MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

P.O. Box 972-60200 – Meru-Kenya.
Tel: +254(0) 799 529 958, +254(0) 799 529 959, +254 (0)712 524 293
Website: www.must.ac.ke Email: info@mucst.ac.ke

UNIVERSITY EXAMINATIONS 2024/2025

FIRST YEAR FIRST SEMESTER EXAMINATION FOR DEGREE OF MASTERS OF SCIENCE IN FINANCE

BFS 5151: DERIVATIVE ANALYSIS AND INVESTMENT RISK MANAGEMENT

DATE: DECEMBER 2024 **TIME: 3 HOURS**

INSTRUCTIONS: Answer Question ONE and any other THREE questions.

QUESTION ONE (24 MARKS)

a) Explain the term systematic risks and give examples (10 marks)

b) A Kenyan company has agreed to sell goods to an importer in Zedland at an invoiced price of Z 150,000 (Zed (Z) is the currency of Zedland). Of this amount, Z 60,000 will be payable on shipment, Z 45,000 one month after shipment and Z 45,000 three months after shipment.

The quoted foreign exchange rates (Z per KSh.) at the date of shipment as as follows:

Spot	1.690	-	1.692
One month	1.687	-	1.690
Three months	1.680	-	1.684

The company decides to enter into appropriate forward exchange contracts through a bank in order to hedge these transactions.

Required:

i. State the advantages of hedging in this way. (6 marks)

ii. Calculate the amount in Kenya Shillings that the Kenyan Company would receive. (8 marks)

QUESTION TWO (12 MARKS)

a) Explain the three forms of informationally efficient capital markets. (6 marks)

b) Distinguish between call and put options (6 marks)

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QUESTION THREE (12 MARKS)

The purpose of long-term foreign exchange management is not to cover a given foreign exchange exposure by dealings on the forward markets, but to minimize and, if possible, eliminate such exposures before they become critical and therefore costly to cover. (Source: Havard Business Review — March/April 1977)

Required:

Comment on the above statement and suggest what actions the financial manager should take in both the long and short term in order to reduce risks from foreign currency transactions. (12marks)

QUESTION FOUR (12 MARKS)

a) Explain the following terminologies as used in derivative markets

i. Derivative Instrument (2marks)

ii. Value at Risk (2marks)

iii. Behavioral Risks (2marks)

b) Discuss Identify and explain three methods of handling risks in capital budgeting (6 marks)

QUESTION FIVE (12 MARKS)

Briefly discuss the meaning and importance of the terms ‘delta', 'theta' and ‘vega’ (also known as kappa or lamba) in option pricing (4 marks)

Assume that your company has invested in 100,000 shares of Unglow plc, a manufacturer of light bulbs. You are concerned about the recent volatility in Unglow's share price due to the unpredictable weather in the United Kingdom. You wish to protect your company's investment from a possible fall in Unglow's share price until winter in three months' time, but do not wish to sell the shares at present. No dividends are due to be paid by Uniglow during the next three months.

Market data:

Uniglow's current share price: Sh.20

Call option exercise price: Sh.20

Time to expiry: 3 months

Interest rates (annual): 6%

Volatility of Uniglow's shares 50% (standard deviation per year)

Assume that option contracts are for the purchase or sale of units of 1,000 shares.

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Required:

Devise a delta hedge that is expected to protect the investment against changes in the share price until winter. Delta may be estimated using $N(d_1)$. (8 marks)

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