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**University Examinations 2015/2016**

SECOND SEMESTER EXAMINATION FOR THE DEGREE

OF

(YEAR FOUR) BACHELOR OF SCIENCE IN ACTUARIAL SCIENCE

(YEAR THREE) BACHELOR OF COMMERCE

(YEAR THREE SEMESTER ONE) BACHELOR OF PURCHASING AND SUPPLIES MANAGEMENT

**HRD 2404: INVESTIMENT AND ASSET MANAGEMENT**

**BFC 3379: INVESTMENT ANALYSIS AND PORTFOLIO MANAGEMENT**

**DATE: APRIL 2016 TIME: 2 HOURS**

**INSTRUCTIONS:** *Answer question* ***one*** *and any other* ***two***questions.

**QUESTION ONE (30 MARKS)**

1. Explain the logic of the Arbitrage Pricing theory (APT). How does it compare and contrast with CAPM? (10 marks)
2. Juhudi and Jaribu companies have the following probability distribution of returns:

|  |  |  |  |
| --- | --- | --- | --- |
| Economic Conditions | Probability | Returns % | |
| Juhudi | Jaribu |
| High Growth | 0.1 | 32 | 30 |
| Normal Growth | 0.2 | 20 | 17 |
| Slow Growth | 0.4 | 14 | 6 |
| Stagnation | 0.2 | -5 | -12 |
| Decline | 0.1 | -10 | -16 |

**Required:**

1. Determine the expected covariance of returns (7 marks)
2. The correlation of returns between Juhudi and Jaribu companies (5 marks)
3. Cite recent examples of political, social, or economic events (market risk) that have excited first, the stock market, and secondly, the stocks in a specific industry, to surge ahead sharply. (8 marks)

**QUESTION TWO (20 MARKS)**

1. Electric power companies are often cited for the fact that they typically have betas well below 1.0. Similarly, manufacturers of recreational vehicles have betas close to 2.0. What is it about the operating characteristics (products, financing) of these two industries that might intuitively explain the wide difference in their betas? (5 marks)
2. Stocks Q and R do not pay dividends. Stock Q currently sells for Sh.50 and R for Sh.100. At the end of the year ahead there is fifty% chance that Q will sell for either sh.61 or sh.57 and R for either sh.117 or sh.113. Which stock, Q or R, would you prefer to purchase now? Why? (5 marks)
3. A funds Manager is considering the following portfolios for investment.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Portfolio | A | B | C | D | Market |
| Expected returns ∑(R) | 0.4 | 0.2 | 0.34 | 0.30 | 0.26 |
| Beta | 1.5 | 0.6 | 1.1 | 1.0 | 1.0 |
| Standard Deviation | 0.2 | 0.06 | 0.12 | 0.1 | 0.08 |

The government securities are earning a 6% rate of returns.

**Required:**

1. Compute Sharpe’s and Treynor performance measure for each of the portfolios and also the market portfolio. Indicate which are the efficient portfolios. (5 marks)
2. Rank the portfolios using each of the measures computed above. Explain any conflict of decisions.

**QUESTION THREE (20 MARKS)**

Stocks R and S display the following retunes over the past two years.

|  |  |  |
| --- | --- | --- |
| Year | Stock R | Stock S |
|  | Return (%) | Return (%) |
|  | 10 | 12 |
|  | 16 | 18 |

1. What is the expected return on a portfolio made up of 40 percent R and 60 per cent S? (4 marks)
2. What is the standard deviation of each stock? (4 marks)
3. What is the covariance of stocks R and S? (4 marks)
4. Determine the correlation coefficient of stock R and S (4 marks)
5. What is the portfolio risk of a portfolio made up of 40 per cent R and 60 per cent S? (4 marks)

**QUESTION FOUR (20 MARKS)**

Nyeri Ltd plans to invest in two projects A and B. The risk and return characteristics of the two projects are shown below:

|  |  |  |
| --- | --- | --- |
|  | A | B |
| Expected return | 12% | 20% |
| Risk | 3% | 7% |

Nyeri Ltd plans to invest 80% of its available funds in project A and 20% in B. The directors believe that the correlation coefficient between the returns of the projects is +0.1.

Required:

1. Calculate the returns from the proposed portfolio of projects A and B (4 marks)
2. Calculate the risk of the portfolio (6 marks)
3. Comment on your calculations of part (b) in the context of the risk reducing effects of diversification (5 marks)
4. Suppose the correlation coefficient between A and B was -1.0. How should Nyeri limited invest its funds in order to obtain a zero risk portfolio? (5 marks)

**QUESTION FIVE (20 MARKS)**

The government of Kenya is considering how to protect its domestic maize industry. There is only one maize miller in the country-Mahindi ltd which is coming in for severe competition from imported maize. Presently, the government is considering banning imports of maize and because that would leave Mahindi ltd with a monopoly –impose government controls on the process of maize.

As a result, you have been called in by the government to try to estimate the company’s beta value. Kenya has an active stock exchange and Mahindi limited is one of the quoted companies. The government has provided you with the following information:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Mahindi limited | | Nairobi stock Exchange | |  |
| Year | Average Share price | Dividend Yield | Average NSE Index | Average Dividend yield | Return on Government stock |
| Current | 16.42 | 10% | 1983 | 16% | 15% |
| 12 months ago | 15.50 | 12% | 1665 | 16% | 16% |
| 24 months ago | 12.10 | 8% | 1789 | 10% | 14% |
| 36 months ago | 9.50 | 10% | 1490 | 18% | 15% |

Required:

1. Estimate the beta value of Mahindi ltd (12 marks)
2. Comment on what effects you think that the government’s action might have on the riskiness of Mahindi ltd. (3 marks)
3. Explain Security Market Line (SML) with the help of a figure. How does it differ from the Capital Market Line (CML)? (3 marks)