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# KIRIRI WOMENS' UNIVERSITY OF SCIENCE AND TECHNOLOGY

FOURTH YEAR, SECOND SEMESTER EXAMINATION
FOR THE DEGREE OF BACHELOR OF SCIENCE
(BUSINESS ADMINISTRATION)

Date: 7th December, 2023
Time: 2.30pm –4.30pm

## KFI 406 - INVESTMENT ANALYSIS 11

**INSTRUCTIONS TO CANDIDATES**

ANSWER **QUESTION ONE (COMPULSORY)** AND **ANY OTHER TWO** QUESTIONS

**QUESTION ONE (30 MARKS)**

a) NEXT is the Nairobi Securities Exchange derivatives market that facilitates the trading of futures contracts in the Kenyan market. It is regulated by the Capital Markets Authority. The NEXT market is grossly underdeveloped in Kenya, despite the continuous growth of derivatives trading in other major markets around the world. This has partially been blamed on poor structural facilities, inaccessibility to trading platforms, poor trading systems, weak trading rules and non-existence of a central counterparty among others. However, despite these challenges, there are investors still interested in this market, one of them being Antony, an amateur trader who likes to trade securities during his free time. Antony is considering buying a contract worth Kes. 2,200 today. The risk-free rate is 7% and she expects to hold it for a period of 6 months. 3 months after buying the contract, she notices that the spot rate has changed to Kes. 2,240 and that the risk-free rate has also changed to 8.5%.

i) Calculate to determine whether he should sell the contract or continue holding onto it.
(6 marks)

ii) Advise Antony on the various applications of derivatives that could explain why NEXT participants engage in derivative trading.
(6 marks)

b) The Black-Scholes Options Pricing model is commonly used in the valuation of options. However, it relies on certain assumptions that enhance its validity. Outline three assumptions of this model.
(6 marks)

c) The "beta" is a measure of risk commonly used in portfolio analysis. Highlight three applications of the beta.
(6 marks)

d) When creating portfolios, one should know how the returns of the various assets contained relate to each other. This relationship is determined using various measures which give different output. As such, discuss the difference between the covariance and the correlation coefficient and their relevance to an investor when making investment decisions.
(6 marks)

## QUESTION TWO (20 MARKS)

a) You are an investment analyst working for a financial advisory firm. A client, Mr. Johnson, has approached your firm seeking advice on building an investment portfolio. He has a moderate risk tolerance and is looking for a balanced portfolio that can provide reasonable returns while managing risk.

Mr. Johnson is considering investing in three assets:

1. A blue-chip stock with a historical average annual return of 8% and a standard deviation of 12%.
2. A corporate bond with an average annual return of 5% and a standard deviation of 5%.
3. An investment in a diversified mutual fund with an average annual return of 7% and a standard deviation of 10%.

Your task is to help Mr. Johnson construct a portfolio with these assets and analyze its risk and return profile. Provide a detailed investment recommendation and explain the rationale behind your choice.

(6 marks)

b) The interest rates placed on bonds are subject to their maturities and risk profiles and this relationship is adequately described through yield curves. With the help of appropriate diagrams, illustrate three yield curves that describe this relationship.

(10 marks)

c) Wilson is considering purchasing a forward contract with a market price of Kes. 1,000,000 today. The prevailing T-bill rate as per the CBK is 9.5%. If he is considering a 9-month forward contract on the asset, calculate the intrinsic value of the forward contract.

(4 marks)

## QUESTION THREE (20 MARKS)

a) Term structure of interest rates explains the relationship between bond maturity and returns and various scholars have come up with several theories to justify this relationship and the movement of interest rates in this regard. As such, briefly discuss three theories of term and risk structure of interest rates.

(10 marks)

b) During the analysis of potential investments, an investor should obtain full information about an asset including the firm's operating environment. With the help of a diagram, dicuss the lifecycle of an industry, clearly identifying the key characteristics unique to each stage.

(10 marks)

## QUESTION FOUR (20 MARKS)

The following information on assets "J" and "Z" is available.

| Chance of getting good returns | | Returns of Asset J | Returns of Asset Z |
|---|---|---|---|
| Very high | 10% | 40% | -12% |
| High | 20% | 35% | 25% |
| Moderate | 40% | 35% | 35% |
| Low | 20% | 25% | 40% |
| Very low | 10% | -12% | 45% |

Required:

i) Calculate the expected returns of assets "J" and "Z". (4 marks)

ii) Calculate the standard deviation of assets "J" and "Z". (6 marks)

iii) Calculate the expected return of a portfolio comprising 60% asset "J" and 40% asset "Z". (3 marks)

iv) Calculate the standard deviation of the portfolio and interpret. (7 marks)

**QUESTION FIVE (20 MARKS)**

a) You are a portfolio manager at a financial institution responsible for managing a portfolio of bonds. The market conditions are uncertain, and interest rates have been fluctuating. Your client, an institutional investor, seeks your expertise in bond management strategies to maximize returns while managing risk. Provide a comprehensive bond management strategy recommendation for your client. (8 marks)

b) You are a financial analyst working for an investment firm. Your client is considering an investment in a specific stock and has asked for your technical analysis of the stock's price chart. The client wants to know whether it's a good time to buy or sell the stock based on your analysis. The stock in question is Company XYZ, which operates in the technology sector. Using any two relevant tools to provide a detailed technical analysis of Company XYZ's stock price chart and recommend whether to buy, sell, or hold the stock. (6 marks)

d) Forward and futures contracts are two of most commonly traded derivatives in most financial markets. Describe instances when these two instruments differ. (6 marks)