NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
FACULTY OF COMMERCE
DEPARTMENT OF FINANCE
BACHELOR OF COMMERCE HONOURS DEGREE IN FINANCE
PART IV 1ST SEMESTER FINAL EXAMINATION – APRIL 2009
INSTITUTIONAL INVESTMENT ANALYSIS [CFI 4103]
TIME ALLOWED: 3 HOURS

REQUIREMENTS
Graph paper will be provided on request.

INSTRUCTIONS
1. Attempt any Four questions..
2. Each question carries 25 marks.
3. Show all workings and write legibly.

QUESTION ONE [25 marks]

A pension fund manager is considering three mutual funds. The first is a stock fund, the second is a long-term government and corporate bond bund, and the third is a T-bill money market fund that yields a rate of 8%. The probability distribution of the risky fund is as follows:

	Expected Return	Standard Deviation
Stock Fund (S)	20%	30%
Bond Fund (B)	12	15

The correlation between the fund returns is .10.
   (a) What are the investment proportions in the minimum-variance portfolio of the two risky funds, and what is the expected return and standard deviation of its rate of return?
                                                                                            [7 marks]
   (b) Tabulate and draw the investment opportunity set of the two risky funds. Use investment proportions for the stock funds of zero to 100% in increments of 20%.
                                                                                            [12 marks]
   (c) Draw the tangent from the risk-free rate to the opportunity set. What is the slope of the line? What does your graph show for the expected return and standard deviation of the optimal portfolio?   [6 marks]

QUESTION TWO [25 marks]
Based on extensive fundamental analysis, analysts in a major trust department provide the following price and dividend outlooks for five stocks:

Stock	Current Price	Expected Price	Expected Dividend
Ash	25	27	0.50
Bell	40	42	0.50
Cida	33	39	1.00
Dish	64	65	1.10
Elmo	50	54	-

(a) Compute the estimated future rate of return that would be anticipated during this holding period. [5 marks]
(b) Given the following information on the stocks' systematic risk, determine the stocks required return and alpha values. [10 marks]

Stock	Beta
Ash	0.70
Bell	1.00
Cida	1.15
Dish	1.40
Elmo	-0.30

(c) Based on the alpha values, evaluate whether the stocks are overvalued, undervalued, or properly valued. Based on your evaluation, determine whether you would buy, hold or sell the stocks? [5 marks]
(d) What are the critical assumptions of the Capital Asset Pricing Model? [5 marks]

QUESTION THREE [25 marks]

A Bond for the Benato Corporation has the following characteristics:

Maturity	12 years
Coupon	10%
Yield to maturity	9. 5%
Noncallable	

(a) Determine the duration, modified duration and convexity of the bond. [8 marks]
(b) Calculate the approximate price change for this bond assuming its yield to maturity:
  (i) Increased by 150 basis points.
  (ii) Declined by 300 basis points. [8 marks]
(c) Explain the significance of the results in (b) above. [4 marks]
(d) What are the five bond theorems that explain the characteristics of bonds. [5 marks]

QUESTION FOUR [25 marks]

(a) Hogan Company Ltd's (HCL) latest annual dividend of $1.25 a share was paid yesterday and maintained its historic 7 percent annual rate of growth. You plan to purchase the stock today because you believe that the dividend growth rate will increase to 8 percent for the next three years and the selling price of the stock will be $40 per share at the end of that time.

    (i)   How much should you be willing to pay for the HCL stock if you require a 12 percent return?   [4 marks]

    (ii)   What is the maximum price you should be willing to pay for the HCL stock if you believe that 8 percent growth rate can be maintained indefinitely and you require a 12 percent return?   [4 marks]

    (iii)   If the 8 percent rate of growth is achieved, what will the price be at the end of year 3, assuming the conditions in part (b)?   [4 marks]

(b) You have been following the performance of Waringa Drug Company (WDC), which currently retains 90 percent of its earnings ($5 a share this year). It earns an ROE of almost 30 percent. Assuming a required rate of return of 14 percent, how would you pay for WDC on the basis of the earnings multiplier model?   [4 marks]

(c) The following results were published by Watson Corporation for the years 2005 and 2007 (All figures are in $millions).

	2005	2007
Net Income	$253.7	$239.0
Pretax Income	411.9	375.6
EBIT	517.6	403.1
Average Assets	4 857.9	3 459.7
Sales	6 679.3	4 537.0
Shareholder's Equity	2 233.3	2 347.3

Perform Dupont analysis to determine the trend in Watson`s ROE in terms of tax burden, margin, turnover, and financial leverage.   [9 marks]

QUESTION FIVE [25 marks]

(a) You are given the following data on three stocks (none of the stocks paid dividends):

	Price				Shares Outstanding		
Date	A	B	C		A	B	C
0	$40	$50	$30		100	200	300
1	22*	50	28		200	200	300
2	25	55	32		200	200	300

    * Two-for-one stock split on the first day of the period.

(i)   Use the approach followed by Dow Jones to calculate a price index on the three stocks for each period.   [4 marks]

(ii)   Now calculate a market-value-weighted index modeled after the S&P 500 Composite Index.   [4 marks]

(iii) Estimate the rate of return on each index for periods 1 and 2.   [4 marks]

(iv)   Which approach is more superior? Justify your answer.   [3 marks]

(b) The closing, high, and low prices for Omega Corporation stock over a ten-day interval are shown below.

Omega Corporation

Day	Closing Price	High	Low
1	20	21	19
2	20¼	20¼	18
3	21	22	20½
4	21⅛	22⅞	21⅛
5	21	23⅛	20
6	21¾	22	20¾
7	22	23½	20⅛
8	20⅛	22	19¼
9	19⅛	21½	19
10	18¼	21⅞	17⅛

(a) Calculate the relative strength of Omega Corporation stock versus the ZSE index over the 10-day period, given the following closing prices for the ZSE index.   [5 marks]

	Day									
	1	2	3	4	5	6	7	8	9	10
ZSE Closing Price	300	302	306	310	320	315	330	325	325	330

(b) Chart your result on a line graph and provide a brief analysis of your observations. What conclusions do you draw from the analysis.   [5 marks]

QUESTION SIX [25 marks]

Select an industry and indicate what economic series you would use to predict the growth for the industry. Discuss why the economic series selected is relevant for this industry. Discuss the state of your industry in its life cycle. Evaluate your industry in terms of the five factors that determine an industry's intensity of competition. Based on this analysis, what are your expectations about the industry's profitability in the short run (1 or 2 years) and in the long run (5 – 10 years)?   [25 marks]