



# MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

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## University Examinations 2023/2024

THIRD YEAR SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF COMMERCE AND BACHELOR OF PURCHASING AND SUPPLIES MANAGEMENT

**BFC 3379/BFC 3376: INVESTMENT ANALYSIS AND PORTFOLIO MANAGEMENT**

DATE: APRIL 2024

TIME: 2 HOURS

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

### QUESTION ONE (30 MARKS)

- a) Mr. Kiambati has 10,000,000 shillings which he wishes to invest in securities of company X and Y. The following probability distribution of returns relates to company X and Y over different economic conditions.

Economic condition	probability	Return (%)	
		X	Y
High Growth	0.15	50	38
Moderate Growth	0.2	30	25
Slow Growth	0.35	20	10
Stagnation	0.2	-10	-16
Decline	0.1	-15	30

### Required:

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- i. Determine the expected returns associated with returns of company X and company Y (4 marks)
  - ii. Determine the risk associated by returns of company X and company Y (6 Marks)
  - iii. Determine the risk and return of the portfolio formed assuming sh.7,000,000 are invested in company Y. (8 Marks)
- b. Clearly elucidate the main features of an investment (8 Marks)
- c. Write short notes on degree of co-movement (4 Marks)

### QUESTION TWO (20 MARKS)

Gakoromone Limited is an all equity financed company with a cost of capital of 18.5%. The Company is considering the following-capital investment projects:

Project	Initial outlay Sh. '000'	Expected cash flows in one year. Sh. '000'	Beta
A	1000	1095	0.3
B	1000	1130	0.5
C	1500	1780	1
D	2000	2385	1.5
E	2000	2400	2.0

The risk free rate is 8% and the expected return on an average market portfolio is 15%.

#### Required:

- i) Using the Capital Asset Pricing Model (CAPM), show the projects that are- acceptable. (10 marks)
- ii) Gakoromone limited beta factor. (2 marks)
- iii) Show the projects that would be accepted and rejected if they were discounted at the Firm's cost of capital. (8 marks)

### QUESTION THREE (20 MARKS)

- a. Security i 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 inflation and zero-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% 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

- i. CAPM (4 marks)
- ii. APT (6 marks)
- b. Explain the main difference between CAPM and Portfolio Theory (10 marks)

**QUESTION FOUR (20 MARKS)**

The following information relates to the performance of six portfolios over a seven-year period:

Portfolio	Average annual returns (%)	Standard deviation of the average annual returns (%)	Correlation with market returns
P	18.6	27	0.81
Q	14.8	18	0.65
R	15.1	8	0.98
S	22	21.2	0.75
T	-9	4	0.45
U	26.5	19.3	0.63
Market return	12	12	
Risk-free rate	9		

**Required:**

Rank the performance of the above portfolios using:

(i) Sharpe's method (6 marks)

(ii) Treynor's method (10 marks)

(c) Compare the rankings using the two methods in (b) above and explain two reasons behind the differences. (4 marks)

**QUESTION FIVE (20 MARKS)**

a) Explain the Implications of efficient market hypothesis (EMH) to financial decision makers (10 marks)

b) Capital market has no memory. Discuss. (5 Marks)

c) Explain the "mean-variance Rule". (5 Marks)