WILFRID LAURIER UNIVERSITY
WATERLOO, ONTARIO

Session: Fall 2012 Final Exam
Course No.: BU383
Title: Financial Management I
Professor(s): W.J. McNally, P. Freire, L. Samarbakhsh
Number of pages: 28
Length of examination: 2.5 hours
Examination aids allowed: Calculator (no keyboard), Dictionary (if foreign student)

The doors of the examination room will be opened approximately 10 minutes before the start of the examination. Candidates will be permitted to enter the examination room quietly up to one half hour after the scheduled start of the exam. Candidates arriving late will not be allowed extra time.

Candidates must not begin the examination or attempt to read the examination questions until instructed to do so.

Candidates once having entered, may not leave the exam room before completing and submitting the exam unless accompanied by a Proctor. Candidates are not permitted to submit their examination and leave the examination room until 1 hour after the examination has begun, and in no case before their attendance has been taken. In no case may a candidate leave the room temporarily, for any reason, until 30 minutes after the start of the examination. In order that remaining candidates are not disrupted, candidates must remain seated and may not leave the examination room during the last 15 minutes of the examination session.

At the close of the examination period, candidates must stop writing immediately. The Presiding Officer may seize the papers of candidates who fail to observe this requirement, and a penalty may be imposed at the discretion of the instructor. Candidates must submit all their work, according to the instructions of the Presiding Officer, including all materials and a copy of the examination paper with their name and student ID number written on it. Unused examination booklets may not be taken from the examination room.

A candidate who leaves before the examination is over must hand in all completed and attempted work, notes made during the exam, and a copy of the examination paper with their name and student ID number on it.

Talk or any form of communication between candidates is absolutely forbidden. No information of any kind is to be written on the question paper or on scrap paper for the purpose of assisting other candidates. Responses to questions must not be done in an exaggerated way or in a manner that will involve transmission of information to others.

Candidates must remain seated during the examination period. A candidate needing to speak to the proctor (e.g. to ask for additional supplies or to request permission to leave the examination room for any reason) should so indicate by raising his or her hand.

Questions concerning possible errors, ambiguities or omissions in the examination paper must be directed to the proctor who will investigate them through the proper channels. The proctor is not permitted to answer questions other than those concerning the examination paper.

Candidates must not use or attempt to use any improper source of information. No candidates may bring into the examination room any books, notes or other material containing information pertaining to the examination unless the examiner has given instructions that such material will be allowed and this instruction is specified on the examination paper. Any item brought into the examination room is subject to inspection.

No briefcases, backpacks or other bags and carriers may be brought to the desk site where the candidate is writing the examination. These bags should be left outside the examination room. If books, notes etc. cannot be left outside the examination room, they must be put at the front of the examination room in a place designated by the proctor before a candidate takes a seat. Candidates are advised not to bring valuables to the examination room.

No electronic or communication devices will be allowed in the examination room, including cell phones, blackberries, pagers, etc. Calculators are not allowed unless specified by the instructor and indicated on the examination paper. Only non-programmable models authorized by the instructor will be allowed. It is the candidate's responsibility to ascertain whether the use of calculators is permitted, and, if it is, whether any restrictions are imposed on the types of calculators that may be brought to the examination.

Translation dictionaries (e.g. English-French) or other dictionaries, (thesaurus, definitions, technical) are not allowed unless specified by the instructor and indicated on the examination paper. Electronic dictionaries are never allowed.

Except for bottled water, no food or drink is allowed in the examination room. Candidates with health problems that warrant relaxation of this regulation should provide medical documentation to the presiding officer prior to the beginning of the examination. Such students should restrict themselves to those items and packaging that will least distract other examinees.

Candidates must write their examinations in an honest and straightforward manner. If there are reasonable grounds for believing a violation of exam protocol has occurred, the candidate will be subject to the disciplinary procedures and sanctions according to the University Calendar.

Only currently registered students will be permitted to write the final exam.

Examinations conducted at Wilfrid University will be bound by WLU regulations, regardless of where the candidate is registered.

Approved by Senate (Oct. 27/2003)

ADDITIONAL INSTRUCTIONS

BEFORE THE EXAM

1. Complete the personal identification portion of the multiple choice answer card. Shade in the boxes below your student number on BOTH sides of the Scantron card.
2. Your student number should be left-aligned in the field.
3. UofW students should create a 9-digit number by adding a '0' at the END of their UofW student number.
4. Make sure that you shade the letter 'A' Under "Test Form".

DURING THE EXAM

5. Count the pages to be certain that there are no missing pages. Ask a proctor for a new exam paper if pages are missing.
6. **No** questions concerning possible errors or ambiguities will be answered by the proctors or the Professors during the exam.
7. If, for any reason, you think that the correct answer is missing from the multiple choices, then select the best available answer-- that is, the multiple choice which has the closest value to the correct answer.
8. Students are NOT allowed to speak to one another during the exam or exam collection period.
9. You must sign the identification sheet before leaving.
10. You are not allowed to use your own paper for rough work. Ask a proctor for scrap paper.
11. Closed book. No notes or books are permitted.
12. You are to stop writing immediately upon being told that the exam is over.

AFTER THE EXAM

13. Students may NOT leave the exam hall in the last 15 minutes of the exam.
14. Both the Scantron card and the exam MUST be handed in.
15. At the end of the exam, the proctors will collect the Scantron cards. Please remain seated quietly. When dismissed, place the exam in the containers provided at the front of the exam room.

		# Questions	Marks	Approx. Time
Section 1	Instructions	10	1	
Section 2	Pro Forma	4	4	
Section 3	Ratio Analysis	4	4	
Section 4	Free Cash Flow	2	2	
Section 5	Short-Term Financial	2	2	
Section 6	Stock Valuation	4	4	
Section 7	Cash Budget	3	3	
Section 8	Portfolio Theory	7	7	
Section 9	Futures and Options	6	6	
Section 10	TVM & Financing	4	4	
Section 11	Bonds	4	4	
TOTAL		50	41	150 minutes

1. Exam Instructions

(10 Questions worth 0.10 marks each)

1 How much time, on average, should you spend on each question? (Total time divided by 40.)

A) 3.75 minutes

2 Which letter should you shade under “Test Form” on your Scantron card?

A) A

3 Should your shaded student number be left-aligned or right-aligned on the Scantron card?

A) Left-aligned

4 True or False? The Scantron cards are the only item that will be marked and will be collected by the proctor at the end of the exam.

A) True

5 True or False? I should complete the Scantron card using a pencil.

A) True

6 True or False? If I am confused about an ambiguous exam question, then I can ask the Professor a question.

A) False.

7 If the correct answer appears to be missing from the multiple choices then I should:

A) Select the best available answer.

8 If I finish my exam in the last 15 minutes of the exam period, then:

A) I should wait quietly in my seat until I am dismissed by the proctors.

9 Can students talk during the exam or exam collection period?

A) No

10 Can students continue to write after the end of the exam? (For example, to complete the Scantron card.)

A) No. Students who continue writing will have their incomplete Scantron cards collected by the Proctor and will be marked on the basis of the incomplete card.

2. Pro Forma

In some questions, the correct answer may not be amongst the multiple choices. For those questions, select the best available answer.

Selected Financial Information Outlaws Inc. ($ millions)		
	Year 1	Year 2
Short Term Debt	627	715
Long Term Debt	4,194	4,208
Interest Expense		277

11 Outlaws is a general goods retail chain in the High Plains region. Outlaws is forecasting its financial statements for Year 3. Selected financial information for Years 1 and 2 is provided in the table. What is the interest expense for Outlaws in Year 3? (Assume that Outlaws average interest rate on debt is 6.25%.)

A) $209
B) $243
C) $263
D) $295
E) *$308

Selected Financial Information Save-a-lot Inc. Dec 31, Year 2 and Year 3 ($ millions)		
	Year 2	Year 3
Property, Plant & Equip.	$14,456	
Depreciation	923	903
CAPEX	1,329	600

12 Save-a-lot is a grocery store chain. Save-a-lot is forecasting its financial statements for Year 3. Selected financial information for Years 2 and 3 is provided in the table. In Year 3 Save-a-lot is planning to invest $600 million in CAPEX and forecasted depreciation is $903 million. What is Net PP&E (Property, Plant and Equipment) at the end of Year 3?

A) *$14,170
B) $14,250
C) $14,382
D) $14,456
E) $14,577

Selected Financial Information Outlaws Inc. ($ millions)			
	Year 2	**Ratios (to Sales)**	**Forecast Year 3**
Revenue	29,210		$30,817
Cost of Goods Sold	22,152	0.758370	
SG&A	5,245	0.179562	
Depreciation Expense	621		621
EBIT	1,192		
Interest Expense	277		277
Earnings before Taxes	915		
Provision for Income Taxes	288	0.35[a]	
Net Income	$627		
Dividends			$225
Retained Earnings	$5,089		
Owner's Equity	$6,281		
[a] The tax rate is a percentage of Earnings Before Tax.			

13 Outlaws is a general goods retail chain in the High Plains region. Outlaws is forecasting its financial statements for Year 3. Selected financial information for Years 1 and 2 is provided in the table. What is Retained Earnings for Year 3?

A) *$5,537
B) $5,745
C) $5,762
D) $7,610
E) $7,385

The next question deals with the CN Railways which is North America's fifth largest railway. Forecast the financial statements for CN for Year 11. Use the percent of sales method based on Year 10 and the assumptions listed below. Please note the ratios to sales provided in the table which are useful for making the forecast. Answer the question below.

1. Sales growth of 10%.
2. The interest rate on debt is 4.59%.
3. The tax rate is 31.943%.
4. The depreciation rate is 3%.
5. CAPEX is $1,600 Million.
6. The following accounts are constant: Intangible assets, Deferred taxes, and Common Stock.
7. Long term debt is the PLUG variable.
8. No dividends.

CN Railway Company
Income Statement and Balance Sheet
As of December 31, Year 10
($ 000,000's)

	Year 10	Ratios	Forecast
Revenue	$ 6,110		$ 6,721
Cost of Goods Sold	2,550	0.417349	
Depreciation Expense	499		
SG&A	1,945	0.318331	
EBIT	1,116		
Interest expense	277		
Income before Taxes	839		
Income Taxes	268		
Net income	$ 571		

ASSETS	Year 10	Ratios	Forecast
Total Current Assets	1,163	0.190344	
Property, plant and equipment, NET	16,898		
Intangible assets	863		863
Total assets	$ 18,924		
Total Current liabilities	2,134	0.349264	
Deferred Taxes	5,160		5,160
Long-term debt	5,003		
Common Stock	3,558		3,558
Retained earnings	2,762		
Total Owners Equity	6,627		
Total liabilities and Owners equity	18,924		

14 Forecast the financial statements for CN. What are the additional funds needed (AFN) in Year 11? The AFN is the change in the plug account from Year 10 to Year 11. (AFN = Long-term $Debt_{11}$ – Long-term $Debt_{10}$)

A) $64 million
B) $165 million
C) $342 million
D) *$580 million
E) $965 million

3. RATIO ANALYSIS

In some questions, the correct answer may not be amongst the multiple choices. For those questions, select the best available answer.

Hochelaga Distributors Inc. is a distributor of golf equipment to retail chains throughout North America. It distributes products by Ping, Callaway, Adams and other national brands. The company is based near Watertown, New York on the South shore of the St. Lawrence River. Complete the Du Pont Analysis on Hochelaga for the years Year 3 and Year 4 and then answer the questions below using the financial statements provided.

Hochelaga Distributors Inc.
Income Statement
($ Thousands)

	Year 3	Year 4
Sales	332,438	327,122
Cost of goods sold	299,859	295,674
SG&A	18,237	19,497
Depreciation	1,669	1,865
Amortization of goodwill	0	271
EBIT	12,673	9,815
Interest	637	1,013
Income (loss) before income taxes	12,036	8,802
Income taxes	5,482	3,782
Net Income (loss)	6,554	5,020
Common shares outstanding	8,224	8,723
Earnings (loss) per share	0.80	0.58

Hochelaga Distributors Inc.
Balance Sheet
($ Thousands)

	Year 3	Year 4
Cash & cash equivalents	4,369	2,199
Accounts receivable	56,923	75,597
Inventories	23,474	37,410
Total current assets	84,766	115,206
PP&E, net	7,405	10,163
Goodwill	0	15,229
Total assets	92,171	140,598
Bank indebtedness	0	14,023
Payables & accrued liabilities	43,986	57,336
Total current liabilities	43,986	71,359
Long-term debt	0	11,548
Shareholders' Equity		
Share capital	32,760	37,246
Retained earnings	15,425	20,445
Total stockholders' equity	48,185	57,691
Total Liabilities and Equity	92,171	140,598

Ratio	Year 3	Year 4
Net profit margin	1.97%	
Total asset turnover		2.33
Return on assets		
Equity multiplier	1.91	
Return on equity		

15 What is the change in ROE from Year 3 to Year 4? ($ROE_4 - ROE_3$)

A) *-4.9%
B) -3.5%
C) -1.28%
D) 3.5%
E) 4.9%

16 What is the change in leverage (Equity Multiplier) from Year 3 to Year 4?

A) *Increase
B) Decrease
C) No Change

17 What reason best explains the change in Total Asset Turnover (TAT)? ($\Delta TAT = TAT_4 - TAT_3$)

I. A decrease in inventory turnover
II. A decrease in accounts receivable turnover
III. An increase in leverage

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

18 Something big happened to Hochelaga between Year 3 and Year 4. What was it? (Choose the best explanation.)

A) Hochelaga's inventory management system failed. As a result, their inventory and accounts receivable increased.
B) Hochelaga took out a loan to finance increases in inventory and accounts receivable
C) Hochelaga built a new warehouse, hence the increase in depreciation and PP&E accounts
D) *The increase of PP&E and goodwill on the balance sheet shows that Hochelaga purchased another company
E) Hochelaga issued new shares

4. Free Cash Flow

In some questions, the correct answer may not be amongst the multiple choices. For those questions, select the best available answer.

19 Calculate the operating cash flow for Hochelaga for Year 4.

A) 12,324
B) 10,086
C) *8,169
D) 11,951
E) 9,279

20 Calculate the change in net working capital for Hochelaga for Year 4.

A) 9,712
B) 15,121
C) *19,260
D) 3,067
E) 11,425

5. Short-term Financial Management

In some questions, the correct answer may not be amongst the multiple choices. For those questions, select the best available answer.

	Kroger	Safeway	Supervalu
	(NYSE: KR)	(NYSE: SWY)	(NYSE: SVU)
Sales	90,374,000	43,630,200	36,100,000
CoGS	71,494,000	31,836,500	28,081,000
Owner's Equity	3,981,000	3,686,100	21,000
Debt	19,495,000	11,390,500	12,032,000
Inventory	5,114,000	2,469,600	2,150,000
Accounts Receivable	949,000	652,100	730,000
Accounts Payable	5,575,000	4,197,800	2,519,000
Days Inventory		28.31	27.95
Days Receivable	3.83		7.38
Days Payable	28.46	48.13	32.74

21 Which company has the most efficient inventory management system?

A) *Kroger
B) Safeway
C) Supervalu

22 Which company has the shortest interval between cash disbursal (from purchase of inputs) and cash collection (from sale of finished product)?

A) Kroger
B) *Safeway
C) Supervalu

6. Stock Valuation

In some questions, the correct answer may not be amongst the multiple choices. For those questions, select the best available answer.

23 The Blockbuster business model is slowly dying and so Blockbuster's dividends are expected to grow at a rate of –2% per annum in perpetuity. Blockbuster just (yesterday) paid a dividend of $2.00 per share. Blockbuster pays dividends annually. Stock holders require a rate of return of 10%. What is the fair stock price for Blockbuster today?

A) *$16.33
B) $25.50
C) $17.00
D) $24.50
E) $16.49

24 Whole Foods Market Inc. distributes cash to shareholders on the last day of each fiscal year (Dec 31). Today is January 1. Yesterday, Whole Foods paid $70 million in dividends ($0.40 per share to 175 million shares) and repurchased shares worth $100 million. The stock is trading today for $90 and shareholders require a return of 7%. If payouts are assumed to be paid annually and grow at a constant rate in perpetuity, then what is the average growth rate priced into the stock?

A) 5.37%
B) 5.53%
C) 5.63%
D) *5.86%
E) 5.92%

25 Google does not currently pay any dividends or repurchase shares. Earnings per share for the year ended yesterday were $32. Assume that Google will start paying an annual dividend in four years and adopt a dividend payout rate of 50% at that time. Assume that earnings-per-share will grow at 10% per annum over the next four years. Shareholders require a return of 9% on Google's shares. Assume that, after it starts, Google will continue paying annual dividends that will grow at a constant rate of 6.1% per annum in perpetuity. What is the fair price for the stock today?

A) $426.03
B) $572.25
C) *$623.75
D) $807.78
E) $1,247.51

	Kroger (NYSE: KR)	Safeway (NYSE: SWY)	Wal-Mart (NYSE: WMT)
Price	$25	$17	$69
EPS	1.06	2.11	4.86
Book Value per Share	7.01	15.05	22.08
Price-to-Earnings		7.8	
Market-to-Book	3.57		3.13
Sales	90,374,000	43,630,200	446,950,000
Net Income	602,000	516,700	15,699,000
Owner's Equity	3,981,000	3,686,100	71,315,000
Debt	19,495,000	11,390,500	121,687,000

26 Using valuation ratios, which stock looks overpriced (relative to the other two)?

A) *Kroger
B) Safeway
C) Wal-Mart

7. Cash Budget

In some questions, the correct answer may not be amongst the multiple choices. For those questions, select the best available answer.

Sales and Collections Forecast Gyrl Skateboards Inc. ($000s)			
	Oct	**Nov**	**Dec**
Sales forecast	$2,600	$2,700	$2,950
Cash Sales			
Collections from last month			
Collections from 2 months ago			
Total Cash inflows			

27 Gyrl Skateboards manufactures skateboard decks. Guy Gyrl, the CEO, is forecasting cash flows for the next few months. Forecasted sales are shown on the top row of the table. Gyrl's sales are 25% cash and the rest are credit. It collects two-thirds of the credit sales in the month following the sale, and the remainder two months later. What are Gyrl's forecasted total cash inflows in December?

A) $2,700,000
B) $2,713,000
C) *$2,738,000
D) $2,888,000
E) $2,950,000

Sales and Payments Forecast Gyrl Skateboards Inc. ($000s)				
	Nov	**Dec**	**Jan**	**Feb**
Sales forecast	$2,700	$2,950	$2,545	$2,795
Purchases from Suppliers				
Payments to Suppliers				
Payments one month after				
Total Payments to Suppliers				

28 Gyrl Skateboards manufactures skateboard decks. Guy Gyrl, the CEO, is forecasting cash flows for the next few months. Forecasted sales are shown on the top row of the table. Gyrl's cost of goods sold is 81.2% of sales. Gyrl buys its raw materials one month prior to the sale of the finished product. It pays for half of its raw materials in the same month as the purchase and half in the following month. What are Gyrl's total payments to suppliers in January?

A) $2,050,000
B) *$2,168,000
C) $2,270,000
D) $2,568,000
E) $2,757,000

Sales Forecast and Cash budget Gyrl Skateboards Inc. ($000s)			
	Dec	**Jan**	**Feb**
Sales forecast	$4,425	$3,818	$4,193
Total Cash inflows	4,106	4,179	4,063
Total Cash Outflows	3,877	3,710	4,638
Net cash flow			
Beginning Cash Balance	$50		
Plus: Net Cash Flows			
Ending Cash Balance			

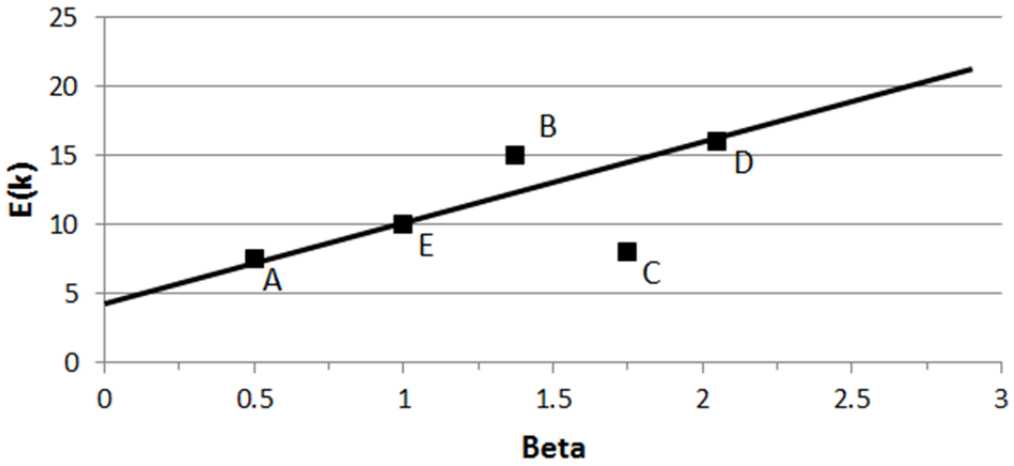
29 Gyrl Skateboards manufactures skateboard decks. Guy Gyrl, the CEO, is forecasting cash flows for the next few months. Forecasted sales are shown on the top row of the table. Forecasted cash inflows and outflows are also shown in the table. If Gyrl's starts December with $50,000 of cash in the bank, then what will its cash balance be at the end of January?

A) $229,000
B) $521,000
C) $469,000
D) $698,000
E) *$748,000

8. Portfolio Theory

In some questions, the correct answer may not be amongst the multiple choices. For those questions, select the best available answer.

Figure 2



30 The S&P 500 Index Fund seeks to provide long-term growth by replicating the performance of the S&P 500 Index through investments in the issuers of the index. The Index is comprised of 500 of the largest and most liquid securities listed on the NYSE and NASDAQ, selected by S&P. Which point on Figure 2 most likely corresponds to the S&P 500 Index Fund?

A) A
B) B
C) C
D) D
E) *E

31 You want to buy $20,000 worth of shares in Tootsie Roll Industries Inc. on margin, but you only have $10,000 of your own money to invest. The remaining $10,000 is borrowed by issuing T-Bills; assume the cost of borrowing is the risk-free rate. What is the portfolio weight for Tootsie Roll?

A) 0.25
B) 0.50
C) 1.00
D) 1.50
E) *2.00

32 You are considering investing in Stock ABC. This stock has an expected return of 14%, the risk free rate is 5%, and the market risk premium (or Treynor Index for the market portfolio) is 8%. What is the beta of Stock ABC?

A) 0.950
B) *1.125
C) 1.250
D) 1.400
E) 1.500

33 The Horizons Bear Plus Fund seeks daily expected returns that are two times (200%) the inverse (opposite) of the performance of the S&P 500 Index. If k_F = 5% and E(k_M) =10%, what is the Beta coefficient for the Bear Plus Fund??

A) –0.5
B) –2.0
C) –4.0
D) *–5.0
E) +1.0

34 You have been asked to analyze two stocks, Stock A and Stock B. The beta of stock A is 1.2, and the beta of stock B is 0.8. The expected return on stock A is 13.5%, the expected return on stock B is 11.0% and the risk-free rate is 7%. We also know that stock A is fairly priced. Which of the following regarding Stock B must be true?

A) The expected return on stock A is too high.
B) Stock B is also fairly priced.
C) *The price of stock B is too high.
D) The expected return on stock B is too high.

35 The table below gives the historic return over the past five months for the market portfolio and two assets: A and B. Which of the answers below best describes the historic beta for A and B?

Month	**Market**	**Asset A**	**Asset B**
1	3%	5%	4%
2	– 5	–6	4
3	1	4	4
4	–10	–12	4
5	6	10	4

A) $\beta_A < 0$; $\beta_B = 0$
B) $\beta_A > 0$; $\beta_B = +1$
C) $\beta_A > 0$; $\beta_B = 0$
D) *$\beta_A > +1$; $\beta_B = 0$
E) $\beta_A < -1$; $\beta_B = +1$

	Company 1		**Company 2**	
Day	**Price**	**# of Shares**	**Price**	**# of Shares**
1	6.62	200	10	750
2	7.24	200	10.54	750

36 Consider a value-weighted market index that includes the following two companies. On Day 1 you form a portfolio to mimic the index. (In other words, to earn the same return as the index.) What is the portfolio weight on Company 1, and what is the return on the portfolio from Day 1 to Day 2? (Weight %, Return %)

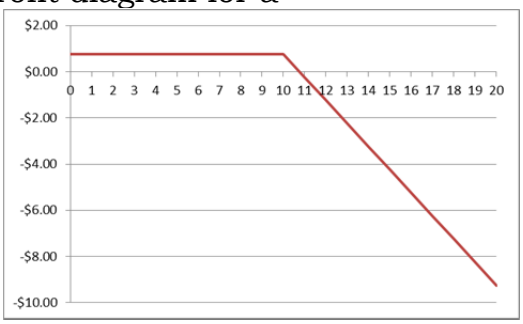
A) 14%, 5%
B) 14%, 6%
C) *15%, 6%
D) 15%, 7%
E) 16%, 5%

9. Futures and Options

In some questions, the correct answer may not be amongst the multiple choices. For those questions, select the best available answer.

37 The image to the lower right is a profit diagram for a

A) Long Call
B) *Short Call
C) Long Put
D) Short Put
E) None of the above



38 Consider the Apple Call option with the December expiration and a strike of $575. The option currently trades for a premium of $13.75. Apple shares are trading today for $565. What is the break-even price for a long call position?

A) *$588.75
B) $13.75
C) $565
D) $575
E) Unlimited

39 Consider the Apple Call option with the December expiration and a strike of $575. The option currently trades for a premium of $13.75. Apple shares are trading today for $565. What is the maximum profit that a call writer can earn on such an option?

A) *$13.75
B) $ 565
C) $ 575
D) $ 588.75
E) Unlimited downside

40 Consider the RIM Inc. Put option with the December expiration and a strike of $11. The option currently trades for a premium of $1.30. RIM shares are trading today for $10.25. If Rim goes bankrupt before mid-December, then what is the profit to the put owner?

A) *$9.70
B) $10.25
C) $11
D) $12.30
E) Unlimited

41 _____ does NOT hedge price risk with a long position in the _____ futures contract.

A) Weston Bakeries, wheat
B) Good Year Tires, rubber
C) *Barrick Gold Mining Corp., gold
D) U.S. Steel, coal

42 Schneider Foods requires pork bellies for producing bacon. Today is May 10. It requires 40,000lbs (pounds) in 2 months on July 10. The spot price of pork bellies is $1.177 per pound and the July futures contract is trading today for a price of $1.2055/lbs. Schneiders hedges its exposure to pork price changes by buying one pork bellies futures contract for July delivery. (Each pork bellies contract is for 40,000lbs). On July 10th it buys its pork (40,000lbs) from local pig farmers at $1.1655/lbs and closes out the futures position. Unfortunately, the pork bellies futures price had not achieved convergence on the day the position is closed—the futures price is $1.1700 when Schneiders closes its position. What is the cost per pound of the pork net of the hedge?

A) $1.1255
B) $1.1655
C) $1.1770
D) *$1.2010
E) $1.2055

10. Time Value and Short-term Financing

In some questions, the correct answer may not be amongst the multiple choices. For those questions, select the best available answer.

43 You are a financial analyst at BMW Financial Services Canada. A dealer has phoned you with the following question. A customer wants to end his lease early. To do so the customer must pay the balance owing on the lease and it is up to you to calculate that amount. The original price for the BMW 328i was $45,478.40 (including freight and dealer preparation). The lease rate was 4.9% over a three year term. The buyout was $22,672. The monthly payments before tax are $771.93 (and $880.00 after tax). The two year anniversary of the lease is tomorrow. What is the principal owing on the lease prior to tomorrow's payment?

A) $29,772.34 ($33,642.74 after tax)
B) $29,910.67 ($33,799.05 after tax)
C) $29,999.82 ($33,898.67 after tax)
D) *$30,648.76 ($34,633.10 after tax)
E) $30,882.12 ($34,896.80 after tax)

44 The ACNE Bank charges a loan origination fee of 1% on all of its small business term loans. For example, a 90 day term loan with principal of $500,000 would include a fee of 0.01 * $500,000 = $5,000 which is payable as soon as the principal is lent. If the APR on the loan is 6%, then what is the EIR of the loan with the origination fee?

A) 6.20%
B) 7.19%
C) 7.26%
D) 10.44%
E) *10.55%

45 Steve's TV sells the Panasonic 42 inch plasma television for $2,000. Steve's offers a two year 0% interest loan. You have the choice of 24 equal payments or one payment at the end of the term—you choose the later. There is a $100 fee at initiation to arrange the loan. What is the effective interest rate on the loan?

A) 0%
B) 2.0%
C) 2.5%
D) *2.6%
E) 5.0%

46 Your mortgage loan has a principal of $250,000, an amortization period of 25 years and a quoted rate of 6%. You elect to make semi-monthly payments. (Two payments per month.) What are the semi-monthly payments?

1. $775.33
2. $790.55
3. *$798.77
4. $804.95
5. $1,599.52

11. Bonds

In some questions, the correct answer may not be amongst the multiple choices. For those questions, select the best available answer.

47 A Bowie Bond has a face value of $1,000, a fifteen year term and pays annual coupons at the rate of 5%. (The next coupon is due in one year.) The yield to maturity on equivalent bonds is 8%. What is the price of a Bowie bond? If you sell this bond one year from now (after the next coupon is paid), then what is the percentage change in price and what is your overall return for the year? Change in price/overall return.

A) -6.7%/-8.0%
B) -1.3%/-8.0%
C) *+1.3%/+8.0%
D) +6.7%/+8.0%

48 Man-zeer Inc., (a Kramer/Costanza joint venture) bonds are currently trading at $974.79. The bonds have a face value of $1,000, an annual coupon rate of 7.5% with payments made semi-annually, and mature in 20 years. What is the yield-to-maturity?

A) 4.26%
B) 4.55%
C) 7.45%
D) *7.75%
E) 11.56%

49 Today is January 1, 2013. The current yields for zero-coupon bonds with varying maturities are outlined in the table below. Find the forward rate over the period from January 1, 2015 to January 1, 2016.

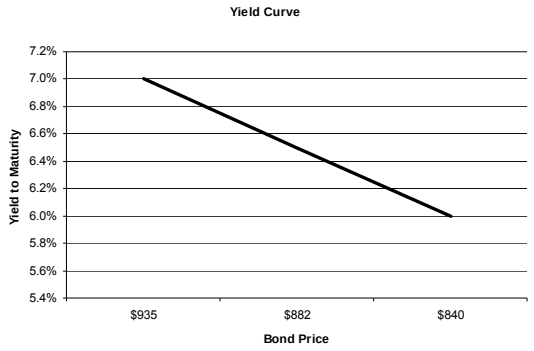
Maturity Date	Yield
Jan. 1, 2014	2.75%
Jan. 1, 2015	3.25%
Jan. 1, 2016	3.65%
Jan. 1, 2017	4.00%
Jan. 1, 2018	4.15%

A) *0.0445
B) 0.0454
C) 0.0475
D) 0.0506
E) 0.0722

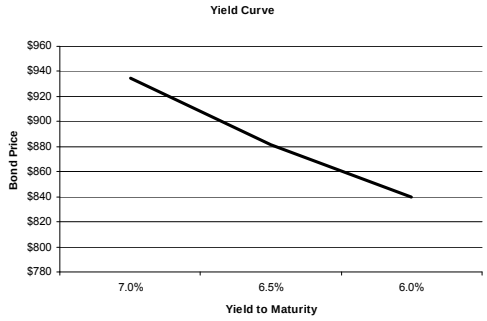
50 Which of the graphs below is the correct depiction of the yield curve given the data on the three zero coupon bonds in the table below?

Term	Price	Yield
t=1	$935	7%
t=2	$882	6.5%
t=3	$840	6%

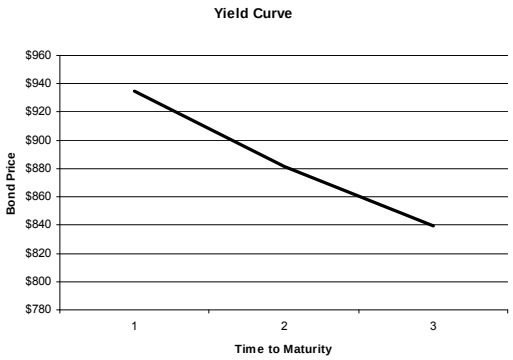
Graph A



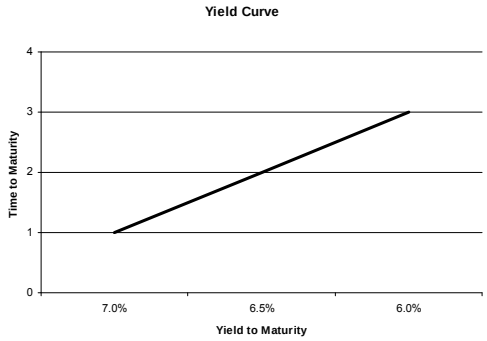
Graph B



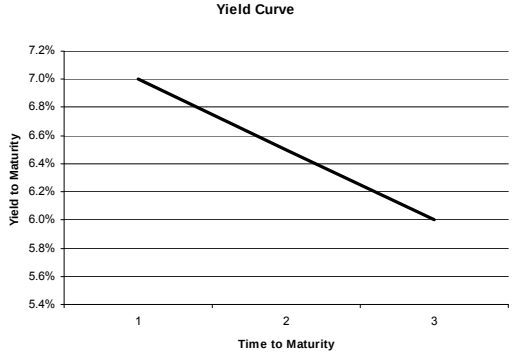
Graph C



Graph D



Graph E



A) Graph A
B) Graph B
C) Graph C
D) Graph D
E) *Graph E

12. Final Exam Formula Sheet

$$PVIF_{n,i} = \frac{1}{(1+i)^n} = (1+i)^{-n}$$

$$FVIF_{n,i} = (1+i)^n$$

$$PVIFA_{n,i} = \frac{1}{i}\left[1-(1+i)^{-n}\right]$$

$$FVIFA_{n,i} = \frac{1}{i}\left[(1+i)^n - 1\right]$$

$$PVIFA\text{-}Due_{n,i} = \frac{1}{i}\left[1-(1+i)^{-n}\right](1+i)$$

$$FVIFA\text{-}Due_{n,i} = \frac{1}{i}\left[(1+i)^n - 1\right](1+i)$$

$$PV = FVe^{-in}$$

$$f_t = \frac{(1+k_t)^t}{(1+k_{t-1})^{t-1}} - 1$$

$$EIR = \left(1+\frac{i}{m}\right)^m - 1$$

$$j = \left[1+\frac{i}{2}\right]^{2/m} - 1$$

$$i_{EIR} = \left[1 + \left(\frac{Interest+Fees-Savings}{Net\ Amount\ Borrowed}\right)\right]^{365/Days\ to\ maturity} - 1$$

NAB ≠ Principal for front-end fees, discount interest and compensating balance.

$$\text{Bond Equivalent Yield} = \frac{FV - Price}{Price} \cdot \frac{365}{Term}$$

$$P_{zero} = \frac{\$FV_n}{(1+i_n)^n}$$

$$P_{coup} = \$C \cdot \frac{1}{k_d}\left[1-(1+k_d)^{-n}\right] + \frac{\$FV}{(1+k_d)^n}$$

$$k_n = k_r + \pi + k_r\pi$$

$$\text{HoldingPeriodReturn} = \frac{P_t - P_{t-1}}{P_{t-1}} + \frac{C_t}{P_{t-1}}$$

$$\text{Return} = k = \frac{P_t - P_{t-1}}{P_{t-1}} + \frac{C_t}{P_{t-1}}$$

$$\text{Return} = k = \frac{P_t - P_{t-1}}{P_{t-1}} + \frac{D_t}{P_{t-1}}$$

$$P = \sum_{t=1}^{\infty} \frac{D}{(1+k)^t} = \frac{D}{k}$$

$$P = \sum_{t=1}^{\infty} \frac{D_0(1+g)^t}{(1+k)^t} = \frac{D_0(1+g)}{k-g} = \frac{D_1}{k-g}$$

$$P = \frac{TP_0(1+g)}{k-g} = \frac{TP_1}{k-g}$$

$$\frac{P_o}{EPS_1} = \frac{\text{Payout Ratio}}{k-g}$$

$$\rho_{ij} = \frac{COV(k_i, k_j)}{\sigma_i \sigma_j}$$

$$COV(\tilde{k}_1, \tilde{k}_2) = \sum_{i=1}^{n} Pr_i\left[k_{1i} - E(\tilde{k}_1)\right]\left[k_{2i} - E(\tilde{k}_2)\right]$$

$$\sigma = \sqrt{\sum_{i=1}^{n} Pr_i\left(k_i - E(k)\right)^2}$$

$$E(k_p) = x_1 \cdot E(k_1) + \ldots + x_n \cdot E(k_n)$$

$$\sigma = \sqrt{x^2\sigma_a^2 + (1-x)^2\sigma_b^2 + 2x(1-x)\rho_{a,b}\sigma_a\sigma_b}$$

$$E(k_1) = \sum_{i=1}^{n} Pr_i k_{1i}$$

$$E(k_i) = k_f + \beta_i(E(k_M) - k_f)$$

$$\frac{E(k_i) - k_f}{\beta_i}$$

$$\beta_i = \frac{COV(k_i, k_M)}{\sigma_M^2}$$

$$\beta_p = x_1 \cdot \beta_1 + \ldots + x_n \cdot \beta_n$$

$$\sigma_i^2 = \beta_i^2 \cdot \sigma_M^2 + \sigma_{di}^2.$$

Free Cash Flow = Operating Cash Flow – CAPEX – Change in NWC
Free Cash Flow = Change in Cash + Payments to claimholders

NWC = Current Assets – Current Liabilities

NWC = (Current Assets – Cash) – (Current Liabilities – Short-term Debt)

Total Debt = Short-term Debt + Long-term Debt

Current ratio	$\frac{\text{Current Assets}}{\text{Current Liabilities}}$
Quick ratio	$\frac{\text{Current assets - Inventory}}{\text{Current liabilities}}$
Inventory turnover	$\frac{\text{Cost of goods sold}}{\text{Inventory}}$
# Days Inventory (Days' sales in inventory)	$\frac{\text{Inventory}}{\text{COGS}} * 365$
Receivables turnover	$\frac{\text{Sales}}{\text{Accounts receivable}}$
# Days Receivable (Days' sales in receivables)	$\frac{\text{Accounts Receivable}}{\text{Sales}} * 365$
# Days Payable (Days' Payables)	$\frac{\text{AccountsPayable}}{\text{COGS}} * 365$
NWC to Total Capital	$\frac{\text{NWC}}{\text{Total Assets - Current Liabs.}}$
Fixed asset turnover	$\frac{\text{Sales}}{\text{Net fixed assets}}$
Total asset turnover	$\frac{\text{Sales}}{\text{Total assets}}$
Debt ratio	$\frac{\text{Total Liabilities}}{\text{Total assets}}$
Debt/equity ratio	Total Liabilities/Total equity

Equity multiplier	Total assets/Total equity
Times interest earned	$\frac{\text{EBIT}}{\text{Interest}}$
Cash Flow to Debt	$\frac{\text{Cash Flow}}{\text{Total Debt}} = \frac{\text{Net Income} + \text{Depreciation}}{\text{Short-term} + \text{Long-term Debt}}$
Asset Coverage (Collateral Ratio)	$\frac{\text{Long-term Tangible Assets}}{\text{Short-term} + \text{Long-term Debt}}$
Net Profit margin	$\frac{\text{Net income}}{\text{Sales}}$
Gross Margin	$\frac{\text{Sales - Cost of Goods Sold}}{\text{Sales}}$
Return on assets (ROA)	$\frac{\text{Net income}}{\text{Total assets}}$
Return on equity (ROE)	$\frac{\text{Net income}}{\text{Total equity}}$
Price/earning ratio	$\frac{\text{Price per share}}{\text{Earnings per share}}$
Market-to-book ratio	$\frac{\text{Market value per share}}{\text{Book value per share}}$
Dividend Payout	$\frac{\text{Dividends}}{\text{Net Income}}$
Dividend Yield	$\frac{\text{Dividends per share}}{\text{Market price per share}}$
EBITDA	Earnings Before Interest, Taxes, Depreciation and Amortization

ROE = ROA * [1 + D/E]
[1 + D/E] = Total Assets/Owner's Equity
D = Total Assets – Owner's Equity
ROA = Net Profit Margin * Total Asset Turnover