École de gestion TELFER School of Management

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ADM 2350N Midterm Examination Name: _____
February 27, 2012 Version #1 Student ID #: _____

Statement of Academic Integrity
The Telfer School of Management does not condone academic fraud, an act by a student that may result in a false academic evaluation of that student or of another student. Without limiting the generality of this definition, academic fraud occurs when a student commits any of the following offences: plagiarism or cheating of any kind, use of books, notes, mathematical tables, dictionaries or other study aid unless an explicit written note to the contrary appears on the exam, to have in his/her possession cameras, radios (radios with head sets), tape recorders, pagers, cell phones, or any other communication device which has not been previously authorized in writing.

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 midterm exam grade of zero.

General Instructions:

1. Please **SIGN** the academic integrity statement above.
2. Please put your **Name and Student ID# on ALL NINE pages** of this exam.
3. This is an **open book and open notes exam**. Notes are **any handwritten or printed materials,** including but not limited to, previous assignments, quizzes, and exams plus their solution sets.
4. The use of **scientific and financial calculators is encouraged**.
5. **Laptop computers or any other devices that can be used for communication are NOT permitted**.
6. Please **do NOT take apart the pages** of this exam.
7. You have **1 hour and 10 minutes** to work this exam.
8. Good Luck!

There are **FOUR multiple-choice problems** on this exam. Each problem counts 5 marks for a total of 20 marks for this exam. **To receive credit for each problem, you must show your work!**

1. Jeannette Hudon wishes to retire on her 60^{th} birthday. She wants to withdraw \$80,000 on each of her 60^{th} through 89^{th} birthdays (i.e. 30 withdrawals). Her life expectancy is 90 years, and she wishes to leave to her heirs \$800,000 at that time. (Just in case she does live longer than 90 years, she will dip into the \$800,000!) Assuming an interest rate throughout her life of 4%, how much must Jeannette accumulate by age 60 **BEFORE** making her first withdrawal to be able to provide for her retirement years and her bequest of \$800,000 and how much must Jeannette deposit at the end of each year for forty years, assuming she starts her plan at age 20 with deposits on her 21^{st} through 60^{th} birthdays with the deposit on her 60^{th} birthday occurring immediately **BEFORE** her withdrawal on that birthday.

   a. \$1,438,697.17, \$14,557.80
   b. \$1,438,697.17, \$15,140.11
   c. \$1,630,017.60, \$16,493.72
   d. \$1,630,017.60, \$17,153.47
   e. \$1,685,352.10, \$17,053.64
   f. \$1,685,352.10, \$17,735.78
   g. None of the above.

ADDITIONAL SPACE IS PROVIDED FOR WORKING PROBLEM 1

2. Kenworthy Kartage Company (KKC) just paid dividends of $10.00 per share for fiscal year 2011. For fiscal years 2012 through 2014 the firm expects dividends per share to grow at a 10% compound rate from the fiscal 2011 dividends. Dividends are expected to be $14, $15, and $16 in fiscal years 2015 through 2017, respectively. After that, dividends are expected to **INCREASE** at a compound rate of 5% per year forever from the fiscal 2017 level. Stocks of similar risk yield 10%. **To the nearest penny**, what should be the price of a share of KKC stock today at the **BEGINNING** of fiscal 2012?

   a. $189.66
   b. $247.57
   c. $289.59
   d. $336.00
   e. $217.57
   f. $252.42
   g. None of the above.

ADDITIONAL SPACE IS PROVIDED FOR WORKING PROBLEM 2

3. The long-term Government of Canada bond rate is 5 percent, and the estimated risk premium on the market portfolio (sometimes called the equity risk premium) is 10 percent. Louis Racing Company (LRC) has a stock price of $100 per share today at the **BEGINNING** of its fiscal year 2012 and an estimated dividend of $10.00 per share for the forthcoming fiscal year of 2012. Dividends are expected to grow thereafter at 10 percent per year for the foreseeable future.

   Required: Use the Dividend Discount Model (i.e. Gordon constant growth model) to estimate the cost of equity k_C and then use the SML of the CAPM Model to find the beta of the stock. k_C is ____ and beta is ____.

   a. 10.00%, 1.00
   b. 10.00%, 2.00
   c. 30.00%, 2.50
   d. 30.00%, 5.00
   e. 20.00%, 1.50
   f. 20.00%, 3.00
   g. None of the above.

ADDITIONAL SPACE IS PROVIDED FOR WORKING PROBLEM 3

4. Florence and Frank Zigafoos wish to buy the home of their dreams in Manotick, Ontario. The home costs $600,000. The CIBC offers to lend them 80% of the purchase price or $480,000 at a nominal annual rate of 3.99 percent compounded semi-annually for a term of 4 years with an amortization period of 30 years. Since Florence and Frank have saved $120,000, they are considering the CIBC mortgage. Since Florence and Frank are paid semi-monthly, they elect semi-monthly mortgages payments to match the frequency of their paycheques. **To the nearest penny**, what are their semi-monthly mortgage payments? (There are **EXACTLY** 24 semi-monthly periods per year.)

   a. $5,508.50
   b. $5,409.92
   c. $1,138.95
   d. $1,155.20
   e. $5,413.76
   f. $1,143.92
   g. None of the above.

ADDITIONAL SPACE IS PROVIDED FOR WORKING PROBLEM 4