

Ryerson University
Ted Rogers School of Management

FIN300
Midterm Exam
Fall 2013

Version A

Student Name _____ (Please print)

Student Number

Instructor Name

Notes:

1. This is a 2-hour exam. There are 10 pages in this exam.
2. This is a closed book exam. You should only have writing instruments, calculators, and a double-sided note sheet (8.5x11”) at your desk.
3. Please fill out the scanner sheet as you go during the exam – there is no extra time to fill it out at the end.
4. Select the best possible answer for each multiple-choice question.
5. Each of the 30 MC questions is worth 1 mark. Therefore, the midterm is out of 30.
6. Please hand in the scanner sheet, your note sheet, and this question booklet all together at the end of the exam.

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| 1. | The retention ratio equals one _____ the _____? |
| A) | Minus, capital intensity ratio |
| B) | Plus, dividend payout ratio |
| C) | Plus, total asset turnover ratio |
| D) | Minus, dividend payout ratio |
| E) | Plus, capital intensity ratio |

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| 2. | 123 Inc has a profit margin of 15%. Its total asset turnover ratio is 2 and its dividend payout ratio is 60%. What is the company's internal growth rate? |
| A) | 42.86% |
| B) | 13.64% |
| C) | 18.00% |
| D) | 21.95% |
| E) | 12.00% |

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| 3. | 456 Inc has a profit margin of 12%. It has a capital intensity ratio of 0.80 and its debt/equity ratio is 2. The company's net income was \$100,000 and company paid a dividend of \$70,000. What is the sustainable growth rate? |
| A) | 15.61% |
| B) | 18.64% |
| C) | 12.00% |
| D) | 21.95% |
| E) | 13.50% |

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| 4. | DEF Inc is operating at 70% of fixed asset capacity. Current Sales are \$500,000. By how much can sales increase before the company must add to its fixed assets? |
| A) | \$214,286 |
| B) | \$150,000 |
| C) | \$166,667 |
| D) | \$125,000 |
| E) | \$200,000 |

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| 5. | You have been told that a company had sales of \$20,000 last year. The company's costs were \$16,000 last year. The company's tax rate is 30%. The company paid a dividend of \$1,120 last year. The company had assets of \$50,000. It had debt of \$20,000 and total equity of \$30,000. Assets and costs are proportional to sales (therefore, assets and costs increase at the same rate as sales). The company's dividend payout ratio will not change next year. Next year's sales are projected to be \$30,000. If debt does not change next year, and no new shares are issued by the firm, what is the amount of the external financing needed? |
| A) | \$22,900 |
| B) | \$22,480 |
| C) | \$24,160 |
| D) | \$23,740 |
| E) | \$23,320 |

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| 6. | Given the following information: current assets = \$400; fixed assets = \$500; accounts payable = \$100; notes payable = \$45; long-term debt = \$455; equity = \$300; sales = \$450; costs = \$400; tax rate = 34%. Suppose that current assets, costs, and accounts payable maintain a constant ratio to sales. If the firm is producing at 80% capacity, what is the total external financing needed if sales increase 25%? Assume the firm pays no dividends. |
| A) | \$66.25 |
| B) | \$380.25 |
| C) | \$33.75 |
| D) | \$143.75 |
| E) | \$172.50 |

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| 7. | You invest \$500 in an account that pays 6 percent simple interest per year. How much more could you have earned over a thirty year period if the interest had compounded annually? |
| A) | \$1,804.25 |
| B) | \$1,471.75 |
| C) | \$1,532.50 |
| D) | \$2,371.75 |
| E) | \$1,621.25 |

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| 8. | You have decided to help your younger sister pay for university. Your sister will go to university 12 years from today. You have \$3,500 in an investment account. When your sister starts university you want the account to contain \$35,000. What is the effective annual rate of return you must earn? |
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| A) | 16.59% |
| B) | 15.48% |
| C) | 21.15% |
| D) | 19.38% |
| E) | 17.88% |

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| 9. | You have decided to start a retirement savings account. You invest \$11,000 today. Your retirement savings account earns an effective annual rate of return of 3%. You wish to have \$1,500,000 when you retire. How many years will it be until you can retire? | |
| A) | 166.3 years | |
| B) | 100.7 years | |
| C) | 84.4 years | |
| D) | 72.6 years | |
| E) | 125.3 years | |

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| 10. | A common-size balance sheet expresses all balance sheet items as a percentage of: | |
| A) | Net Income | |
| B) | Total assets | |
| C) | Fixed assets | |
| D) | Current assets | |
| E) | Sales | |

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| 11. | Which of the following are considered a source of cash? | |
| I. | Common stock decreases. | |

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| II. | Accounts payable increase. | |
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| III. | Accounts receivable decrease. | |
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| IV. | Inventory increases. | |
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| A) | I, II, and III only |
| B) | I only |
| C) | I, II, III, and IV |
| D) | III and IV only |
| E) | II and III only |

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| 12. | If a firm produces a 10 percent return on assets and also a 10 percent return on equity, then the firm: |
| A) | also has a current ratio of 10. |
| B) | has no debt of any kind. |
| C) | has an equity multiplier of 2. |
| D) | has no net working capital. |
| E) | is using its assets as efficiently as possible. |

Use the following to answer question 13:

| ICU Security Systems Statement of Comprehensive Income Year Ending December 31, 2012 | | ICU Security Systems Statement of Financial Position as of December 31, 2011 and 2012 | | | |
|--|----------|---|----------|----------|------|
| | | | | 2011 | 2012 |
| Sales | \$19,000 | <i>Assets</i> | | | |
| Cost of goods sold | 12,000 | Cash | \$2,000 | \$2,200 | |
| Depreciation expense | 1,500 | Accounts receivable | 3,000 | 3,500 | |
| General expense | 1,000 | Inventory | 4,000 | 4,200 | |
| Interest expense | 1,200 | Total current assets | 9,000 | 9,900 | |
| Taxable income | 3,300 | Fixed assets | 13,000 | 13,800 | |
| Taxes | 1,440 | Total assets | \$22,000 | 23,700 | |
| Net income | \$1,860 | <i>Liabilities and Equity</i> | | | |
| Dividends | \$564 | Accruals | \$1,600 | \$1,760 | |
| Addition to retained earnings | \$1,296 | Accounts payable | 2,400 | 2,640 | |
| | | Total current liabilities | 4,000 | 4,400 | |
| | | Long-term debt | 15,000 | 15,004 | |
| | | Shareholder's equity | 3,000 | 4,296 | |
| | | Total liabilities and equity | \$22,000 | \$23,700 | |

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| 13. | The firm's quick ratio for 2012 was: |
| A) | 2.25 |
| B) | 1.30 |
| C) | 0.50 |
| D) | 0.83 |
| E) | 2.08 |

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| 14. | You have the following data for the Fosberg Winery. What is Fosberg's return on assets (ROA)? Return on equity = 15%; Earnings before taxes = \$30,000; Total asset turnover = 0.80; Profit margin = 4.5%; Tax rate = 35%. |
| A) | 5.7% |
| B) | 6.4% |
| C) | 3.9% |
| D) | 9.3% |
| E) | 3.6% |

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| 15. | An investment will make annual payments. The first payment of \$2.30 will be made one year from today. The amount of the annual payments will grow at 4.5% per year in perpetuity. If you require an effective annual rate of return of 11% on your investments, what price would you be willing to pay for the investment? |
| A) | \$24.04 |
| B) | \$36.98 |
| C) | \$21.85 |
| D) | \$33.86 |
| E) | \$35.38 |

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| 16. | Pey Soon has taken out a 20-year, \$150,000 mortgage with monthly payments (made at the end of each month) at a stated mortgage rate of 6.8% per year compounded semi-annually. If she makes each payment on time, what will be the mortgage principal remaining after 10 years? |
| A) | \$119,043 |
| B) | \$118,765 |
| C) | \$99,182 |
| D) | \$146,940 |
| E) | \$99,497 |

Use the following to answer questions 17-18:

Justin Case has purchased a \$250,000 home by putting 20% down and taking out a 25-year mortgage with semi-monthly payments of \$600 to finance the rest. The payments will be made at the end of each period.

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| 17. | What was the quoted interest rate for the mortgage (with semi-annual compounding)? |
| A) | 5.27% |
| B) | 5.47% |
| C) | 5.41% |
| D) | 5.20% |
| E) | 5.33% |

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| 18. | Assuming that Justin makes every payment on time, what will be the total dollar amount of interest that he will pay over the life of the mortgage? |
| A) | \$90,000 |
| B) | \$140,350 |
| C) | \$10,735 |
| D) | \$160,000 |
| E) | \$110,735 |

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| 19. | Which of the following is a disadvantage of the corporate form of ownership? |
| A) | Ability to raise capital |
| B) | Double taxation |
| C) | Limited liability |
| D) | The life of the corporation |
| E) | Ease of transfer of ownership |

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| 20. | Which of the following is NOT a component of cash flow to creditors? |
| I. | Interest paid |

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| II. | Net new borrowing |
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| III. | Dividends paid |
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| IV. | Depreciation |
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| A) | I and IV only |
| B) | IV only |
| C) | III and IV only |
| D) | I only |
| E) | II and III only |

Use the following to answer questions 21-22:

| | 2011 | 2012 |
|---------------------|--------|--------|
| Sales | \$2900 | \$3300 |
| Cost of Goods Sold | 2030 | 2310 |
| Interest | 410 | 420 |
| Dividends | 56 | 79 |
| Depreciation | 290 | 330 |
| Cash | 250 | 150 |
| Receivables | 242 | 412 |
| Current liabilities | 900 | 1100 |
| Inventory | 1015 | 900 |
| Long term debt | 3200 | 3100 |
| Net fixed assets | 6000 | 5700 |
| Tax rate | 34% | 34% |

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| 21. | What is the change in net working capital during 2012? |
| A) | \$607 |
| B) | -\$125 |
| C) | -\$245 |
| D) | \$362 |
| E) | \$904 |

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| 22. | What is cash flow to creditors for 2012? |
| A) | \$420 |

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| B) | \$100 |
| C) | \$720 |
| D) | \$502 |
| E) | \$520 |

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| 23. | Summer Brook Hospital is planning to create an endowment, which will pay \$500,000 per year forever. The first payment will not be received until four years from today. How much money needs to be set aside today if the effective annual rate of return is 8%? |
| A) | \$4,961,451.51 |
| B) | \$4,593,936.58 |
| C) | \$5,238,912.87 |
| D) | \$6,250,000.00 |
| E) | \$6,987,345.50 |

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| 24. | Your parents are planning to save \$25,000 to buy a new house three years from now. The plan is to set aside an equal amount of money on the first day of each year starting today. Their savings can earn an effective annual rate of return of 4.7 percent. How much do your parents have to set aside each year to achieve their goal? |
| A) | \$8,333.33 |
| B) | \$8,141.41 |
| C) | \$7,689.62 |
| D) | \$7,596.61 |
| E) | \$7,800.47 |

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| 25. | You have received a bonus of \$5,000 that you would like to invest. You have three choices: BMO savings account which earns 15% compounded daily; TD savings account which earns 15.5% compounded quarterly; and CIBC savings account which earns 16% compounded annually. Which would you choose and why? |
| A) | TD, because it offers the highest effective annual rate. |
| B) | CIBC, because the rate is compounded less frequently. |
| C) | BMO, because it offers the highest effective annual rate. |
| D) | BMO, because the rate is compounded daily. |
| E) | CIBC, because it offers the highest effective annual rate. |

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| 26. | You are the financial manager at Best Buy where a certain TV set is normally sold for \$2,500 and the full purchase price is financed for 30 monthly payments at 24% per year compounded monthly, with the payments made at the end of each month. During Christmas Best Buy is planning to run a zero-interest financing sale during which you will offer the customers to finance the TV set over 30 months at 0% interest. How much do you need to charge for the TV set during the Christmas sale in order to earn your usual combined return on the sale and the financing? |
| A) | \$3,437 |
| B) | \$2,500 |
| C) | \$3,349 |
| D) | \$2,827 |
| E) | \$3,784 |

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| 27. | Find the present value of an annuity that pays \$500 at the end of each month, for 5 years, if the appropriate rate of return is 8% per year compounded monthly? |
| A) | \$27,727.91 |
| B) | \$19,992.94 |
| C) | \$45,216.47 |
| D) | \$24,659.22 |
| E) | \$33,937.14 |

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| 28. | You are considering an investment that promises to make 10 payments of \$5,000. The payments will be made every two years. The only twist is that the first payment will be received in one year. If you required a return of 10% per year compounded semi-annually, how much would you be willing to pay for this investment? |
| A) | \$18,054.93 |
| B) | \$23,046.22 |
| C) | \$21,945.87 |
| D) | \$16,445.31 |
| E) | \$19,905.56 |

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| 29. | You plan to make 24 equal quarterly payments (payments are at the end of each period) into an account to pay 8% (per year compounded quarterly). If you need \$5,000 at the end of 10 years (i.e. 4 years after the last payment is made into the account), how much would you have to deposit into the account every quarter? Round your answer to the nearest 10 dollars. |
| A) | \$140 |
| B) | \$120 |
| C) | \$130 |

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| D) | \$100 |
| E) | \$110 |

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| 30. | You have borrowed \$135,000 from the bank today. You are required to repay this money over the next six years by making monthly payments of \$2,215.10 at the end of each month. What is the quoted interest rate for the loan (with monthly compounding)? |
| A) | 5.65% |
| B) | 6.13% |
| C) | 9.63% |
| D) | 4.71% |
| E) | 6.38% |

Answer Key

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| 1. | D |
| 2. | B |
| 3. | A |
| 4. | A |
| 5. | B |
| 6. | C |
| 7. | B |
| 8. | C |
| 9. | A |
| 10. | B |
| 11. | E |
| 12. | B |
| 13. | B |
| 14. | E |
| 15. | E |
| 16. | C |
| 17. | E |
| 18. | D |
| 19. | B |
| 20. | C |
| 21. | C |
| 22. | E |
| 23. | A |
| 24. | D |
| 25. | A |
| 26. | C |
| 27. | D |
| 28. | C |
| 29. | B |
| 30. | A |
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