
FIN 401
RYERSON UNIVERSITY
Final Exam – December 6, 2013 – Prof. M. Toffanin
Version A

Time allowed: 3 hours

Aids allowed: Closed book except for an 8 1/2" by 11" crib sheet; financial calculator

There are **50** multiple choice questions and each question is worth 1 mark.

Answer all questions on the scantron sheet. Only the scantron sheets will be graded.

There are two blank pages at the end for extra work. **Do not take apart the exam paper.**

For questions involving calculations, choose the closest answer. Good luck!

1. Which version of the exam do you have? This is a free mark – take it. Make sure you answer it correctly, though.
 - A) Version A
 - B) Version B
 - C) Version C
 - D) Version D

 2. Santa's Helpers Inc. is considering a six-year project to improve its toy production efficiency. Buying a new toy-soldier assembly machine for \$500,000 is estimated to result in \$135,000 in annual pre-tax cost savings. The machine has a CCA rate of 30% per year, and it will have a salvage value of \$50,000 at the end of the project. The machine also requires an initial investment in inventory of \$20,000, which will be recovered at the end of the project. If the tax rate is 40% and the discount rate is 10%, what is the NPV of the machine purchase?
 - A) -\$4,285
 - B) \$7,004
 - C) \$53,941
 - D) \$107,473
 - E) None of the above.

 3. When a firm is trying to decide whether to replace a 10-year-old piece of equipment with a newer model that will last for 5 years, which of the following factors should it consider?
 - I. The price paid for the equipment ten years ago.
 - II. The price it would receive for selling the old equipment today.
 - III. The salvage value of the old equipment five years from now.
 - A) I and II only
 - B) II and III only
 - C) I and III only
 - D) I, II, and III
 - E) None of the above are relevant to the replacement decision.
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Please use the following information to answer the next TWO questions.

A company has 600,000 common shares outstanding and they sell for \$90 per share. The common shares pay an annual dividend of \$9 per share and the last dividend was paid yesterday. The dividend is expected to grow by 5% each year. The company also has 45,000 bonds outstanding, each with a face value of \$1,000. They have a coupon rate of 7%, paid annually. The bonds mature in 40 years and are currently selling for 110% of their face value. The company's tax rate is 30%.

4. What is the firm's after-tax cost of debt?
 - A) 3.5%
 - B) 4.42%
 - C) 4.9%
 - D) 6.31%
 - E) None of the above.

5. Assume that the firm's pre-tax cost of debt is 10% (it's not). What is the firm's WACC?
 - A) 10.08%
 - B) 11.17%
 - C) 11.43%
 - D) 15.5%
 - E) None of the above.

Please use the following information to answer the next THREE questions.

Goldberg Inc. is trying to decide whether to lease or buy a new computer system for its manufacturing operations. The computer system will give Goldberg a competitive advantage and will generate an additional \$1,000,000 in annual pre-tax revenues. The system costs \$3,100,000 and qualifies for a 40% CCA rate. The system will have no salvage value in 5 years. Goldberg's tax rate is 35%, and the firm can borrow at 15%. AAA Leasing Corp. has offered to lease the computer system to Goldberg for payments of \$800,000 per year, and AAA's policy requires that its lessees make their lease payments at the START of the year.

6. What is the present value of the after-tax lease payments?
 - A) -\$1,983,863
 - B) \$1,983,863
 - C) \$2,004,589
 - D) \$2,177,290
 - E) None of the above.

7. What is the NAL of the computer system from Goldberg's point of view?
 - A) \$89,098
 - B) -\$89,098
 - C) \$282,524
 - D) -\$82,916
 - E) None of the above.

8. Suppose instead that the CCA rate on the computer system is 50%. What would happen to the NAL from AAA's point of view?
- A) The NAL would increase.
 - B) The NAL would decrease.
 - C) The NAL would remain unchanged.
 - D) There is not enough information to answer the question.
 - E) None of the above.

Please use the following information to answer the next FOUR questions.

Finance Inc. has an expected EBIT of \$50 million and it expects to earn this EBIT in perpetuity. The corporate tax rate is 25% and the unlevered cost of equity is 13%. The company has 7.5 million shares outstanding. The company is currently all-equity financed. The company is thinking about issuing \$150 million of debt (at a rate of 4%) and using the proceeds to repurchase shares.

9. What is the value of the company's equity prior to the announcement of the debt issue and the share repurchase?
- A) \$500,000,000
 - B) \$384,615,385
 - C) \$288,461,539
 - D) \$325,961,539
 - E) \$175,961,539
10. What will be the required rate of return on the company's equity after the debt is issued and the shares are repurchased?
- A) 12.89%
 - B) 16.11%
 - C) 18.75%
 - D) 24.25%
 - E) None of the above.
11. Assume now that your answer to the previous question was 17% (it's not). What will be the company's WACC after the debt is issued and the shares are repurchased?
- A) 10.56%
 - B) 13%
 - C) 15.5%
 - D) 17%
 - E) None of the above.
12. Now suppose the tax rate is 0% instead of 25%. What would be the firm's WACC after the restructuring? Hint: think of M&M Proposition II under no taxes.
- A) 10%
 - B) 13%
 - C) 15%
 - D) 18.75%
 - E) None of the above.

13. Clown University Inc. is in financial distress due to quickly rising costs combined with significantly declining enrollment (the demand for clowns just isn't what it used to be). The shareholders of ClownU are currently evaluating two options. Option I is to reorganize by making the university more cost effective and accepting other circus students. If the firm reorganizes, it will have an after-tax cash flow of \$15,000 per year forever. Option II is to liquidate and sell off all of the university's assets (red noses, horns, balloons, and the like) for \$100,000 today. Assuming a discount rate of 10%, should ClownU reorganize or liquidate?
- A) The firm should liquidate because it will never get out of financial distress.
 - B) It should reorganize, because firm value is \$50,000 higher under reorganization than liquidation.
 - C) It should liquidate, because firm value is \$50,000 higher under liquidation than reorganization.
 - D) The two options are of equal value and the firm is indifferent between them.
 - E) None of the above.

Please use the following information to answer the next THREE questions.

Sell Phone Corp, an unlevered firm, has 500,000 shares outstanding and a market value of \$20,000,000. The firm's EBIT is \$1.25m and it pays no taxes. The firm is thinking of changing its capital structure by issuing \$5 million in new debt at 10%. Using the entire proceeds from the newly issued debt, the firm would repurchase shares of its outstanding stock.

14. What is the break-even EBIT between the initial and the proposed capital structures?
- A) \$1,000,000
 - B) \$1,250,000
 - C) \$2,000,000
 - D) \$3,750,000
 - E) None of the above.
15. Suppose that you're a shareholder of Sell Phone Corp. and you own 1,000 shares. You prefer the all-equity capital structure, but the firm has decided to convert to the proposed capital structure. In order to replicate the all-equity capital structure using homemade leverage, what would you have to do? Assume that you can borrow/lend money at the same rate as the firm.
- A) Borrow \$10,000 at 10% and buy 250 shares in the firm.
 - B) Sell 250 shares and put the \$10,000 proceeds in the bank at 10%.
 - C) Borrow \$5,000 at 10% and buy 500 shares in the firm.
 - D) Sell 500 shares and put the \$10,000 proceeds in the bank at 10%.
 - E) None of the above.

16. Suppose instead that you have 1,200 shares. Further suppose that you prefer the proposed capital structure, but the firm has decided to remain all-equity. What would your total cash flow be if you replicated the proposed capital structure using homemade leverage? Continue to assume that you can borrow and lend money at the same rate as the firm.
- A) \$1,400
 - B) \$1,875
 - C) \$2,400
 - D) \$4,000
 - E) None of the above.
17. A firm's stock price will fall on which of the following events:
- I. Ex-dividend day, for a cash dividend
 - II. Ex-dividend day, for a stock dividend
 - III. Ex-rights day
 - IV. 2 for 1 stock split
- A) I and II
 - B) II and III
 - C) I, II, and III
 - D) I, II, III, and IV.
 - E) None of the above.

Please use the following information to answer the next TWO questions.

Polished Nails Inc. has determined that market conditions will only allow the company to operate for the next 2 years. Polished Nails is an all-equity firm and it will pay a dividend of \$8.80/share next year and a liquidating dividend of \$16.94 at the end of the 2nd year. There are 25,000 shares outstanding and the current share price is \$22.00. Ignore taxes and assume a discount rate of 10%.

18. You own 100 shares in Polished Nails. If you were to use homemade dividends to generate equal dividends over the next two years, how many shares would you need to buy or sell at the end of the first year? (Assume fractional shares can be bought and sold.)
- A) You need to buy 25.19 shares.
 - B) You need to buy 17.64 shares.
 - C) You need to sell 25.19 shares.
 - D) You need to sell 17.64 shares.
 - E) No shares would be bought or sold at the end of the first year.
19. If instead you wanted the first dividend to be three times the size of the second dividend (and dividends were positive in every period), how would it be achieved using homemade dividends?
- A) You will sell 44.42 shares at time 1.
 - B) You will sell 63.45 shares at time 1.
 - C) You will buy 63.45 shares at time 1.
 - D) You will buy 44.42 shares at time 1.
 - E) None of the above.

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20. A 5 for 1 stock split is equivalent to a _____ stock dividend.
- A) 80%
 - B) 100%
 - C) 200%
 - D) 400%
 - E) None of the above.

Please use the following information to answer the next TWO questions.

Blue Pictures Inc. (BPI) is considering a rights offer to raise \$3 million. The stock currently sells for \$33/share and there are 1,500,000 shares outstanding. The underwriters believe that the issue will be completely taken up if the subscription price is set at \$30 per share.

21. How many shares will have to be issued?
- A) 50,000
 - B) 100,000
 - C) 150,000
 - D) 200,000
 - E) None of the above.
22. Pretend your answer to the previous question was 75,000 shares (it shouldn't have been). What will be the ex-rights price?
- A) \$30
 - B) \$31.45
 - C) \$32.86
 - D) \$33
 - E) None of the above.

Please use the following information to answer the next TWO questions.

TVC Inc. would like to issue 15,000 new shares via a Dutch Auction. The company receives the bids in the table below.

Bidder	Quantity	Price
A	5,000 shares	\$43
B	9,000 shares	\$45
C	1,000 shares	\$44
D	2,000 shares	\$46
E	4,000 shares	\$41
F	2,000 shares	\$42

23. At what price will all of the shares be sold?
- A) \$41
 - B) \$42
 - C) \$43
 - D) \$44
 - E) \$46

24. What percentage of the quantity of shares demanded by each bidder will the bidders receive?
- A) 88.24%
 - B) 95.85%
 - C) 100%
 - D) 110.23%
 - E) None of the above.
25. During the _____, the underwriting group agrees not to sell securities for less than the offering price until the syndicate dissolves?
- A) Quiet Period
 - B) Lockup Period
 - C) Selling Period
 - D) Oversubscription Period
 - E) None of the above.
26. Two firms, X and Y, have each announced IPOs at \$100 per share. One of these is undervalued by \$10 and the other is overvalued by \$4, but you have no way of knowing which is which. You plan on buying 1,000 shares of each issue. If an issue is underpriced, it will be rationed, and only 40% of your order will be filled. What is your expected profit?
- A) -\$4,800
 - B) -\$2,400
 - C) \$0
 - D) \$2,400
 - E) \$4,800
27. ABC Inc. would like to issue an IPO. The underwriter, Right UW Inc., has given ABC the option of choosing between a firm commitment and regular underwriting. Under the firm commitment, Right UW would buy all 250,000 shares of ABC for \$80 per share. If ABC chooses regular underwriting, Right UW's fee will be \$5 per share. How much money would be raised for ABC under a firm commitment if the stock sells for \$65 on the open market and only 80% of the IPO is purchased?
- A) \$12 million
 - B) \$13 million
 - C) \$19 million
 - D) \$20 million
 - E) None of the above.

Please use the following information to answer the next TWO questions.

You have been given the following information regarding gold futures contracts.

Futures Contracts on Gold
100 troy ounces, US\$ per troy oz.

Month	Settlement Price per ounce
February 2014	900.00
April 2014	905.00
June 2014	911.00

28. Imagine that it is currently the middle of December 2013. You need to buy 300 ounces of gold four months from now for your successful tooth-making business. You are concerned that the price of gold may increase over the next four months. In order to hedge this risk, what should you do?
- A) Buy 3 April 2014 contracts.
 - B) Buy 4 February 2014 contracts.
 - C) Sell 3 April 2014 contracts.
 - D) Sell 4 June 2014 contracts.
 - E) None of the above.
29. Suppose that a friend of yours sold (took a short position in) five April 2014 contracts. If the price at expiration is \$950, what is your friend's payoff?
- A) -\$22,500
 - B) -\$19,500
 - C) \$22,500
 - D) \$25,000
 - E) None of the above.
30. A firm can hedge _____ exposure but cannot, in most cases, hedge _____ exposure.
- A) Economic; transaction
 - B) Transaction; economic
 - C) Economic; permanent
 - D) Long-run; short-run
 - E) None of the above.
31. Mountain Top Inc., mines iron ore. The company offsets its financial risk with futures contracts on copper (another mineral). The company is reducing its risk using the concept of:
- A) Commodity swapping
 - B) Cross-hedging
 - C) Option hedging
 - D) Marking-to-market
 - E) None of the above.
32. You purchased a call option for \$3.50. The call option has an exercise price of \$13.25. At expiry, the stock price is \$21.45. What is your profit/loss? (Note: the option is for 100 shares)
- A) -\$350
 - B) \$820
 - C) \$120
 - D) \$470
 - E) \$1675

Please use the following information to answer the next TWO questions.

A call option on a share of XYZ Corp has a strike price of \$8.00 and is trading for \$0.75, while the corresponding put is trading for \$1.50.

33. You purchased 2 call options and sold 1 put option. If the stock price at maturity is \$8.00, what is your total profit? (Note: each option is for 100 shares)
- A) -\$300
 - B) -\$150
 - C) \$0
 - D) \$150
 - E) \$300
34. The call option is out of the money when:
- A) The stock price is greater than \$8.00.
 - B) The stock price is \$8.00.
 - C) The stock price is less than \$8.00.
 - D) The stock price is greater than \$9.00
 - E) None of the above.
35. An increase in the strike price _____ the value of a call option and _____ the value of a put option.
- A) Increases; increases
 - B) Decreases; decreases
 - C) Increases; decreases
 - D) Decreases; increases
 - E) None of the above.
36. In class, I mentioned that a call option is similar to a(n) _____ and a put option is similar to a(n) _____.
- A) Insurance policy; raincheck
 - B) Raincheck; insurance policy
 - C) Warrant; right
 - D) Right; warrant
 - E) None of the above.
37. A \$1,000 face value, 7% convertible bond pays interest semi-annually and has a maturity date of five years. The conversion price is \$40. The yield to maturity on nonconvertible bonds of comparable quality is 8%. The market price of the common stock is currently \$38.50. What is the minimum price at which this convertible bond should sell?
- A) \$959.45
 - B) \$962.50
 - C) \$1,243.32
 - D) \$1,540
 - E) None of the above.

38. A \$1,000 face value, 6% bond pays interest semi-annually and matures in 15 years. This bond comes with 12 warrants attached. The yield to maturity on warrant-less bonds of comparable quality is 8%. The bond is currently trading at \$987.20. What is the value of one warrant?
- A) \$8.20
 - B) \$13.34
 - C) \$98.38
 - D) \$160.12
 - E) None of the above.
39. _____ acquisitions are those where the two firms are at different stages in the production process, _____ acquisitions are those where both firms are in the same industry, and _____ acquisitions are those where the two firms are unrelated.
- A) Conglomerate, horizontal, vertical
 - B) Horizontal, vertical, consolidation
 - C) Consolidation, vertical, horizontal
 - D) Vertical, horizontal, conglomerate
 - E) Vertical, conglomerate, horizontal

Please use the following information to answer the next TWO problems.

The shareholders of Fantastic Frames Inc. (FFI) have voted in favour of a buyout offer from the Heavenly Home Décor (HHD). FFI's shareholders will receive one share of HHD stock for every two shares they hold in FFI. Information about each firm is given here:

	FFI	HHD
Share Price	\$32	\$80
Shares Outstanding	150,000	480,000
Earnings	500,000	1,200,000

40. What will be the price per share of the combined firm assuming the market is fooled by the growth in EPS? (Hint: Assume P/E ratio of HHD stays constant)
- A) \$64
 - B) \$80
 - C) \$87.77
 - D) \$97.92
 - E) None of the above.
41. What will be the new P/E ratio of the combined firm if the NPV of the acquisition is zero and the market knows it?
- A) 26.14
 - B) 32
 - C) 35.98
 - D) 37.14
 - E) None of the above.

42. Which of the following strategies could be used to ward off an unwanted takeover attempt?

- I Poison Pill
 - II Golden Parachute
 - III Shareholder Rights Plan
 - IV Leveraged Buyout
- A) I and II only
B) II and IV only
C) I, II, and III only
D) I, II, and IV only
E) All of the above can be effective strategies to deter hostile takeover attempts.

Please use the following information to answer the next TWO problems.

Company ABC and XYZ are 100% equity-financed. Company ABC can acquire firm XYZ for \$1.5 million in the form of either cash or stock. The synergy value of the deal is \$150,000 in total. You have been provided with the following information:

	ABC	XYZ
Market Price per share	\$125	\$50
Shares Outstanding	50,000	25,000
Earnings	250,000	600,000

43. What is the value of the combined firm if ABC acquires XYZ by cash?

- A) \$6,000,000
B) \$6,150,000
C) \$6,250,000
D) \$7,650,000
E) None of the above.

44. What will be the price per share of the combined firm if ABC acquires XYZ by stock?

- A) \$87.50
B) \$100
C) \$115.16
D) \$123.39
E) None of the above.

45. In the CEO Pay video shown in class (or watched at home), which of the following arguments was/were mentioned in favour of the large severance packages given to Canadian CEOs?

- I. The magnitude of the package value relative to the value of the firm can be small.
 - II. Large severance packages are used to recruit good talent.
 - III. They can deter takeover attempts.
- A) I only
B) II only
C) III only
D) I and II only
E) I and III only

Please use the following information to answer the next TWO questions.

Firm B is going to acquire Firm T. The acquisition will be done via a share exchange, whereby Firm B will exchange two of its shares for every one of Firm T's shares. Synergy is \$260,000 in total.

	Firm B (Bidder)	Firm T (Target)
Shares Outstanding	80,000	24,000
Price per Share	\$15	\$25
Earnings	100,000	60,000

46. What is the takeover premium? (Hint: how much is Firm B paying over Firm T's current worth?)
- A) \$88,320
 - B) \$172,320
 - C) \$240,000
 - D) \$260,000
 - E) None of the above.
47. For the NPV of the transaction to be equal to zero, how many shares would Firm B have to give to Firm T?
- A) 11,488
 - B) 40,000
 - C) 48,000
 - D) 57,333
 - E) None of the above.
48. In order to ensure that CEOs act in shareholders' best interest, a company should:
- I. Tie CEO compensation to shareholder value.
 - II. Be able to replace CEOs who do a poor job.
 - III. Give their CEO tenure so that he or she cannot be fired.
- A) I only
 - B) II only
 - C) I and II only
 - D) II and III only
 - E) I, II, and III
49. Stock options are frequently part of a CEO's compensation package. As discussed in class, which of the following is/are reasons that firms use stock options?
- I. They can align interests of the CEO with shareholders.
 - II. They dilute shareholder value.
 - III. Unlike cash compensation, stock options involve no immediate cash outflows.
- A) III only
 - B) I and III only
 - C) II and III only
 - D) I and II only
 - E) II only

50. Suppose that you are extremely against investing in companies that manufacture weapons. You instead decide to invest your money in companies that produce and sell steel and aluminum to other companies. You pat yourself on the back for having made a wonderful and purely ethical investment. What is the potential problem with this scenario?

- A) There is no problem with this scenario – you completely avoided investing in something you do not agree with.
- B) The aluminum/steel firms may derive a significant portion of their revenues from gun (and other weapons) producers.
- C) In the corrupt business world, it is impossible to earn a positive return when investing ethically.
- D) Both B and C.
- E) None of the above.

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