

Midterm Exam

Financial Management (1560, Fall 2019)
National Chiao Tung University
November 4, 2019 (Monday) 13:20 to 15:10

Instructions

- Please read the questions carefully and make sure you provide answers to all parts of questions.
- Raise your hand if you have any problem. Please do not talk to or exchange notes with other students.
- No bathroom breaks are allowed.
- Turn off your cell phone(s) and any other electronic device.

Part I. Multiple Choice (50%, 2 points each, choose one correct answer):

1. Which of the following statements is incorrect?
 - (A) The asset turnover ratio and inventory turnover ratio are both efficiency ratios.
 - (B) The inventory turnover ratio times the average days in inventory equals 365.
 - (C) Return on assets and return on equity are both profitability ratios.
 - (D) EVA is the net profit of the firm adjusted for the cost of capital.
 - (E) Increasing leverage will always act to increase a firm's ROE.

2. Under which of the following conditions will a future value calculated with simple interest exceed a future value calculated with compound interest at the same rate?
 - (A) The interest rate is very high.
 - (B) The investment period is very long.
 - (C) The compounding is annually.
 - (D) The compounding is continuous.
 - (E) This is not possible with positive interest rates.

3. The current yield of a bond can be calculated by:
 - (A) multiplying the price by the coupon rate.
 - (B) dividing the price by the annual coupon payments.
 - (C) dividing the annual coupon payments by the price.
 - (D) dividing the price by the par value.
 - (E) dividing the annual coupon payments by the par value.

4. Which one of the following will cause a reduction in the NWC turnover ratio all else held constant?
- (A) A decrease in sales.
 - (B) An increase in average inventory.
 - (C) An increase in the average cash balance.
 - (D) A decrease in net income.
 - (E) An increase in average payables.
5. In calculating the present value of \$1,000 to be received 5 years from today, the discount factor has been calculated to be .7008. What is the apparent interest rate?
- (A) 5.43%.
 - (B) 7.37%.
 - (C) 8.00%.
 - (D) 9.50%.
 - (E) 11.33%.
6. Which one of the following must be correct for a bond currently selling at a premium?
- (A) Its coupon rate is variable.
 - (B) Its yield to maturity is higher than its coupon rate.
 - (C) Its coupon rate is lower than the current market rate on similar bonds.
 - (D) The interest rate has been increased since the bond was issued.
 - (E) Its current yield is lower than its coupon rate.
7. Which one of these costs accounts for the difference between accounting income and economic value added?
- (A) Depreciation.
 - (B) Cost of capital.
 - (C) Taxes.
 - (D) Dividends.
 - (E) Interest expense.
8. Cash flows occurring in different periods should not be compared unless:
- (A) interest rates are expected to be stable.
 - (B) the flows occur no more than one year from each other.
 - (C) high rates of interest can be earned on the flows.
 - (D) the flows have been discounted to a common date.
 - (E) the distance between each flow is constant.

9. The existence of an upward-sloping yield curve suggests that:
- (A) bonds should be selling at a discount to par value.
 - (B) bonds will not return as much as common stocks.
 - (C) interest rates will be increasing in the future.
 - (D) real interest rates will be increasing soon.
 - (E) the economic condition will turn bad soon.
10. What must happen to asset turnover to leave ROE unchanged from its original 16% level if the profit margin is reduced from 8% to 6% and the leverage ratio increases from 1.2 to 1.6? Asset turnover must?
- (A) increase from 1.46 to 2.33.
 - (B) increase from 1.38 to 1.67.
 - (C) decrease from 1.74 to 1.67.
 - (D) decrease from 2.33 to 1.46.
 - (E) remain constant.
11. You will be receiving cash flows of: \$1,000 today, \$2,000 at end of year 1, \$4,000 at end of year 3, and \$6,000 at end of year 5. What is the present value of these cash flows at an interest rate of 7%?
- (A) \$9,731.13.
 - (B) \$10,412.27.
 - (C) \$10,524.08.
 - (D) \$11,524.91.
 - (E) \$13,631.64.
12. If an investor purchases a 3%, 5-year TIPS at its par value of \$1,000 and the CPI increases 3% over each of the next 5 years, what will be the real value of the principal at maturity?
- (A) \$1,000.00.
 - (B) \$1,030.00.
 - (C) \$1,060.90.
 - (D) \$1,061.36.
 - (E) \$1,300.00.
13. Which one of the following will increase a firm's times interest earned ratio?
- (A) An increase in debt.
 - (B) A decrease in cost of goods sold.
 - (C) An increase in interest expense.
 - (D) A decrease in net income.
 - (E) An increase in account payable.

14. A perpetuity of \$5,000 per year beginning today is said to offer a 15% interest rate. What is its present value?
- (A) \$33,333.33.
 - (B) \$37,681.16.
 - (C) \$38,333.33.
 - (D) \$65,217.39.
 - (E) \$66,667.56.
15. An investor buys a 5-year, 9% coupon bond for \$975, holds it for 1 year, and then sells the bond for \$985. What was the investor's rate of return?
- (A) 9.00%.
 - (B) 9.23%.
 - (C) 9.65%.
 - (D) 10.26%.
 - (E) 10.89%.
16. What is primarily responsible for the potential distortion among the ROA of different firms when net income is used in the numerator of ROA?
- (A) Firms have different dividend payout ratios.
 - (B) Some firms use fully depreciated assets.
 - (C) Financial leverage varies among firms.
 - (D) Unprofitable firms will not have any tax liability.
 - (E) Firms in different industries have various combination of profit margin and asset turnover rate..
17. What is the present value of a four-year annuity of \$100 per year that begins 2 years from today if the discount rate is 9%?
- (A) \$297.22.
 - (B) \$323.97.
 - (C) \$356.85.
 - (D) \$272.68.
 - (E) \$196.14.
18. Which one of the following is most apt to be correct for a CCC-rated bond, compared to a BBB-rated bond?
- (A) The CCC bond will have a variable-coupon rate.
 - (B) The CCC bond will have a shorter term.
 - (C) The CCC bond will offer a higher promised yield to maturity.
 - (D) The CCC bond will have a higher price for the same term.
 - (E) The CCC bond will have a lower current yield.

19. What is the residual income for a firm with \$1 million in total capital, \$300,000 in net income, and a 20% cost of capital?
- (A) \$100,000.
 - (B) \$140,000.
 - (C) \$240,000.
 - (D) \$500,000.
 - (E) \$650,000.
20. An amortizing loan is one in which:
- (A) the principal remains unchanged with each payment.
 - (B) accrued interest is paid regularly.
 - (C) the maturity of the loan is variable.
 - (D) the principal balance is reduced with each payment.
 - (E) most interests are paid-off at the end of loan period.
21. How much would an investor need to receive precisely in nominal return if he desires a real return of 4% and the rate of inflation is 5%?
- (A) 4.20%.
 - (B) 8.64%.
 - (C) 9.00%.
 - (D) 9.20%.
 - (E) 10.51%.
22. Which of these assets is generally considered to be the most liquid?
- (A) Buildings.
 - (B) Land.
 - (C) Finished goods inventory.
 - (D) Account receivable.
 - (E) Machines.
23. What is the effective annual interest rate on a 9% APR automobile loan that has monthly payments?
- (A) 9.00%.
 - (B) 9.38%.
 - (C) 9.81%.
 - (D) 10.94%.
 - (E) 10.62%.

24. The current yield tends to overstate a bond's total return when the bond sells for a premium because:
- (A) the bond's price will decline each year.
 - (B) coupon payments can change at any time.
 - (C) bonds selling for a premium have low default risk.
 - (D) taxes must be paid on the current yield.
 - (E) the bond might be called soon.
25. An asset turnover ratio of 1.75 can be interpreted as:
- (A) \$1.75 in sales are generated by every \$1 of assets.
 - (B) \$1.75 in additional assets are generated by every \$1 of sales.
 - (C) \$1.75 in assets are used to generate \$1 of sales.
 - (D) \$1 in sales are used to generate \$1.75 in assets.
 - (E) \$1.75 in additional net incomes are generated by every \$1 of assets.

Part II. Problems (50%, detail procedures must be provided):

1. (11 points) Measuring corporate performance.
 - (A) (5 points) Last year's asset turnover ratio was 2.0. Sales have increased by 25% and average total assets have increased by 10% since that time. What is the current asset turnover ratio?
 - (B) (6 points) What is the inventory turnover ratio for ABC Corp. if cost of goods sold equals \$5,000, current ratio equals 3.0, quick ratio equals 1.5, and the firm has \$1,800 in current assets?
2. (8 points) The board of directors is dissatisfied with last year's ROE of 15%. If the profit margin and asset turnover remain unchanged at 8% and 1.25, respectively, by how much must the total debt ratio increase to achieve 20% ROE?
3. (6 points) Sappy Syrup has a profit margin below the industry average, but its ROA equals the industry average. How is this possible?
4. (6 points) A corporation has promised to pay \$1,000 20 years from today for each bond sold now. No interest will be paid on the bonds during the 20 years, and the bonds are discounted at an interest rate of 7%, compounded semiannually. Approximately how much should an investor pay for each bond?
5. (6 points) What APR is being earned on a deposit of \$5,000 made 10 years ago today if the deposit is worth \$9,848.21 today? The deposit pays interest semiannually.
6. (6 points) If you purchase a 5-year, zero-coupon bond for \$691.72, how much could it be sold for 3 years later if interest rates have remained stable?
7. (7 points) How much should you be prepared to pay for a 10-year bond with an annual coupon of 6% and a yield to maturity of 7.5%?