École de gestion TELFER School of Management

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# OLD/PRACTICE Final Exam

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**ADM 335 M&N**
**Corporate Finance**

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**Time: Three hours**

**NAME: _____**

**STUDENT NUMBER: _____**

**SIGNATURE: _____**

**GENERAL INSTRUCTIONS:** Hand in everything at the end of the exam period. **Use the space provided in the exam for your answers and relevant work; do not re-write the question in the solution space; identify the solutions clearly.** Always keep three decimals for all calculated results. No books or notes permitted. The use of calculators is permitted.

| | | |
|---|---|---|
| PART I | Problems | 50 |
| PART II | MCQ | 50 |
| | TOTAL | 100 |

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**Statement to be signed by the student:**
I have read the text on academic integrity and I pledge not to have committed or attempted to commit academic fraud in this examination.

Signed:_____

Note: an examination copy or booklet without that signed statement will not be graded and will receive a final exam grade of zero.

**PART I (45 points total)**

*Instructions:* **Do problem 1 (mandatory) and pick one problem the following five and solve only that problem (total 2 problems: one mandatory and one a choice among five)**

**PROBLEM 1 (mandatory) (25 points) MERGERS & ACQUISITIONS**

As the financial manager of Global Toys, Inc., you are examining the possible acquisition of a smaller toy company called Games for All. You have the following basic financial information about both companies:

| | **Global Toys** | **Games for All** |
|---|---|---|
| Price-earnings ratio | 15 | 12 |
| Number of shares | 1,000,000 | 250,000 |
| Earnings | $1,000,000 | $750,000 |

You also know that investors and analysts expect the earnings and dividends (currently $1.80 per share) of Games for All to grow at a constant rate of 5% each year. However, your research indicates that the acquisition should provide Games for All with some economies of scale which would raise this growth rate to 7% per year.

A) What is the value of Games for All to Global Toys? **(8 points)**
B) If Global Toys offers $40 in cash for each outstanding share of Games for All, what would the NPV of the acquisition be? **(4 points)**
C) If instead Global Toys offers 600,000 of its shares in exchange for the outstanding stock of Games for All, what would the NPV of this acquisition be? **(8 points)**
D) Interpret your results in B) and C) above and make your recommendation with regard to how the acquisition should be made (cash or stock)? **(5 points)**

**Answer:**

**<u>PROBLEM 2 (optional)</u> (25 points) CAPITAL STRUCTURE: Limits to the use of debt**

Big Star Company is a regional chain department store. It will remain in business for one more year. The probability of a boom year is 60% and of a recession is 40%. It is projected that Big Star will generate a total cash flow of $250 million in a boom year and $100 million in a recession. The firm's required debt payment at the end of the year is $150 million. The market value of Big Star's outstanding debt is $108.93 million. Assume a one-period model, risk neutrality and an annual discount rate of 12% for both the firm's debt and its equity. Big Star pays no taxes.

a) What is the value of the firm's equity? **(4 points)**
b) What is the promised return on Good Time's debt? **(4 points)**
c) What is the value of the firm?**(4 points)**
d) How much would Good Time's debt be worth if there were no bankruptcy costs? **(4 points)**
e) What payoff, after bankruptcy costs, do bondholders expect to receive in the event of a recession? **(4 points)**
f) What cost do bondholders expect Good Time to incur should bankruptcy arise at the end of the year? **(5 points)**

**Answer**

**<u>PROBLEM 3</u> (optional) (25 points) OPTIONS AND CORPORATE FINANCE**

Maverick Manufacturing Inc. must purchase gold in three months to use in its operations. Maverick's management has estimated that if the price of gold were to rise above $375 per ounce, the firm would go bankrupt. The current price of gold is $350 per ounce. The firm's CFO believes that the price of gold will either rise to $400 per ounce or fall to $325 per ounce over the next three months. Management wishes to eliminate any risk of the firm going bankrupt. Maverick can borrow and lend at the risk-free interest rate of 16.99% per annum (effective annual yield).

a) Would Maverick be interested in buying a call option or a put option on the price of gold? In order to avoid bankruptcy, what strike price and time to expiration would the firm like this option to have? **(7 points)**

b) How much should such an option sell for in the open market? **(7 points)**

c) If no options currently trade on gold, is there a way for Maverick to create a synthetic option with identical payoffs to the option described above? If there is, how would the firm do it? **(5 points)**

d) How much does the synthetic option cost? Is this greater than, less than, or equal to what the actual option costs? Does this make sense? **(6 points)**

**PROBLEM 5 (optional)** **(25 points)** **LEASING**

An asset costs $86.87. The CCA rate for this asset is 20%. The asset's useful life is 3 years. It will have no salvage value. The corporate tax rate is on ordinary income is 40%. The interest rate on risk-free cash flows is 5%. Assume the asset pool is not terminated at the end of the project.

**A.** What set of lease payments will make the lessee and the lessor equally well off? **(10 points)**

**B.** Show the general condition that will make the value of a lease to the lessor the negative of the value to the lessee. **(8 points)**

**C.** Assume that the lessee pays no taxes and the lessor is in the 40% tax bracket. For what range of lease payments does the lease have a positive NPV for both parties? **(7 points)**

**Answer**

**PART II Multiple Choice Questions Total: 50 points**

*Answer on the machine readable sheet attached (each correct answer worth one point)*

1. According to the static theory of capital structure, _____.

A) a firm's choice of assets and operations is fixed for all time
B) a firm will borrow up to the point where the benefit from an extra dollar of debt is just equal to the tax benefit associated with that debt
C) the value of the firm will differ from the M&M value without taxes by the gain from leverage
D) the optimal WACC is the same as it is in M&M with taxes
E) the value of the firm in M&M with taxes is overstated by the amount of financial distress costs

2. When the value of a firm's assets exactly equals the value of its debt, the firm:

A) Is economically bankrupt.
B) Is technically insolvent.
C) Is legally bankrupt.
D) Is in liquidation.
E) Is in default.

3. When shareholders pursue selfish strategies such as taking large risks or paying excessive dividends, these will result in:

A) no action by debtholders since these are equity holder concerns.
B) positive agency costs, as bondholders impose various restrictions and covenants, which will diminish firm value.
C) investments of the same risk class that the firm is in.
D) undertaking scale enhancing projects.
E) lower agency costs, as shareholders have more control over the firm's assets.

4. Which of the following defensive tactics to resist a merger involve a firm's repurchase of its own shares?

A) Poison pill
B) Golden parachutes
C) Exclusionary self-tender
D) Standstill agreement
E) c and d

5. When graphing firm value against debt levels, the debt level that maximizes the value of the firm is the level where:

A) the increase in the present value of distress costs from an additional dollar of debt is greater than the increase in the present value of the debt tax shield.
B) the increase in the present value of distress costs from an additional dollar of debt is equal to the increase in the present value of the debt tax shield.
C) the increase in the present value of distress costs from an additional dollar of debt is less than the increase of the present value of the debt tax shield.
D) distress costs as well as debt tax shields are zero.
E) distress costs as well as debt tax shields are maximized.

6. Inclusion of bond covenants in the bond contract leads to

A) higher agency costs
B) higher bankruptcy costs
C) higher interest costs
D) none the above

7. The increase in the stock price after a dividend increase is called the information content effect because:
A) the change in dividend was expected by shareholders.
B) the dividend increase signaled investors to adjust the expectations of future earning upward.
C) the dividend change signaled investors to adjust the risk of the firm downward.
D) the dividend change signaled shareholders that the firm could now payout more as they enter the mature phase of their business.
E) none of the above.

8. What are some of the possible consequences of financial distress?
A) Debtholders, who face the prospect of getting only part of their money back, are likely to want the company to take additional risks.
B) Debtholders would like equity holders to put up more money, even if it is invested in zero-NPV projects.
C) Equity investors would like the company to cut its dividend payments to conserve cash
D) Equity investors would like the firm to shift toward less risky lines of business

9. Lucky Mike's, Inc. has a target debt/equity ratio of 0.75. After-tax earnings for 2003 were $850,000 and the firm needs $1,150,000 for new investments. If the company follows a residual dividend policy, what dividend will be paid?
A) 0
B) 67,240
C) $192,857
D) $213,164
E) $337,500

10. The acquisition of stock has the advantage of:
A) no shareholder meeting to vote is necessary.
B) minority shareholders may exist.
C) opening the bidding to others.
D) all of the above.
E) none of the above.

11. Which of the following factors influence the choice between merger and an acquisition of stock?
A) Shareholders are dealt with directly to bypass target management and board of directors.
B) In a tender offer, usually some minority shareholders do not tender stopping complete firm absorption.
C) Target management may be unfriendly and resist an offer. Resistance usually make the stock price higher.
D) all of the above.
E) none of the above.

12. Which of the following are features of the purchase method of accounting?
I. The balance sheets of the acquirer and the acquired are just added together.
II. Since the new firm is jointly owned by the shareholders of the old firms, no goodwill exists.
III. The assets of the target firm must be shown at their fair market value on the books of the bidder.
IV. The difference between the purchase price and the estimated fair market value of the net assets of the target firm must be classified as goodwill and recorded on the balance sheet.
A) I and II only
B) II and IV only
C) III and IV only
D) II and III only
E) I and IV only

Use the following to answer questions 13-22:

Both firms are 100% equity-financed. Firm A can acquire firm B for $82,500 in the form of either cash or stock. The synergy value of the deal is $12,500.

| | Firm A | Firm B |
|---|---|---|
| Number of Shares | 10,000 | 7,500 |
| Price per Share | $25.00 | $10.00 |

13. What is the merger premium over firm B's stock price?
A) 8.50%
B) 9.25%
C) 10.00%
D) 10.25%
E) 11.50%

14. What is the value of firm B to firm A?
A) $12,500
B) $57,500
C) $75,000
D) $87,500
E) $125,000

15. What is the NPV of the acquisition if cash is used?
A) $2,500
B) $5,000
C) $7,500
D) $10,000
E) None of the above.

16. What is the value of the post-merger firm following a cash acquisition?
A) $255,000
B) $262,500
C) $337,500
D) $650,000
E) $672,525

17. What is the price per share of the post-merger firm following a cash acquisition?
A) $25.38
B) $25.50
C) $25.62
D) $25.76
E) $27.30

18. What is the value of the new firm if firm B's stockholders are paid in stock?
A) $255,000
B) $262,500
C) $337,500
D) $650,000
E) $672,525

19. How many shares will be given to firm B's stockholders in the stock-financed deal?
A) 3,000
B) 3,300
C) 3,667
D) 4,250
E) 5,762

20. What will the price per share be of the post-merger firm if payment is made in stock?
A) $25.00
B) $25.38
C) $25.50
D) $25.76
E) $27.30

21. What is the cost of acquisition when stock financing is used?
A) $75,126
B) $80,000
C) $81,555
D) $82,500
E) $83,754

22. What is the NPV of acquiring firm B when stock financing is used?
A) $3,746
B) $3,925
C) $4,122
D) $5,000
E) $5,510

23. A financial lease is likely to be most beneficial to both parties when:
A) the lessor's tax rate is lower than the lessee's.
B) the lessor's tax rate is higher than the lessee's.
C) the lessor's tax rate is equal to the lessee's.
D) a financial lease cannot be beneficial to both parties.
E) a financial lease always has zero NPV, so both parties always break even.

24. The price or lease payment that the lessee sets as their bound is known as:
A) the present value of the tax shields.
B) the reservation payment, $L_{MIN}$.
C) the present value of operating savings.
D) the reservation payment, $L_{MAX}$.
E) none of the above.

25. Prior to CICA 3065, "Accounting for Leases", lease activity was only reported in financial footnotes. This off-balance-sheet-financing made firms with
A) operating leases appear healthier than those with no leases.
B) financial leases appear to have greater liabilities than firms using operating leases.
C) operating leases appear to have greater liabilities than firms using financial lease.
D) financial leases appear to be financially stronger than if the leases were on-balance-sheet-financing.
E) all of the above.

26. For accounting purposes, which of the following conditions would not automatically cause a lease to be a financial lease?
A) The lessee can purchase the asset for its fair market value at the end of the lease.
B) The lease transfers ownership of the asset to the lessee by the end of the lease.
C) The lease term is more than 75% of the asset's economic life.
D) The PV of the lease payments is more than 90% of the asset's market value at lease inception.
E) All of the above would lead to the lease being considered a financial lease.

27. Which of the following is probably not a good reason for leasing instead of buying?
A) Leasing may provide off-balance sheet financing.
B) Leasing may reduce transactions costs.
C) Leasing may provide a beneficial reduction of uncertainty.
D) All of the above are good reasons.
E) All of the above are not good reasons.

28. Which of the following is probably a good reason for leasing instead of buying?
A) Leasing provides 100% financing.
B) Leasing preserves capital.
C) Leasing may increase EPS relative to buying.
D) All of the above are good reasons.
E) None of the above is a good reason.

29. Given realistic estimates of the probability and cost of bankruptcy, the future costs of a possible bankruptcy are borne by:
A) by all investors in the firm.
B) debtholders only because if default occurs interest and principal payments are not made.
C) equityholders because debtholders will pay less providing less cash for the equityholders.
D) management because if the firm defaults they will lose their jobs.
E) none of the above.

30. _____ it is impossible for a tax-free acquisition to take place.
A) If an acquisition is for business purposes
B) If the purchasing firm exchanges its own stock for the selling firm's equity
C) If an acquisition is being undertaken with the express purpose of avoiding taxes
D) If the stockholders in the target firm will retain an equity interest in the bidder
E) If the selling shareholders will be considered to have exchanged their old shares for new ones of equal value

31. Generally speaking, if an acquiring firm offers the target firm cash for its stock, it will be a _____ acquisition; if the acquirer offers its own shares in return for the target firm's stock, it will be a _____ acquisition.
    A) taxable; taxable
    B) taxable; tax-free
    C) tax-free; taxable
    D) tax-free; tax-free
    E) none of the above

32. All of the following are possible cash flow benefits from mergers and acquisitions EXCEPT:
    A) Revenue enhancement.
    B) Cost reductions.
    C) Lower taxes.
    D) Marketing gains.
    E) Diversification benefits.

33. Which of the following types of acquisitions is (are) least likely to result in synergistic increases in value?
    I. Horizontal acquisitions
    II. Vertical acquisitions
    III. Conglomerate acquisitions
    A) I only
    B) I and II only
    C) I and III only
    D) II and III only
    E) III only

34. In general, a leveraged buyout:
    A) Is limited to smaller, non-public firms.
    B) Is used to take a private firm public.
    C) Is used by current managers or financiers to take a firm private.
    D) Involves the sale of equity securities to pay off outstanding debt.
    E) Significantly lowers the leverage of the firm.

35. A successful merger requires that the:
    A) P/E ratio maintains its pre-merger value.
    B) Debt-equity ratio of the firm remains at its pre-merger level.
    C) Book value per share must remain constant.
    D) Book value per share must increase.
    E) Value of the whole exceeds the value of the sum of the parts.

36. The value of firm B to firm A is equal to the value of:
    A) Firm B as a stand-alone firm plus the synergy value.
    B) The incremental benefit of the merger or acquisition.
    C) The incremental cash flows from the merger or acquisition.
    D) The incremental cash flows minus the value of firm B as a stand-alone firm.
    E) The firm AB plus the incremental gain.

Use the following to answer questions 37-44:

Alex, Inc. is financed 100% with equity. The firm has 100,000 shares of stock outstanding with a market price of $5 per share. Total earnings for the most recent year are $50,000. The firm has cash of $25,000 in excess of what is necessary to fund its positive NPV projects. The firm is considering using the cash to pay an extra dividend of $25,000 or, alternatively, to repurchase $25,000 of stock. The firm has other assets worth $475,000 (market value). For each of the questions that follow, assume there are no transaction costs, taxes, or other market imperfections.

37. Assume the firm pays the $25,000 excess cash in the form of a cash dividend. What will be the firm's earnings per share once the dividend is paid?
    A) $0.25
    B) $0.39
    C) $0.45
    D) $0.50
    E) $0.53

38. Assume the firm pays the $25,000 excess cash in the form of a cash dividend. What will be the firm's price/earnings ratio once the dividend is paid?
    A) 9.00
    B) 9.25
    C) 9.50
    D) 9.75
    E) 10.00

39. Assume the firm pays the $25,000 excess cash in the form of a cash dividend. What will be the market price per share of Alex's stock once the dividend is paid?
    A) $4.50
    B) $4.75
    C) $5.00
    D) $5.25
    E) $5.50

40. Assume the firm pays the $25,000 excess cash in the form of a cash dividend. You own 1,000 shares and this comprises your total wealth. Once the dividend is paid, what is your total wealth?
    A) $4,500
    B) $4,750
    C) $5,000
    D) $5,250
    E) $5,500

41. Assume the firm uses the $25,000 excess cash to buy back stock at $5 per share. What will be the firm's earnings per share after the repurchase?
    A) $0.25
    B) $0.39
    C) $0.45
    D) $0.50
    E) $0.53

42. Assume the firm uses the $25,000 excess cash to buy back stock at $5 per share. What will be the firm's price/earnings ratio after the repurchase?
    A) 9.00
    B) 9.25
    C) 9.50
    D) 9.75
    E) 10.00

43. Assume the firm uses the $25,000 excess cash to buy back stock at $5 per share. What will be the market price per share of Alex's stock after the repurchase?
    A) $4.50
    B) $4.75
    C) $5.00
    D) $5.25
    E) $5.50

44. Assume the firm uses the $25,000 excess cash to buy back stock at $5 per share. You own 1,000 shares before the repurchase and this comprises your total wealth. If you sold none of your shares back to the firm, what is your total wealth after the repurchase is completed?
A) $4,500
B) $4,750
C) $5,000
D) $5,250
E) $5,500

45. The payoff diagram for a put with the same exercise price and premium as the call on the same underlying asset with the same maturity is:
A) the inverse of the call diagram along the put price.
B) unrelated to the call diagram no matter what the exercise price.
C) the mirror image of the call diagram around the exercise price.
D) exactly the same as the call diagram for the given exercise price.
E) None of the above.

46. A forward contract is an agreement between two parties for a sale:
A) Of goods delivered today and the price determined in the future.
B) Of an unspecified quantity in the future at a price set today.
C) At some future date with both the quantity and the price determined on that future date.
D) At some future date with the quantity determined today and the price determined in the future.
E) At some future date with both the quantity and price determined today.

47. Investing in combinations of options may result in:
A) no difference in payoff patterns.
B) a mirror image of past results.
C) offsetting positions resulting in a riskless return.
D) a and b.
E) b and c.

48. In which of the following does money NOT change hands when the contract is created?
I. Futures contracts
II. Options contracts
III. Forward contracts
A) I only
B) II only
C) III only
D) I and II only
E) I and III only

49. Which of the following arrangements is a zero sum game?
I. Futures contracts
II. Options contracts
III. Forward contracts
A) I only
B) II only
C) I and II only
D) III only
E) I, II, and III

50. Which one of the following conditions when combined with long-term, fixed-rate, low interest loans would tend to increase the financial risk of lending institutions the most?

A) Volatile short-term rates that are relatively low
B) Volatile short-term rates that are relatively high
C) Fixed short-term rates that are relatively low
D) Volatile long-term rates that are relatively low
E) Fixed long-term rates that are relatively low

## Final Exam Formula Sheet (ADM 3350)

1. $R_E = D_1 / P_0 + g$
2. $R_E = R_f + \beta_E \times \left[ R_M - R_f \right]$
3. $WACC = \left( E/V \right) \times R_E + \left( D/V \right) \times R_D \times \left( 1 - T_C \right)$
4. $V_u = EBIT / R_E^u = V_L = E_L + D_L$
5. $R_E = R_A + \left( R_A - R_D \right) \times \left( D/E \right)$
6. $V_L = V_U + T_C \times D$
7. $V_U = EBIT \times \left( 1 - T_C \right) / \rho$ and $V_L = \dfrac{EBIT \times \left( 1 - T_C \right)}{WACC}$
8. $R_E = \rho + \left( \rho - R_D \right) \times \left( D/E \right) \times \left( 1 - T_C \right)$
9. P/E ratio = Price per share / Earnings per share
10. Dividend payout ratio = Dividends / Net income
11. $NPV_{Lea\sin g} = I - \left\{ \begin{array}{l} \left[ \left[ \sum_{t=1}^{n} \dfrac{L_t \times (1-T)}{(1+k)^t} \right] + \left[ \dfrac{I \times d \times T}{k+d} \right] \left[ \dfrac{1+0.5k}{1+k} \right] - \left[ \dfrac{1}{(1+k)^n} \right] \left[ \dfrac{SV \times d \times T}{k+d} \right] \right] \\ + \sum_{t=1}^{n} \dfrac{SV}{(1+k)^n} \end{array} \right\}$
12. $V_{AB} > V_A + V_B$
13. $\Delta V = V_{AB} - (V_A + V_B)$
14. $V_B^* = V_B + \Delta V$
15. $NPV = V_B^* -$ Cost to Firm A of the acquisition
16. $NPV = -\left[ PQ + v(Q' - Q) \right] + \dfrac{\left[ (P - v)(Q' - Q) \right]}{R}$
17. *APR = periodic rate* 365/(net period – discount period)*
18. *EAR = (1 + (periodic rate) <u>to the power</u> [(365/(net period-discount period)]- 1*
19. *PV* of an Annuity = $\mathrm{PV(A,r,n)} = \mathrm{A} \left[ \dfrac{1 - \dfrac{1}{(1+\mathrm{r})^{\mathrm{n}}}}{\mathrm{r}} \right]$