

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

FACULTY OF COMMERCE
BACHELOR OF COMMERCE HONOURS DEGREE IN FINANCE
PART IV 1ST SEMESTER SUPPLEMENTARY EXAMINATION – JULY 2006
INSTITUTIONAL INVESTMENT ANALYSIS [CFI 4103]
TIME ALLOWED: 3 HOURS

INSTRUCTIONS

- ◆ ATTEMPT ANY FOUR QUESTIONS.
- ◆ ALL QUESTIONS CARRY EQUAL MARKS [25 MARKS]

QUESTION ONE (25 marks)

You have identified two portfolios of stocks which had the following returns over the past five years:

	1	2	3	4	5
Portfolio 1	10%	0%	10%	20%	10%
Portfolio 2	15%	2.5%	15%	2.5%	15%

- (a) Calculate the following measures:
- (i) The expected return for portfolio 1 and 2 [6 marks]
 - (ii) The standard deviation for portfolio 1 and 2 [8 marks]
 - (iii) The correlation coefficient between the returns of portfolio 1 and portfolio 2. [5 marks]
- (b) What is the minimum variance portfolio and what is its standard deviation? [6 marks]

QUESTION TWO (25 marks)

- (a) What are the five [5] bond theorems that specify the relationship between bond price, coupon rate, maturity and yield-to-maturity? [10 marks]
- (b) Identify and briefly explain five [5] risk factors that are likely to affect bond-fund investors as well as people holding individual bonds? [15 marks]

QUESTION THREE (25 marks)

- (a) Consider the stock of a department store in a city which is experiencing rapid population growth. Last year's dividend was equal to \$100. During the next three years this dividend is expected to grow at 12% per year owing to a combination of population growth and lack of competition. Subsequently, growth will equal the population growth of 7% a year for another five years as competition from scheduled new store openings takes hold. Finally, as

population growth slows, a long-run constant dividend growth of 3% per year is expected.

- (i) What is the intrinsic value of this security if the required return is 15%?
 - (ii) If the current market price on the stock happens to be \$1 500, would you purchase the stock? Justify your answer **[20 marks]**
- (b) Outline the factors that should be considered when choosing an investment **[5 marks]**

QUESTION FOUR (25 Marks)

- (a) The following relates to the values of a single investment over a period of five years.

<u>Year</u>	<u>Beginning Value</u>	<u>Ending Value</u>
1	\$10 000 000	12 560 000
2	12 560 000	15 900 000
3	15 900 000	16 660 000
4	16 660 000	18 720 000
5	18 720 000	20 200 000

REQUIRED

- (i) Calculate the annual HPR and HPY on the investment over each of the five years.
 - (ii) Calculate the arithmetic mean and geometric mean for each investment. **[15 marks]**
- (b) You are considering the purchase of the following bond.

<u>Maturity</u>	<u>Coupon</u>	<u>Par</u>
3 years	11% [Annual]	\$1 000

- (i) If you require a YTM of 13% on bonds of equivalent risk and maturity, what do you believe is a fair market price?
- (ii) What is the duration of this bond? [Neglect default risk and use a YTM of 12%] **[10 marks]**

QUESTION FIVE (25 marks).

During a 5-year period, the relevant results for the aggregate market are that the risk-free rate is 8 percent and the return on the market is 14%. For that period, the results of four portfolio managers are as follows:

PORTFOLIO MANAGER	AVERAGE RETURN [%]	BETA
A	13	0.80
B	14	1.05
C	17	1.25
D	13	0.90

- (a) Calculate the expected rate of return for each portfolio manager and compare the actual returns with the expected returns.
- (b) Based upon your calculations, select the manager with the best performance.
- (c) What are the critical assumptions in the capital asset pricing model [CAPM]?
- (d) What are the implications of relaxing these assumptions.

QUESTION SIX

(25 marks)

Discuss the significance of conducting the tree-step valuation process in security analysis.