KASNEB

CIFA PART II SECTION 4

PORTFOLIO MANAGEMENT

PILOT PAPER

September 2015. **Time Allowed: 3 hours.**

Answer any FIVE questions. **ALL questions carry equal marks.**

QUESTION ONE

(a) Briefly explain the drawbacks of the following composite measures of portfolio performance:

(i) Trenor's measure. (2 marks)

(ii) Sharpe's measure. (2 marks)

(iii) Jensen's measure. (2 marks)

(b) Critically evaluate the assumptions of the capital asset pricing model. (4 marks)

(c) Orbit Ltd. is considering two investments; A and B. The risk return characteristics of the two projects are shown below:

	Project A	Project B
	%	%
Expected return	14	18
Risk (Standard deviation)	6	8

The company plans to invest 80% and 20% of its available funds in Project A and B respectively. The correlation coefficient of returns between Project A and B is 0.5

Required:

(i) The expected return from the proposed portfolio comprising of Project A and B. (2 marks)

(ii) The total risk of the portfolio. (2 marks)

(iii) Suppose the correlation coefficient between Projects A and B is -1. Determine how the company should invest its funds in order to obtain zero portfolio risk. (4 marks)

(d) The following information relates to securities X and Y which lie on the Security Market Line (SML):

Security	Required rate of return	Beta coefficient
X	18%	1.0
Y	22%	1.5

Required:

Determine the risk free rate of return. (2 marks)

(Total: 20 marks)

QUESTION TWO

(a) Assuming that you work for an investment and financial analyst at Elite Investors. The portfolio manager provides you with the following annual rates of return for a portfolio and the relevant benchmark index for the years 2010 to 2014:

Year	Portfolio return (%)	Benchmark return (%)
2010	13	15
2011	15	11
2012	21	13
2013	15	17
2014	17	14

Required:

(i) The tracking error for the portfolio. (5 marks)

(ii) Appraise three ways in which the tracking error in a (i) above could have arisen. (3 marks)

(b) Amos Odongo is reviewing the performance of his largest asset, Fair Mutual fund for the month of December 2014. He obtained the following data to undertake the task:

	Fair Mutual fund	Market
Expected return (%)	14	12
Beta coefficient	1.2	1.0
Standard deviation (%)	28	26

The return on government treasury bonds is 5%.

Required:

(i) Evaluate the performance of the fund using:

(a) Trenor's ratio. (3 marks)

(b) Sharpe's measure. (3 marks)

(c) Jensen's (Alpha) measure. (3 marks)

(ii) Explain whether Fair Mutual outperformed the market using the results obtained in (b) (i) above. (3 marks)

(Total: 20 marks)

QUESTION THREE

(a) In relation to portfolio management, explain the meaning of the following terms:

(i) Passive portfolio management. (2 marks)

(ii) Active portfolio management. (2 marks)

(iii) Tactical asset allocation. (2 marks)

(b) Explain the term "window dressing" as used in portfolio management. (2 marks)

(c) An investment adviser is counselling Stephen Gerald, a client who recently inherited Sh.12,000,000 and has above average risk tolerance ($R_A = 2$). Because Gerald is young and one of his purposes is to fund a comfortable retirement, he wants to earn returns that will outpace inflation in the long term. Gerald expects to liquidate Sh.600,000 of the portfolio in 12 months, however, to make a down payment on a house. If that need arises, he states that it is important for him to be able to take out the Sh.600,000 without affecting the initial capital of Sh.12,000,000.

The following are the three alternative strategic asset allocations available to him:

	Investor's forecasts	
Asset Allocation	**Expected return**	**Standard deviation of return**
A	10	20
B	7	10
C	5.25	5

Required:

(i) Based only on Gerald's risk adjusted expected returns for asset allocations, identify the asset allocation that he would prefer. (5 marks)

(ii) Given Gerald's desire not to affect the Sh.12,000,000 principal, determine the shortfall level. (3 marks)

(iii) According to Roy's safety first criterion, identify the best of the three strategic asset allocation. (3 marks)

(iv) Recommend a strategic asset allocation for Gerald. (1 mark)

(Total: 20 marks)

QUESTION FOUR

(a) Define the term 'portfolio upgrading' clearly stating any two principle objectives of portfolio upgrading. (4 marks)

(b) (i) Explain the term 'money weighted rate of return". (2 marks)

(ii) Explain the following terms in relation to active bond portfolio management strategies:

(a) Barbell strategy. (2 marks)

(b) Bullet strategy. (2 marks)

(c) Laddered strategy. (2 marks)

(c) The policy committee of Kubwa Investment Ltd. uses reports from various security analysts to develop inputs for the single index model consisting of the following efficient portfolios:

Portfolio	**Expected return**	**Standard deviation of return**
	%	**%**
A	9	4
B	11	7
C	14.5	5.2
D	18	11
E	21	19

The probability distribution of the market return is given as follows:

Probability	**Market return**
0.2	15
0.3	10
0.4	20
0.1	5

Required:

(i) The optimal portfolio at a risk free rate of 7%. (6 marks)

(ii) The required portfolio return at a standard deviation of 12%. (2 marks)

(Total: 20 marks)

QUESTION FIVE

(a) On 1 January 2014, Peter Njuguna, a Kenyan investor, invested 500,000 Kenya Shillings (KSh.) by buying shares in Ugandan Securities Exchange (USE) at Uganda Shillings (USh.) 30 per share.

Additional information:

1. The current spot rate (1 January 2014) was USh. 32/1KSh. and on 30 September 2014 the rate was USh.28/1KSh.
2. The market price per share on 30 September 2014 was USh.35.

Required:

(i) The total return on the investment as at 30 September 2014. (4 marks)

(ii) Comment on the relationship between the share price and foreign exchange rate based on your result in (a) (i) above. (2 marks)

(iii) In the context of behavioural finance, explain Festinger's theory of financial cognitive dissonance. (4 marks)

(b) Dani Kwendo, an investment specialist has been entrusted with Sh.10 million by a unit trust and instructed to invest the money optimally over a 2 year period. Part of the instructions are:

1. The funds be invested in one or more of the four specified projects and in the money market.

2. The four projects are not divisible and cannot be postponed.

3. The unit trust requires a return of 24% over the two year period.

The following are the details of the investment in the projects and the money market:

	Initial cost	**Return over the two years**	**Expected standard deviation of return over the two years**
	KSh. ('000')	**%**	**%**
Project 1 (P_1)	6,000	22	7
Project 2 (P_2)	4,000	26	9
Project 3 (P_3)	6,000	28	15
Project 4 (P_4)	6,000	34	13
Money Market (MM)	1,000 (minimum)	18	5

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

Between projects	**Between projects and market portfolio (mp)**	**Between projects and money market (mm)**	**Between money market and portfolio (mp)**
P_1 and P_2 = 0.7	P_1 and mp = 0.68	P_1 and mm = 0.4	mm and mp = 0.4
P_1 and P_3 = 0.62	P_2 and mp = 0.65	P_2 and mm = 0.45	
P_1 and P_4 = 0.56	P_3 and mp = 0.75	P_3 and mm = 0.55	
P_2 and P_4 = 0.57	P_4 and mp = 0.88	P_4 and mm = 0.6	
P_3 and P_4 = 0.76			

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

Required:

(i) Using portfolio theory, evaluate how Dan Kwendo should invest Sh.10 million. (5 marks)

(ii) Determine the beta coefficients and the required rate of returns for the portfolio. (2 marks)

(iii) Apply the capital asset pricing model (CAPM) to evaluate how Dan Kwendo should invest the Sh.10 million. (3 marks)

(Total: 20 marks)

.....