Print Last Name: ➔	Print First Name: ➔	ID Number: ➔	
COURSE FINANCE	**NUMBER** COMM 308	**SECTIONS: (➔ Circle your section)** CC, DD, F, G, H, I	
EXAMINATION Final Exam **VERSION BLUE**	**DATE** June 23, 2011	**TIME** 3 hours 19:00 to 22:00	**# OF PAGES 18** including cover
INSTRUCTOR: **(➔ Underline your instructor's name)** David Newton Jay Mannadiar		**DIVISION** John Molson School of Business Concordia University	

READ THESE SPECIAL INSTRUCTIONS CAREFULLY

- **You must submit a BLUE computer answer sheet.**

- **For Multiple Choice Questions,**
  All answers must be recorded IN PENCIL on the computer sheet.
- **For Problems:**
  All answers must be recorded IN INK within this exam.
  Show your calculations to earn part marks. Write in the space provided.
- **If you are using the back of the exam for answering any question, you should label it clearly**

- **Please ensure you have 18 pages (including the cover page) in this exam.**

- **Fill in your name and other required information IN PENCIL on the Computer Answer sheet as well as IN INK on this cover sheet.**

- **Blank questions or those with multiple answers will not receive credit.**

SCORES (FOR INTERNAL USE ONLY)

Part I Multiple Choice Questions	Part II Long Answer Questions				
	Question 1	Question 2	Question 3	Question 4	
(Max: 70 Points)	(Max: 10 Points)	(Max: 9 Points)	(Max: 5 Points)	(Max: 6 Points)	**Total**

Part I: Multiple Choice Questions (28 Questions, 70 Points Total):

- This part consists of 28 Multiple Choice Questions.
- Each question counts 2.5 points for a total of 70 points.
  - **Only answers on the computer answer sheet will be graded.**
  - **Use a pencil to mark your answers on the Computer Sheet.**

1. A _____ can lose, at most, what she has already invested in a firm.

   I. common stockholder
   II. limited partner
   III. general partner
   IV. sole proprietor

   A) I only
   B) I and II only
   C) I, II, and IV only
   D) II, III, and IV only
   E) II and III only

2. On January 1, 2011, the Simpsons Inc. had the following UCC balances:
   - Class 43, CCA rate = 30%, UCC = $25,000
   - Class 8, CCA rate = 20%, UCC = $10,000

   During 2011, Simpsons neither bought nor sold any assets. The total CCA that Simpsons can claim in 2011 is:

   A) $4,750
   B) $7,000
   C) $9,500
   D) $10,500
   E) $45,000

   $0.3 \times 25,000 + 0.2 \times 10,000 = \$9,500$

3. John Doe Enterprises borrowed $149,500 for two years from the bank. At the end of the two years, they repaid the loan with one payment of $176,590. What was the quoted interest rate on the loan? Assume the interest rate is quoted as APR compounded semi-annually.

   A) 4.25%
   B) 8.36%
   C) 8.50%
   D) 8.68%
   E) 18.12%

   $2\,year \text{ interest } = \frac{176,590 - 149,500}{149,500} = 18.1204\%$

   $effective\ 6\ month\ rate = (1 + 0.181204)^{\frac{1}{4}} - 1 = 4.25124\%$

   $\therefore Quoted\ rate = 2 \times 4.25124 = 8.50 APR\ comp.\ semi - annually$

4. Jane Doe Inc. invested $735,000 at an 11.25% rate of return (effective annual). The company sold their investment for $1,067,425. How much longer would Lakeside have had to wait if they had wanted to sell their investment for $1.25 million?

A) .98 year
B) 1.48 years
C) 1.98 years
D) 2.31 years
E) 3.50 years

$$(1+0.1125)^n \times 1,067,425 = 1,250,000$$

$$n = \ln\left(\frac{1.25}{1.067425}\right) \Big/ \ln(1.1125) = 1.48 years$$

5. John invests $25,000 per year, for 40 years at an interest rate of 7%. He will make his first payment of $25,000 in one year and he expects his subsequent annual contributions to increase by 7% per year. What is the value of the investment at the end of the 40 years?

A) $934,579.44
B) $1,000,000.00
C) $4,990,877.80
D) $13,994,820.41
E) $33,550,627.47

$$PV_1 = 25,000 \times 40$$

$$\therefore FV_{40} = 25,000 \times 40 \times 1.07^{39} = \$13,994,820.41$$

6. Ignoring taxes, if a firm issues debt at par, then:
   I. The cost of debt is equal to its coupon rate.
   II. The cost of debt is equal to its yield to maturity
   III. The cost of debt is equal to its current yield.

A) I only
B) II only
C) III only
D) I and II only
E) I, II, and III

7. Tom and Antonio both want to open savings accounts today. Tom wants to have $1,000 in his savings account six years from now. Antonio wants to have $1,000 in his savings account three years from now. Which of the following statements is(are) correct assuming that both Antonio and Tom earn the same rate of interest? (*Note: Assume that the interest rate is greater than zero*)
   I. Tom needs to deposit more money into his account today than does Antonio.
   II. Tom will need to deposit twice the amount of money today as Antonio.
   III. Antonio needs to deposit more money into his account today than does Tom.
   IV. Antonio needs to deposit twice the amount of money today as Tom.

A) I only
B) III only
C) I and II only
D) III and IV only
E) None of the above

8. The Hold'm Company offers a perpetuity of $50,000 per year with the first payment on January 1, 2012. If the interest rate in the market remains constant over time, the price you are willing to pay for this perpetuity _____ over time.

A) increases
B) decreases
C) stays the same
D) either increases or decreases, depending on the interest rate
E) either increases or decreases, or remains the same, depending on the interest rate

9. The RobM Bank currently offers a savings account with an annual interest rate of 8% compounded semi-annually. RobM wants to offer customers another account with interest compounded monthly. If RobM wants the effective rates to be equal, what annual interest rate should RobM quote for the second account?

A) 7.87%
B) 8.00%
C) 8.16%
D) 24.00%
E) None of the above

$$\left(\left(1+0.04\right)^{\frac{1}{6}}-1\right)\times 12 = 7.87\%$$

10. Which of the following is not accurate regarding financial leverage

A) Whenever a firm's debt increases faster than its equity, financial leverage increases
B) Leverage is most beneficial when EBIT is relatively high
C) Increasing financial leverage will always increase the EPS for stockholders
D) The level of financial leverage that produces the highest firm value is the one most beneficial to stockholders.
E) Firms in lower tax brackets will tend to benefit less from increases in financial leverage.

11. A company is considering two separate, mutually exclusive projects A and B. Project A requires an initial investment of $100,000 and is expected to generate after-tax cash flows of $15,000 per year forever. Project B requires an initial investment of $150,000 and is expected to generate after-tax cash flows of $18,000 per year forever. The appropriate discount rate is 10 percent. What is the crossover rate for projects A and B?

A) 5.00%
B) 6.00%
C) 9.00%
D) 10.00%
E) None of the above.

Crossover rate = rate at which NPV of two projects are equal.

$$\frac{15,000}{k}-100,000 = \frac{18,000}{k}-150,000$$

$$k = 6\%$$

12. Jamie owes $21,750 at a 5% APR compounded monthly. The minimum amount that she must pay monthly is $230.69. How much sooner can she pay off this loan if she makes monthly payments of $300.00?

A) 1.68 years sooner
B) 2.54 years sooner
C) 2.79 years sooner
D) 2.93 years sooner
E) None of the above

$$k = 0.05/12 = 0.0041667$$

$$\frac{230.69}{k}\times\left(1-\frac{1}{(1+k)^{n1}}\right)=21,750 \text{ and } \frac{300}{k}\times\left(1-\frac{1}{(1+k)^{n2}}\right)=21,750$$

$$\therefore n1=\frac{\ln(230.69)-\ln(230.69-21,750\times k)}{\ln(1+k)}$$

$$and: n2=\frac{\ln(300)-\ln(300-21,750\times k)}{\ln(1+k)}$$

$$\therefore n1-n2=33.50464 \text{ months} = 2.79 \text{ years}$$

13. Liddy Products, Inc. just issued 10-year, 8% coupon bonds at par. Outstanding Limbaugh Corp. bonds, which have a maturity of 10 years, sell at a premium and are viewed by investors as having the same risk as the Liddy bonds. Therefore, it must be true that:

A) The coupon rate on the Limbaugh bonds is equal to that on the Liddy bonds.
B) The coupon rate on the Limbaugh bonds is higher than that on the Liddy bonds.
C) The coupon payment on the Limbaugh bonds is lower than that on the Liddy bonds.
D) The yield on Limbaugh bonds is higher than the yield on Liddy bonds.
E) The Limbaugh bonds pay coupons more often than twice a year.

14. It is now October 25, 2011, Jenny has just purchased a ten-year 4.5 percent Canadian government bond quoted at 96.894. The last semi-annual coupon payment was made on June 30, 2011. How much will Jenny actually pay for this bond? Assume the face value of the bond is $1000.

A) $954.52
B) $968.94
C) $976.15
D) $983.36
E) None of the above

$$Number\ of\ days \text{ since } last\ payment = 31+31+30+25=117$$

$$Cash \text{ Price} = \$968.94+\left(1000\times 4.5\%\times\frac{117}{365}\right)=\$983.36$$

15. Big Hat inc just paid a dividend of $1.30. Big Hat stocks are currently selling for $98.13. You believe that the required return on Big Hat stock is 12% and that the expected dividend growth rate is 10%, which is expected to remain constant for the foreseeable future. Is the stock currently overvalued, undervalued, or fairly priced?

A) Overvalued
B) Undervalued
C) Fairly priced
D) Cannot tell without knowledge of stock beta.
E) Cannot tell without knowledge of market beta.

$$\text{Price}=\frac{D_1}{k}=\frac{1.30\times 1.1}{0.12}=\$11.92$$

16. The return on stock A has a covariance of 0.1 with the return on the market portfolio whereas the return on stock B has covariance of 0.3 with the market return. The return on which stock moves more closely with the return on the market portfolio?

A) Stock A
B) Stock B

$$correlation = \frac{Cov_{A,B}}{\sigma_A \sigma_B}$$

C) Insufficient information: we would also need the variance of the market.
D) Insufficient information: we would also need the standard deviation of both A and B.
E) Insufficient information: we would need the covariance between A and B

17. Which bond's price would be the least sensitive to an unexpected change in the interest rate?

A) A discount (or zero coupon) bond with 12 years to maturity
B) A discount (or zero coupon) bond with 8 years to maturity
C) A bond with 10% coupon rate and 8 years to maturity
D) A bond with 5% coupon rate and 8 years to maturity
E) A bond with 5% coupon rate and 10 years to maturity

18. The Money Shoppe will loan you cold hard cash until your next paycheck. You will write a $832 cheque post-dated by two weeks and you will receive $800 right now. What is the biweekly compounded APR of this loan (assuming a year is exactly 52 weeks long)? Note: Biweekly = happening every two weeks.

A) 104.00%
B) 177.25%
C) 204.00%
D) 208.00%
E) 277.25%

$$800 \times (1 + k) = 832 \Rightarrow k = 4\%$$

$$biweekly\ compounded\ APR = 26 \times 4\% = 104\%$$

19. If you believe that the price of Compact Computer shares will rise, you could profit from the following strategy: ……

I. Write call options on Compact stock.
II. Buy put options on Compact stock
III. Buy call options on Compact stock
IV. Write put options on Compact stock.

A) I only
B) II only
C) III only
D) IV only
E) III, and IV

20. IKEA Direct Return policy: Simple and easy! You may return items to any IKEA store within Canada, in person, for a refund within 45 days of reception. Please be sure to have the original sales receipt and packaging at the time of your visit. The IKEA Direct return policy represents...

A) a European put option written by IKEA Direct.
B) an American put option written by IKEA Direct.
C) an American call option written by IKEA Direct.
D) an American call option written by IKEA Direct customers.
E) an American put option written by IKEA Direct customers.

21. Your quantitative research team at Technical Investment Strategies LLC reports that they identified a successful trading strategy. The team claims that superior returns could be achieved by purchasing Canadian stocks whose price has increased at a higher rate than the increase in the Toronto Stock Exchange S&P/TSX stock market index over the past six month. If true, the existence of such a trading strategy would be evidence...

A) against the stock market being strong form efficient.
B) against the stock market being semi-strong form efficient.
C) against the stock market being weak form efficient.
D) Both (A) and (B)
E) All (A), (B) and (C)

22. You would like to invest in a portfolio with a beta of 0.2. How would you divide your funds between the risk free asset and the market portfolio in order to achieve that goal? …….

A) 2% in the risk free asset, the rest in the market portfolio
B) 20% in the risk free asset, the rest in the market portfolio
C) 50% in the risk free asset, the rest in the market portfolio
D) 80% in the risk free asset, the rest in the market portfolio
E) 100% in the risk free asset

23. The internal rate of return on a project is 11.24%. Which of the following (is) are true if the project is assigned a 9.5% discount rate? (*Note: assume that the cash flows from the project are conventional, i.e. initial outflow followed by positive future cash flows*).

I The project will have a negative net present value.
II The profitability index will be greater than 1.0.
III The initial investment is less than the market value of the project.
IV The project will have a positive effect on shareholders if it is accepted.

A) I only
B) II and IV only
C) I and III only
D) II and III only
E) II, III, and IV only

24. Which of the following is a FALSE statement of the Sharpe ratio?

A) It is used to assess the performance of portfolios.
B) It describes how well an asset's return compensates investors for the risk taken.
C) It is the slope of the CAL.
D) It is a "risk-adjusted" measure of portfolio performance.
E) It is a measure of the asset's "risk-adjusted" return per unit of non-diversifiable risk.

25. A firm's pre-tax cost of debt is RD = 8%, its cost of equity is RE = 12%, and it is subject to a 40% corporate income tax rate. The firm's debt-to-equity ratio is D/E = 2/3. What is the firm's WACC? …… .

A) 7.20%
B) 7.68%
C) 9.12%
D) 10.00%
E) 10.40%

$$\frac{D}{V} = \frac{2}{5}, \quad and \quad \frac{E}{V} = \frac{3}{5}$$

$$\therefore WACC = 0.08 \times (1 - 0.4) \times \frac{2}{5} + 0.12 \times \frac{3}{5} = 9.12\%$$

26. Which of the following is NOT true about the P/E ratio?

A) A comparison of one company with its peers also involves a great deal of subjectivity regarding company-specific characteristics.
B) P/E ratios only work well on companies in the high growth stage of their lifecycle.
C) P/E ratios are uninformative when companies have negative or very small earnings.
D) The volatile nature of earnings implies a great deal of volatility in P/E multiples.

27. The steeper the slope of the security market line, the

A) Higher the risk-free rate of return.
B) Lower the risk-free rate of return.
C) Higher the market beta.
D) Higher the risk premium.
E) Lower the risk premium.

28. For a given effective annual rate, the quoted rate _____ as the compounding frequency increases.

A) Does not change.
B) Increases.
C) decreases.
D) either increase or decrease, depending on the effective rate.
E) None of the above.

Part II: Problems (30 Points Total)

- **Answer on this document, in the space provided.**
- Show all of your calculations.
- Write clearly! Part marks will be awarded (when deserved).

Q1: (10 Points)

Currently Toronto Dominion Bank is offering a mortgage with an interest rate of 8.6% (APR compounded semi-annually). This mortgage has a 25-year amortization life.

a. (2 Points) What is the effective monthly rate on this mortgage?

$$\textit{Effective monthly rate} = \left(1 + \frac{0.086}{2}\right)^{\frac{1}{6}} - 1 = 0.00704154 = 0.7042\%$$

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........  2 points only if the student has the exact answer
........  1 Point if you see that the student is on the right
            track (this is left at instructor's discretion)
```

b. (3 Points) What are the monthly payments on a $200,000 mortgage under this contract?

$$200,000 = \frac{PMT}{0.00704154} \times \left(1 - \frac{1}{(1 + 0.00704154)^{300}}\right)$$

$$\therefore PMT = \$1,603.70$$

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......  No penalty for carry over error (incorrect number in part a)
......  3 points only if everything done correctly
......  reduce 1 point for incorrect number of months
......  remaining part marks at instructor's discretion.
```

c. (2 Points) How much do you still owe three years after you took out this mortgage (i.e. immediately after you made your 36th monthly payment)?

$$\text{Outstanding Balance} = \frac{1603.70}{0.00704154} \times \left(1 - \frac{1}{(1+0.00704154)^{264}} \right) = \$192,025.70$$

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...... No penalty for carry over error (incorrect numbers in parts a
       and/or b)
...... 2 points only if everything done correctly
...... reduce 1 point if used incorrect number of months
...... remaining part marks at instructor's discretion.
```

d. (3 Points) What is the principal portion of the 37th mortgage payment?

Payment=$1603.70

$Interest = 0.00704154 \times 192025.70 = \$1352.16$

Principal portion of payment $= 1603.70 - 1352.16 = \$251.54$

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..... No penalty for carry over error
..... 3 points only if everything done correctly
..... part marks left at instructor's discretion.
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Q2: (9 Points)

You are taking on a new 4-year project, which does not require any new investments in capital asset. The sales revenues from this project are expected to grow at 5% per year, starting with $20,000 in year one. Expected project costs are $5000 per year. Inventory will increase immediately by $10,000. Accounts receivable are expected to be 10% of revenues and accounts payable are expected to be 5% of costs, each year. Assume that all the net working capital will be recaptured in year 4. Your firm's tax rate is 40% and the WACC is 10%.

a) (5 point) Estimate cash flows (excluding depreciation tax shields) for each year (years 1, 2, 3 and 4)

Period	0	1	2	3	4
Sales		$20,000	$21,000	$22,050	$23,153
Costs		$5,000	$5,000	$5,000	$5,000
(S - C)x(1 - Tc)		$9,000	$9,600	$10,230	$10,892
Inventory	$10,000	$10,000	$10,000	$10,000	$10,000
A/R		$2,000	$2,100	$2,205	$2,315
A/P		$250	$250	$250	$250
NWC	$10,000	$11,750	$11,850	$11,955	$12,065
CF from ΔNWC (-ΔNWC)	-$10,000	-$1,750	-$100	-$105	-$110
NWC Recaptured					$12,065
Cash Flows	-$10,000	$7,250	$9,500	$10,125	$22,847

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---- 1 Point for getting (S-C)X(1-Tc)
---- 2 Point for Change in NWC
---- 1 Point for correctly recapturing NWC
---- 1 Point for getting the final cash flow correctly
```

b) (2 point) What is the NPV of the project, excluding CCA tax shields?

Cash Flows	-$10,000	$7,250	$9,500	$10,125	$22,847
WACC	10%				
PV	-10000	6590.91	7851.24	7607.06	15604.47
NPV (Without TS)	$27,653.68				

Part marks left at instructor's discretion

c) (1 point) What is the present value of the CCA tax shields? Explain your answer in words.

Zero (No new investment)

d) (1 points) Should you accept or reject the project?

NPV = $27,653.68 >0

Therefore, Accept the project

Q3: (5 Points)

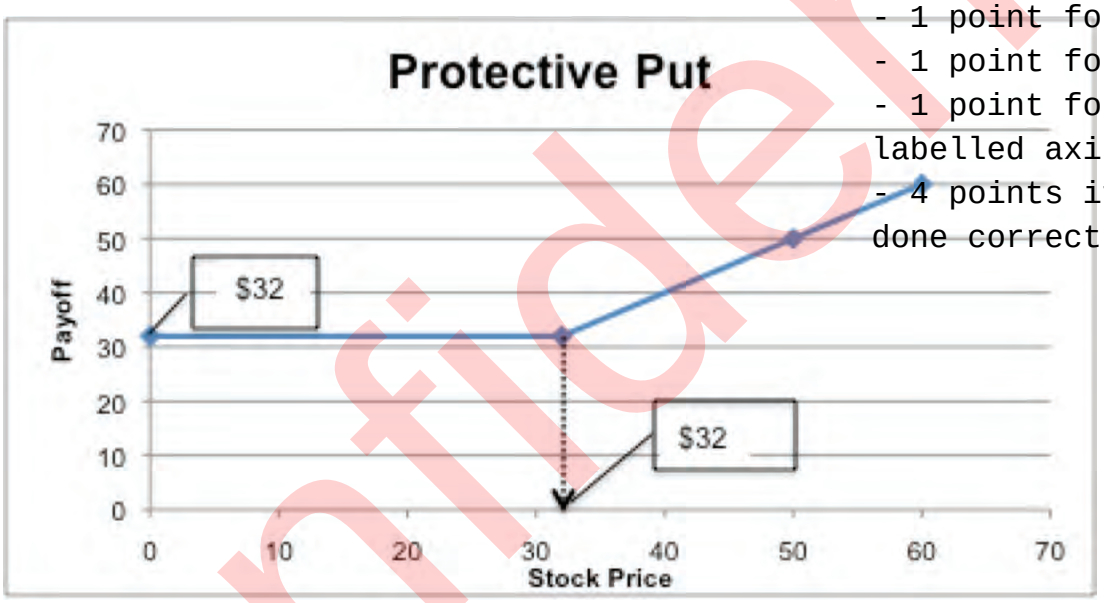
Important: when drawing payoff or profit diagrams, you need to show the location of each important point on the diagram by writing down the relevant numbers next to each point (i.e. indicate intersections with the horizontal and vertical axes and any points where the payoff/profit function changes abruptly).

Third Mug Inc. stock currently sells for $30 per share

Typo: Replace the word "profit" with the word "payoff"

a) (4 Points) Consider a put option on Third Mug Inc. stock with a strike price of $32 and time to expiration of one year. Draw the profit diagram for a protective put position (i.e. assume you own a share of Third Mug stock and you hold a put option as well).

Stock	0	32	50	60
Put	32	0	0	0
Protective Put	32	32	50	60



- 1 point for $32 on y-axis
- 1 point for $32 on x-axis
- 1 point for correctly labelled axis
- 4 points if everything done correctly

b) (1 Point) Consider a call option on Third Mug Inc. stock with a strike price of $35 and time to expiration of one year. This option sells for $2. Consider another call option on Third Mug Inc. stock with a strike price of $32 and time to expiration of one year. Do you expect the second option (strike $32) to be more or less expensive than the first option (strike $35) above? Why?

More Expensive. Lower strike price makes the call option more valuable.

Part marks left at instructor's discretion

Q4: (6 Points) Short Answers:

a) (2 points) What would be the implications of "unlimited liability" for stockholders?

Implications for shareholders:
Shareholder's unlimited liability would suggest that debt holders could go after stockholders' personal assets in case the firm is unable to meet its debt obligations (pay interest on its debt).

Implications for the firms:
With unlimited liability, investors would be very careful which stocks they invest in. In particular, they would not invest in companies, which they expect would be unable to satisfy its financial obligations. In such a situation, it would be very difficult for a young, untested business to raise capital in the stock market.

Note: The question asks only for the first part.

b) (2 points) Suppose your firm is going to finance a new project 100% with retained earnings. Your boss claims that since the earnings are already being retained and that since no outside financing is required, the project should be evaluated at the risk-free rate of return. Is this appropriate? Are retained earnings risk-free? Why or why not?

No.

1. Retained earnings essentially belong to equity holders and therefore the appropriate cost is the cost of equity.
2. The boss is basing the cost of capital only on the source of funds, and he is ignoring the risk of the new project (the use of the fund).

c) (2 points) Suppose your cousin invests in the stock market and doubles her money in a single year while the market, on average, earned a return of only about 15%. Is your cousin's performance a violation of market efficiency?

No, market efficiency does not preclude investors from "beating the market. " It is entirely possible to earn higher returns than the market at times. However, if your cousin is able to do so consistently, then there would certainly be some doubt cast upon market efficiency.

Equation List - Comm 308 - Booth-Cleary Text

5.3	Present Value of FV_n : $PV_0 = \frac{FV_n}{(1+k)^n}$
5.4	Future value of an annuity: $FV_n = \frac{PMT}{k}\left[(1+k)^n - 1\right]$
5.5	Present Value of an annuity: $PV_n = \frac{PMT}{k}\left[1 - \frac{1}{(1+k)^n}\right]$
5.8	Present value of perpetuity: $PV_0 = \frac{PMT}{k}$
5.10	Effective rate with continuous compounding: $k = e^{QR} - 1$
5.11	Effective rate: $k = \left(1 + \frac{QR}{m}\right)^{\frac{m}{f}} - 1$
5A-2	Present value of growing perpetuity: $PV_0 = \frac{PMT_0(1+g)}{k-g} = \frac{PMT_1}{k-g}$
5A-4	Present value of growing annuity: $PV_0 = \frac{PMT_1}{k-g}\left[1 - \left(\frac{1+g}{1+k}\right)^n\right]$
6.3	Current Yield: $CY = \frac{Annual\ Interest}{B}$
6.6	Price of T-Bill given BEY: $P = \frac{F}{\left(1 + k_{BEY} \times \frac{n}{365}\right)}$
7.10	Share price with growth opportunities: $P_0 = \frac{EPS_1}{k_c} + PVGO$
7.11	Growth rate: $g = b * ROE$
8.3	Total return = Income yield + Capital gain (loss) yield = $\frac{CF_1}{P_0} + \frac{P_1 - P_0}{P_0}$
8.5	Geometric average (GM) $= \left[(1+r_1)(1+r_2)(1+r_3)\times(1+r_n)\right]^{1/n} - 1 = \left(\prod_{i=1}^{n}(1+r_i)\right)^{\frac{1}{n}} - 1$
8.6	Expected return: $ER = \sum_{i=1}^{n}(r_i * \text{Prob}_i)$
8.7	Ex-post $\sigma = \sqrt{\frac{\sum_{i=1}^{n}(r_i - \bar{r})^2}{n-1}}$
8.8	Ex-ante $\sigma = \sqrt{\sum_{i=1}^{n}(\text{Prob}_i)(r_i - ER)^2}$
8.9	Expected portfolio return: $ER_p = \sum_{i=1}^{n}(w_i * ER_i)$
8.11	Portfolio standard deviation: $\sigma_P = \sqrt{(w_A)^2(\sigma_A)^2 + (w_B)^2(\sigma_B)^2 + 2(w_A)(w_B)(COV_{A,B})}$
8.12	$COV_{A,B} = \sum_{i=1}^{n}\text{Prob}_i(r_{A,i} - \bar{r_a})(r_{B,i} - \bar{r_b})$

8.14	$COV_{AB} = \rho_{AB}\sigma_A\sigma_B$
8.16	If $\rho_{AB} = -1$, then: $\sigma_P = w\sigma_A - (1-w)\sigma_B$
9.3	$E(R_P) = RF + \left(\frac{E(R_A) - RF}{\sigma_A}\right)\sigma_P$
9.4	Slope of CML $= \frac{ER_M - RF}{\sigma_M}$
9.6	Sharpe Ratio $= \frac{ER_P - RF}{\sigma_P}$
9.7	$\beta_i = \frac{Cov_{i,M}}{\sigma_M^2} = \frac{\rho_{i,M}\sigma_i}{\sigma_M}$
9.8	$\beta_P = w_A\beta_A + w_B\beta_B + \ldots + w_n\beta_n$
9.9	$k_i = RF + (ER_M - RF)\beta_i$
12.2	$Option$ Premium $= IV + TV$
12.5	Put Call Parity: $P + S = C + PV(X)$
13.1	$NPV = \frac{CF_1}{(1+k)^1} + \frac{CF_2}{(1+k)^2} + \frac{CF_3}{(1+k)^3} + .. + \frac{CF_n}{(1+k)^n} - CF_0 = \sum_{t=1}^{n}\frac{CF_t}{(1+k)^t} - CF_0$
13.3	$PI = \frac{PV(Cash\ \text{inflows})}{PV(Cash\ \text{outflows})}$
14.1	$CF_0 = C_0 + \Delta NWC_0 + OC$
14.2	$CF_t = CFBT_t(1-T) + CCA_t(T)$
14.4	$ECF_n = SV_n + \Delta NWC_n$
14.5	$NPV = PV(CF_t) + PV(ECF_n) - CF_0$
14.6	$PV(Operating\ Cash\ Flows) = \frac{CFBT(1-T)}{k}\left[1 - \frac{1}{(1+k)^n}\right]$
14.7	$PV(CCA\ Tax\ Shield) = \frac{(C_0)(d)(T)}{d+k} * \frac{(1+0.5k)}{(1+k)} - \frac{(SV_n)(d)(T)}{d+k} * \frac{1}{(1+k)^n}$
20.8	Cost of Capital: $K_a = \frac{ROI \times IC}{V} = \frac{K_e S + K_d(1-T)D}{V} = K_e\frac{S}{V} + K_d(1-T)\frac{D}{V}$
20.9	$WACC = K_e\frac{S}{V} + K_p\frac{P}{V} + K_i\frac{D}{V}$, Where: $K_i = K_d(1-T)$
20.10	Market value: $S = P_0 \times n$
20.13	Net proceeds: $NP = \frac{I(1-T)}{K_i}\left[1 - \frac{1}{(1+K_i)^n}\right] + F\left(\frac{1}{(1+K_i)^n}\right)$
20.14	Cost of preferred shares: $K_p = D_p \Big/ NP$
20.17	$K_{ne} = \frac{D_1}{NP} + g$
20.21	$K_e = \frac{D_1}{P_0} + g = \frac{X_1(1-b)}{P_0} + b * ROE$
20.27	Cost of new equity: $K_{ne} = K_e * \frac{P_0}{NP}$