KABARAK UNIVERSITY

UNIVERSITY EXAMINATIONS
2009/2010 ACADEMIC YEAR

FOR THE DEGREE OF BACHELOR OF COMMERCE

COURSE CODE: **FNCE: 423**

COURSE TITLE: **OPTIONS AND FUTURES MARKETS**

STREAM: **Y4S2**

DAY: **MONDAY**

TIME: **2:00 – 4:00 P.M.**

DATE: **22/03/2010**

INSTRUCTIONS

This paper contains FIVE questions:

1. Question **ONE** is compulsory
2. Answer any other **THREE** questions from the rest of the questions
3. Be clear and neat
4. Begin a new question on a new page

PLEASETURNOVER

QUESTION ONE

a) Explain the differences between speculation and arbitrage as used in derivatives markets (6 marks)

b) Differentiate between a put premium and call premium clearly pointing out why investors incur such costs (5 marks)

a) An investor is interested in a European call option on a share that does not pay dividends. The call option has 5 years left to expiration. The share is currently selling at \$ 250. The volatility (standard deviation) of the share is estimated as 60 percent per annum while the exercise price of the call option is \$ 100. The risk free rate is assumed to be 10 percent per annum.

(i) If the value of the call option is \$ 150, advice the investor whether to invest in this call option or not (11 marks)

(ii) Calculate the value of the put option in the scenario above (3 marks)

Note B-S Model

$C_0 = S_0N(d_1) - Ee^{-rt} N(d_2)$

Where:

$d_1 = \{In (S/E) + (r + ½\delta^2)t\}/\sqrt{\delta^2 t}$

$d_2 = d_1 - \sqrt{\delta^2 t}$

And

$P_0 = C_0 - S_0 + Ee^{-rt}$

QUESTION TWO

a) Discuss the methods that are available to an investor who would like to invest in the futures market (6 marks)

b) With relevant examples, show the meaning of taking a long position and a short position in forward contracts (6 marks)

c) Explain the difference between variation margin and maintenance margin (3 marks)

QUESTION THREE

a) Discuss the risks inherent in currency swaps (7 marks)

b) Kogello International, a Kenyan firm, is considering a swap arrangement with a UK firm. By the time the swap is being negotiated, the £ is worth Kshs 120. Further, the notional amounts are Kshs. 12 million and £ 100,000 with a tenor of 5 years.

The Kenyan 5 year fixed interest rate is 9% and the U.K. firm promises to pay this fixed rate. On the other hand, Kogello International promises to pay one-year LIBOR flat, which is currently 7.5%.

Required:

If the LIBOR rates at years 1, 2, 3, 4 and 5 are 8.25, 8.550%, 7.65%, 10.25% and 9.75% respectively, prepare the cash flows for the plain vanilla currency swap in the above scenario (8 marks)

QUESTION FOUR

a) "Forwards are zero sum games". Explain the meaning of this statement in the trading of derivatives (5 marks)

b) Bwana Investor (BI), an upcoming investor, is considering an option on a share that is currently selling at $ 35. Knowing about options, he has chosen to buy a put option on this share with an exercise price of $ 35 and a premium of $3.

Required

(i) Calculate BI's break even point on this option investment? (2 marks)

(ii) If at expiration the stock price is $ 40, what is BI's percentage return on this investment (2½ marks)

(iii) Show BI's total profits/losses in this investment if perspective stock is selling for $ 42 at the expiration date (3 marks)

(iv) What is the percentage return on the option investment if perspective stock is selling for $30 at the expiration date (2½ marks)

QUESTION FIVE

a) "Swap markets are vital for the current business world."

Discuss the above statement pointing the limitations of such markets (10 marks)

b) With reference to interest rate swaps, differentiate between callable swaps and Putable swaps (5 marks)