

Multiple choice – 3 points each – 30 points total

1. Assume a company uses cash to pay off current liabilities. What will happen to the current ratio?
 - A. It will increase.
 - B. It will remain the same.
 - C. It will decrease.
 - D. It will move further away from 1.0.
 - E. It will move closer to 1.0.

2. The carrying value or book value of assets:
 - A. is determined under GAAP and is based on the cost of the asset.
 - B. represents the true market value according to GAAP.
 - C. is always the best measure of the company's value to an investor.
 - D. is always higher than the replacement cost of the assets.
 - E. None of the above.

3. You are comparing two investment options. The cost to invest in either option is the same today. Both options will provide you with \$20,000 of income. Option A pays five annual payments starting with \$8,000 the first year followed by four annual payments of \$3,000 each. Option B pays five annual payments of \$4,000 each. Which one of the following statements is correct given these two investment options?
 - A. Option A is preferable because it is an annuity due.
 - B. Option A is the better choice of the two given any positive rate of return.
 - C. Option B has a higher present value than option A given a positive rate of return.
 - D. Option B has a lower future value at year 5 than option A given a zero rate of return.
 - E. Both options are of equal value given that they both provide \$20,000 of income.

4. Which of the following is not included in the computation of operating cash flow?
 - A. Earnings before interest and taxes
 - B. Interest paid
 - C. Depreciation
 - D. Taxes
 - E. All of the above are included.

5. A company had an ROA of 8%. The profit margin was 4% on sales of \$250. What were total assets?
 - A. \$30
 - B. \$125
 - C. \$500
 - D. \$180
 - E. \$220

6. If its yield to maturity is less than its coupon rate, a bond will sell at a _____, and increases 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.
7. Last year, Alfred's Automotive had a price-earnings ratio of 15. This year, the price earnings ratio is 18. Based on this information, it can be stated with certainty that:
- A. the price per share increased.
 - B. the earnings per share decreased.
 - C. investors are paying a higher price for each share of stock purchased.
 - D. investors are receiving a higher rate of return this year.
 - E. either the price per share, the earnings per share, or both changed.
8. What is the price of a bond with 12 years to maturity, a yield to maturity of 7.5 percent, and a coupon rate of 6.4 percent?
- A. \$938.27
 - B. \$929.72
 - C. \$902.19
 - D. \$964.18
 - E. \$913.95
9. Marcie's Mercantile wants to maintain its current dividend policy, which is a payout ratio of 40%. The firm does not want to increase its equity financing but is willing to maintain its current debt-equity ratio. Given these requirements, the maximum rate at which Marcie's can grow is equal to:
- A. the internal rate of growth.
 - B. 40% of the internal rate of growth.
 - C. the sustainable rate of growth.
 - D. 60% of the internal rate of growth.
 - E. 60% of the sustainable rate of growth.
10. An equity multiplier of 1.64 means that for every \$1 the firm raises in new equity, the firm can:
- A. acquire an additional \$1.64 in new assets.
 - B. acquire an additional \$1.64 in new debt.
 - C. earn \$1.64 in additional profits.
 - D. earn \$1.64 in additional profits per share.
 - E. pay \$1.64 in additional dividends per share.

Partial Credit Problems --- SHOW ALL WORK

Problem 1 (12 points) You are saving for retirement and currently have \$75,000 in your retirement account. You plan to save \$1,200 per month in real terms for the next 30 years. When you retire, you will make monthly withdrawals for 25 years. Additionally, you want to go on a trip around the world in 10 years. You expect the cost of the trip will be \$100,000 in nominal terms at that time. You can earn an 11.5 percent nominal EAR before you retire and a 6.5 percent nominal EAR after you retire. If the inflation rate is a 3 percent EAR over the entire period, how much can you withdraw each month in real terms? What is the nominal value of your last withdrawal?

Problem 2 (8 points) You have just won the Joe Schmo Lottery™. You will receive 20 payments of \$500,000 every four years with the first payment 3 years from today. Since you don't think you will be around to receive all of the payments, you go to a broker to sell your winnings. If the appropriate interest rate is a 7 percent APR compounded daily, how much should you receive today for your winnings?

Problem 3 (9 points) You have decided to have a room remodeled at cost of \$10,000. 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 13 percent per year with monthly payments. Since the total interest over the two years will be \$2,600 ($2 \times .13 \times \$10,000$), your total monthly payment will be $\$12,600 / 24 = \525 . What is the APR and EAR of the loan?

Problem 4 (9 points) Babe Ruth was the highest paid baseball player in 1930 with a salary of \$80,000, which was higher than President Herbert Hoover. When asked about this, Ruth responded "I know, but I had a better year than Hoover." In 2018, Mike Trout had the highest salary in baseball at \$34.1 million. Also in 1930, the Consumer Price Index (CPI) stood at 16.7. In 2018, the CPI level was 252.15. What was the real growth rate in the highest baseball salary? What salary would Babe Ruth have been paid in 1930 assuming he received the same real salary as Mike Trout?

Problem 5 (11 points) (NOTE: This is a time value of bond, not a bond problem.) The Alfred Bowles Company (ABC) is offering an 8-year bond for sale at a par value of \$1,000 and semi-annual interest payments. The bond is unusual in that the interest rate is based on the federal deficit, Super Bowl winners and the honesty of The Weather Channel live announcers (which has to increase). After you examine the features of the bond, you feel that it will have an annual interest rate of 10 percent for the first four years and 12 percent for the last four years. Since these interest payments are too small to invest in more bonds, you will put your interest payments into a savings account. The savings account will pay a 5 percent effective annual rate the first three years and a 7 percent effective annual rate for the last five years. Assuming all these facts are correct, what is your effective annualized return on this investment?

Problem 6 (11 points) You have just won the Life's Downhill after 30™ lottery. The lottery payments will be made for the next 30 years. The payments are slightly unusual in that you will be paid \$600,000 every six months starting six months from today for a total of 60 payments. You will also receive \$900,000 every nine months starting nine months from today for a total of 40 payments. When the payments coincide, for example 18 months from today, you will receive both payments. If the interest rate is 0.7 percent per month, what is the present value of your winnings?

Problem 7 (10 points) The most recent financial statements a company are shown below. Sales for next year are projected to grow by 20 percent. Interest expense, notes payable, long-term debt and depreciation will remain constant; the tax rate and the dividend payout rate will also remain constant. Costs, 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 wants to operate at full capacity.

Sales	\$99,000,000
COGS	64,300,000
Other expenses	10,750,000
Depreciation	<u>5,252,000</u>
EBIT	\$18,698,000
Interest	<u>2,175,000</u>
Taxable income	\$16,523,000
Taxes (21%)	<u>3,469,830</u>
Net income	\$13,053,170

Dividends	\$11,125,100
Add to RE	1,928,070

Assets		Liabilities & Equity	
Current assets		Current liabilities	
Cash and equivalents	\$679,000	Accounts payable	\$1,150,000
Accounts receivable	2,090,000	Notes payable	<u>2,915,000</u>
Inventories	<u>4,376,500</u>	Total current liabilities	\$4,065,000
Total current assets	\$7,145,500		
		Long-term debt	\$33,750,000
Total fixed assets	<u>\$62,740,000</u>	Stockholders' equity	
		Common stock	\$4,000,000
		Accumulated retained earnings	<u>28,070,500</u>
		Total equity	\$32,070,500
Total assets	\$69,885,500	Total liabilities and shareholders' equity	\$69,885,500