The Co-operative University of Kenya

SPECIAL / SUPPLEMENTARY EXAMINATION AUGUST -2022

EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN FINANCE, COMMERCE AND CO-OPERATIVE BUSINESS

(YR III SEM II)

UNIT CODE: BFIN 3207

UNIT TITLE: PORTFOLIO AND INVESTMENT ANALYSIS

DATE: 3RD AUGUST, 2022 **TIME: 8:30 AM – 10:30 AM**

INSTRUCTIONS:

- Answer question **ONE (compulsory)** and any other **TWO** questions

QUESTION ONE

(a) How does the efficient frontier change, when the possibility of lending and borrowing at the risk-free rate is introduced? (6 marks)

(b) Consider two stocks X and Y

Stock	*Expected Return (%)*	*Standard Deviation (%)*
X	16	25
Y	18	30

The returns of the stock are perfectly negatively correlated

What is the expected return of a portfolio constructed to drive the standard deviation of portfolio returns to zero? (4 marks)

(c) Explain the Dow theory (3 marks)

(d) You can earn a return of 15 percent by investing in equity shares on your own. You are considering a recently announced equity mutual fund scheme where the entry load is 1 percent and the recurring expenses is expected to be 2 percent. How much should the mutual fund scheme earn to provide a return of 15 percent to you? (3 marks)

(e) Explain the key steps involved in portfolio management (6 marks)

(f) Explain the equilibrium risk-return relationship according to the Arbitrage Pricing Theory (4 marks)

(g) The current dividend on an equity share of National Oil Limited is Ksh 5.00. The present growth rate is 50 percent. However, this will decline linearly over a period of 8 years and then stabilize at 10 percent. At what value would you be willing to purchase a share of National Oil Limited if your required rate of return is 18 percent? (4 marks)

QUESTION 2

(a) The returns on the equity stock of EA Cables Limited and the market portfolio over an 11-year period are given below:

Year	*Return on EA Cables (%)*	*Return on Market Portfolio (%)*
1	15	12
2	-6	1
3	18	14
4	30	24
5	12	16
6	25	30
7	2	-3
8	20	24
9	18	15
10	24	22
11	8	12

Required:

i. Calculate the beta for the stock of EA Cables Limited (6 marks)

ii. Establish the characteristic line for the stock of EA cables Limited (4 marks)

(b) Vick's Limited earnings and dividends have been growing at a rate of 18 percent per annum. This growth is expected to continue for 4 years. After that the growth rate will fall to 12 percent for the next four years. Thereafter, the growth is expected to be 6 percent forever. If the last dividend per share was KSh 2.00 and investors' required rate of return on Vick's equity is 15 percent, what is the intrinsic value per share? (10 marks)

QUESTION 3

Consider the following information for three mutual funds A, B & C and the market.

Mutual	*Mean Return (%)*	*Standard Deviation (%)*	*Beta*
A	12	18	1.1
B	10	15	0.9
C	13	20	1.2
Market Index	11	17	1.0

The mean risk-free rate is 6 percent.

Required:

(a) Compute the Sharpe measure for each portfolio (6 marks)

(b) Compute the Treynor measure for each portfolio (6 marks)

(c) Commute the Jensen measure for each portfolio (6 marks)

(d) Explain any differences (2 marks)

QUESTION 4

(a) Industry analysis is very important in investment analysis and portfolio management. Discuss the key factors you would look at while studying the characteristics of an industry (10marks)

(b) Explain the techniques of moving averages and expound on the buy/sell signals provided by it (10 marks)

QUESTION 5

(a) Show how the capital market line is a special case of the security market line (10 marks)

(b) Consider the following information about two stocks (X and Y) and two common risk factors (1 and 2):

STOCK	$\boldsymbol{b_{i1}}$	$\boldsymbol{b_{i2}}$	**E(R$_i$)%**
D	1.2	3.4	13.1
E	2.6	2.6	15.4

Required:

i. Assuming that the risk-free rate is 5.0%, calculate the levels of the factor risk premia that are consistent with the reported values for the factor betas and the expected returns for the two stocks (3 marks)

ii. You expect that in one year the prices for Stocks X and Y will be $55 and $36, respectively. Also, neither stock is expected to pay a dividend over the next year. What should the price of each stock be today to be consistent with the expected return levels listed at the beginning of the problem? (3 marks)

iii. Suppose now that the risk premium for Factor 1 that you calculated in Part a suddenly increases by 0.25% (i.e., from x % to (x + 0.25) %, where x is the value established in Part *i*). What are the new expected returns for Stocks X and Y? (2 marks)

iv. If the increase in the Factor 1 risk premium in Part c does not cause you to change your opinion about what the stock prices will be in one year, what adjustment will be necessary in the current (i.e., today's) prices? (2 marks)