,098,000
Add to RE	\$12,732,000

Assets		Liabilities & Equity	
Current assets		Current liabilities	
Cash and equivalents	\$1,358,000	Accounts payable	\$2,400,000
Accounts receivable	4,180,000	Notes payable	<u>1,870,000</u>
Inventories	<u>8,753,000</u>	Total current liabilities	\$4,270,000
Total current assets	\$14,291,000		
		Long-term debt	\$47,500,000
		Stockholders' equity	
Total fixed assets	<u>\$93,580,000</u>	Common stock	8,000,000
		Accumulated retained earnings	<u>48,101,000</u>
		Total equity	\$56,101,000
Total assets	\$107,871,000	Total liabilities and shareholders' equity	\$107,871,000