CHUKA UNIVERSITY

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF MASTER OF SCIENCE IN FINANCE

MSCF 815: SECURITIES AND INVESTMENTS MANAGEMENT

STREAMS: MSCF **TIME: 3 HOURS**
DAY/DATE: FRIDAY 09/7/2021 **8.30 A.M. – 11.30 A.M.**

INSTRUCTIONS: Answer question ONE and any other TWO

QUESTION ONE

(a) The basic objective of portfolio management is to maximize interest returns and minimize risk. However, there are other auxiliary objectives as per the needs of each individual investor. Highlight four auxiliary needs of each individual investor.

[4 marks]

(b) Propose six measures that a portfolio management firm could establish to ensure that its portfolio managers remain independent and objective while undertaking their duties

[6 marks]

(c) You are given the following information

Project	Capital cost	Expected return	Standard deviation (%)
A	4,000,000	10%	2.4
B	6,000,000	19%	1.9
C	5,000,000	14%	2.6
D	3,000,000	12%	1.7

The members of Faidika investment scheme have contributed a capital khs 9,000,000 for investment purposes. The management of the scheme intends to invest the fund in either of the following capital projects

Project combination	Covariance
AB	3.2
AC	1.2
AD	-3.9
BC	1.4
BD	1.6
CD	-2.5

Additional information:

(i) None of the project is divisible
(ii) The investment scheme is not able to access any additional finance

Required

(i) Portfolio return [4 marks]
(ii) Correlation coefficient [4 marks]
(iii) Standard deviations of each of the project combinations within the budget limit [6 marks]

(e) Explain the following investor personality type that could offer an insight to a portfolio manager when predicting investor risk taking appetite and their decision making styles

(i) Cautions investors [1 mark]
(ii) Methodical investors [1 mark]
(iii) Spontaneous investors [1 mark]
(iv) Individualistic investors [1 mark]

(f) An investor is considering 3 assets AB and C to include in a portfolio. The performance of the assets over the last 3 periods is as shown below:

Asset A		Asset B		Asset C	
Period	Return (%)	Period	Return (%)	Period	Return (%)
1	8	1	20	1	15
2	12	2	14	2	15
3	10	3	8	3	15

Assume that the investor decides to invest in the 3 assets in equal proportions

Required:

Calculate the portfolios

(i) Return [3 marks]
(ii) Standard deviation [9 marks]

QUESTION TWO

(a) Explain the differences between "mutual funds" and "exchange funded funds (EFFs) with reference to pooled investment products [6 marks]

(b) The following information relates to returns of security X and security Y over a five year period

	Reruns (%)	
Year	Security X	Security Y
2012	10	20
2013	20	30
3014	30	50
3-15	40	40
3016	50	60

Required:

(i) The securities beta [3 marks]
(ii) The securities alpha [2 marks]
(iii) Residue variance [2 marks]
(iv) Inteprete the results obtained in the above calculations [3 marks]

QUESTION THREE

(a) Explain five items that could be included in a framework for a disciplined approach to setting capital market expectations [5 marks]

(b) Terry is an investment officer with a large pension plan. Her supervisor is thinking about investing in an enhanced index product forecast in a Kenyan equity benchmark against the index. He asks Terry to investigate the various alternative approaches. The figure below represents her findings

	Expected alpha	Tracking risk
Stock based semi-active	1.2%	2.7%
Derivative base semi-active	1.0%	2.1%

Required:

Recommend and justify a semi-active approach for the pension plant [6 marks]

(c) Discuss four techniques for managing credit risk [4 marks]

QUESTION FOUR

(a) Jose Kigen, aged 40 years is a manager at a public limited company. He plans to retire at the age of 55 years. He is a divorce and a father of teenage children. He intends to find a dedicated trust to provide for his children's needs until they reach the age of 25 years. He will require ksh 2.5 m in the next few months to fund the first.

Jose Kigen's income tax rate is 30%. Other than cash reserve, he holds investment assets in a tax exempt account with a current value of ksh 9 million. He saves ksh 250,000 of his after tax income annually to the account and plans to do so until retirement. His next contribution will be made in one years' time. As part of his normal expenses, he provides ksh 300,000 annual contributions to St. Elizabeth's children home. When he retires in 15 years' time, he plans to purchase a 25 year annuity that pays kshs 1 million after tax annually. He will need kshs 16 million at retirement to fund the annuity. He expects the annual payout to be sufficient all his needs on an inflation adjusted basis. He does not plan to leave any estate at the time of his death.

Required:

(i) The required annual return that would enable Jose Kigen to purchase the retirement annuity at the age of 55 years. All cash flows occur at the end of each period. [6 marks]
(ii) Discuss four reasons that would make Jose Kigen's ability to take risk to be considered above average [4 marks]

(iii) The investment policy statement serves as a governing document for most investment decisions. It should identify the objectives and operational constraints on the investment portfolio. Discuss five categories of portfolio constraints
[5 marks]

QUESTION FIVE

(a) You have recently been appointed as the chief investment officer of a major investment advisory firm in your county. Martin a high net worth client has approached your firm seeking to invest sh 100 million

Required:

Evaluate the four steps in the portfolio management process that you are expected to follow while investing the client's money. [4 marks]

(b) Ahmed had decided to invest ksh 1 million by purchasing shares of two companies namely ABC ltd and XYZ ltd. the projections of returns from the shares of the two companies along with their probabilities are as follows:

	Return projections	
Probability	ABC Ltd	XYZ Ltd
0.20	12	16
0.25	14	10
0.25	-7	28
0.30	28	-2

Required:

The proportion of each of the above shares required to formulate the minimum risk portfolio [11 marks]
