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**University Examinations 2016/2017**

FIRST YEAR SECOND SEMESTER EXAMINATION FOR THE DEGREE OF MASTER IN BUSINESS ADMINISTRATION

**BFA 5229: INVESTMENT AND PORTFOLIO MANAGEMENT**

**DATE: DECEMBER 2016 TIME: 3HOURS**

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

**QUESTION ONE (30 MARKS)**

1. XYZ limited has provided the following information

|  |  |
| --- | --- |
| Current value of underlying stock | Shs 21 |
| Risk free rate | 5% |
| Strike price of option | 21 |
| Option time period | 3 months |
| Variance of the rate of return on the stock | 0.09 |

**Required:**

1. Discuss factors that would affect the value of a call option (5 marks)
2. Using Black and scholes option valuation model, compute the value of the option

(8 marks)

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b. Four assets have 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 10.0 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 expected return and standard deviation of each asset. (5 marks)
2. Compute the covariance of asset
3. A and B
4. B and C
5. B and D (6 marks)
6. Compute the correlation coefficient of the combination of assets in b above(6 marks)

**QUESTION TWO (15 MARKS)**

1. Explain the differences between future and forward contracts (3 marks)
2. On 1st march 2011 a Kenyan importer purchased goods from USA worth 120,000 dollars to be paid two months later on 30th April 2011

Kenya shillings futures are available in the money market and can be bought in blocks of ksh 100,000 and each future contract costs ksh.1,000

Spot exchange rate on 1st march 2011 was:

Ksh 76.5=1 US dollar

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Exchange rate on 30th April 2011 Ksh 79.50=1 US dollar and the exchange rate at which the futures were closed out was Ksh 77.5 = 1 US dollar

**Required:**

Compute the net loss or gain of using the future contract (7 marks)

**QUESTION THREE (15 MARKS)**

1. Explain the main measures of portfolio performance (3 marks)
2. An investor four has the following portfolios

|  |  |  |
| --- | --- | --- |
| Portfolio | Expected return | Standard deviation |
| 1 | 19 | 8 |
| 2 | 25 | 12 |
| 3 | 16 | 6 |
| 4 | 32 | 16 |
| 5 | 22.5 | 10 |
| 6 | 8 | 2 |
| M | 12 | 4 |

1. Rank the above portfolios in their order of performance (3 marks)
2. Indicate what should be the standard deviation for portfolios not performing well

(2 marks)

1. Indicate what should be the expected return for portfolio underperforming

(2 marks)

**QUESTION FOUR (15 MARKS)**

1. Security returns depend on only three risk factors-inflation, industrial production and the aggregate degree of risk aversion. The risk free rate is 8% the required rate of return on a portfolio with unit sensitivity to other factors is 13.0% the required rate of return on a portfolio with unit sensitivity to industrial production and zero sensitivity to inflation and other factors is 10%

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and the required return on a portfolio with unit sensitivity to the degree of risk aversion and zero sensitivity to other factors is 6%. Security i has betas of 0.9 with the inflation portfolio, 1.2 with the industrial production and -0.7 with risk bearing portfolio-(risk aversion)

Assume also that required rate of return on the market is 15% and stock i has CAPM beta of 1.1

**Required:**

Compute security i’s required rate of return using CAPM and APM (4 marks)

1. With an aid of a diagram explain seperability theory and the interior decorator school of thought (4 marks)
2. Explain the assumptions of capital asset pricing model (2 marks)

**QUESTION FIVE (15 MARKS)**

1. A stock market has no memory. Discuss this statement in the context of efficient market hypothesis (1 mark)
2. Explain the main forms of market efficiency (3 marks)
3. 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%

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**Required:**

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

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