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**University Examinations 2015/2016**

FIRST YEAR SECOND SEMESTER EXAMINATION FOR THE DEGREE OF

MASTER OF

BUSINESS ADMINISTRATION

**BFA 5229: INVESTMENT AND PORTFOLIO MANAGEMENT**

**DATE: AUGUST 2016 TIME: 3 HOURS**

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

**QUESTION ONE (30 MARKS)**

1. Explain the practical uses of the capital asset pricing model (5 marks)
2. Explain the main models used in portfolio performance appraisal (6 marks)
3. Discuss the three forms of market efficiency (9 marks)
4. CFA, an investment specialist has been entrusted with Sh.10 million by a unit trust and instructed to invest the money optimally over a two-year period. The four projects are not divisible and cannot be postponed.

The unit requires a return of 24% over the two years.

The following are details of the investment n the projects and the money market.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Initial Cost | Return over the two years | Expected standard deviation of returns over the two years |
|  | Sh. ‘000’ | % | % |
| Project 1 (P1) | 6000 | 22 | 7 |
| Project 2 (P2) | 4000 | 26 | 9 |
| Project 3 (P3) | 6000 | 28 | 15 |
| Project 4 (P4) | 6000 | 34 | 13 |

The correlation coefficients of returns over the two-years are as follows:

P1 and P2 = 0.70, P1 and P3 = 0.62, P1 and P4 = 0.56, P2 and P4 = 0.57, P3 and P4 = 0.76

Over the two-year period, the risk free rate is estimated to be 16%, the market portfolio return, 27% and the variance of the return on the market, 100%.

Required:

1. By analyzing the two-asset portfolios, evaluate how CFA should invest the Sh.10 million

(10 marks)

**QUESTION TWO (10 MARKS)**

Consider the following Four assets with the following distribution of returns.

|  |  |
| --- | --- |
| **Probability**  | **Rate of return (%)** |
| **Occurrence**  | **A** | **B** | **C** | **D** |
| 0.1 | 10.0% |  6.0% | 14.0% |  2.0% |
| 0.2 | 10.0 |  8.0 | 12.0 |  6.0 |
| 0.4 | 10.0 | 10.0 | 10.2 |  9.0 |
| 0.2 | 10.0 | 12.0 |  8.0 | 15.0 |
| 0.1 | 10.0 | 14.0 |  6.0 | 20.0 |

**Required:**

1. Compute the covariance of asset
2. A and B
3. B and C
4. B and D (3 marks)
5. Compute the correlation coefficient of the combination of assets in (a) above. (3 marks)
6. Differentiate between a future contract and a forward contract (4 marks)

**QUESTION THREE (10 MARKS)**

Mr. Kibisu is currently holding a portfolio consisting of shares of four companies quoated on the Nairobi Securities Exchange as follows:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Company | Number of Shares held | Co-efficient  | Market price per share | Expected return on equity in the next year | Proportion of investment |
|  |  |  |  | % | % |
| A | 200,000 | 1.12 | 65 | 18 | 23 |
| B | 300,000 | 0.89 | 50 | 23 | 26 |
| C | 300,000 | 0.70 | 45 | 11 | 23 |
| D | 200,000 | 1.60 | 80 | 17 | 28 |

The current market return is 14% per annum and the treasury bills yield is 9% per annum.

**Required:**

1. Calculate the risk of Mr. Kibisu’s portfolio relative to that of the market (3 marks)
2. Explain whether or not Mr. Kibisu should change the composition of his portfolio (7 marks)

**QUESTION FOUR (10 MARKS)**

1. Using a diagram, discuss seperability theorem and the interior decorator school of thought (8 marks)
2. Explain how the two approaches are applied in finance (2 marks)

**QUESTION FIVE (10 MARKS)**

The following information of investment projects is given

|  |  |  |  |
| --- | --- | --- | --- |
| **PROJECT** | **INITIAL COST** | **RECEIPTS**  | **BETA FACTOR** |
| A | 1,000,000 | 1,095,000 | 0.3 |
| B | 1,000,000 | 1,130,000 | 0.5 |
| C | 1,500,000 | 1,780,000 | 0.1 |
| D | 2,000,000 | 2,385,000 | 0.15 |
| E | 2,000,000 | 2,400,000 | 0.2 |

Risk free rate is 8% and the expected market rate of return is 15%

Required:

1. Calculate beta coefficient (1 mark)
2. Calculate the expected rate of return for each project (3 marks)
3. Evaluate the projects using CAPM (6 marks)