Great Zimbabwe University

MUNHUMUTAPA SCHOOL OF COMMERCE

DEPARTMENT OF BANKING AND FINANCE

MAIN PAPER

BACHELOR OF COMMERCE	PART 2 SEMESTER 2
COURSE	DERIVATIVE SECURITIES
CODE	HBF 226
DURATION	3 HOURS
DATE	2024

INSTRUCTIONS TO CANDIDATES

1. THE PAPER COMPRISES 5 QUESTIONS.
2. YOU ARE REQUIRED TO ANSWER ANY FOUR QUESTIONS.
3. BEGIN THE ANSWER TO EACH QUESTION ON A FRESH PAGE OF THE ANSWER BOOKLET.
4. NON-PROGRAMMABLE SCIENTIFIC CALCULATORS ARE ALLOWED INTO THE EXAMINATION.
5. CANDIDATES WILL OBTAIN CREDIT FOR SHOWING ALL WORKINGS.

QUESTION 1

1.1 Which one is preferable to an investor, forward contracts or futures contracts? Support your answer. *[6 marks]*

1.2 Outline any four factors that has led to a tremendous growth in derivatives market *[12 marks]*

1.3 Expose the main margin requirements specified under futures contracts. *[7 marks]*

[TOTAL MARKS: 25]

QUESTION 2

2.1 Why do we need a clearing house in exchange traded derivatives? *[6 marks]*

2.2 An option contract exists on Econet stock with a premium of $55 and an exercise price of $560. During the first 8 trading days, Econet stock market price on ZSE was quoted as:

Day	1	2	3	4	5	6	7	8
Price	410	435	505	560	575	615	625	645

Draw the pay-off diagrams for the <u>seller and a buyer</u> of a <u>call</u> option. *[10 marks]*

2.3 Consider a futures contract that has a life of 180 days, the annual interest rate is 5% and the spot price is $100. Compute the price of such a futures contract under the following conditions:

i. *Continuous compounding.* *[3 marks]*

ii. *Continuous compounding with a 2% yield.* *[3 marks]*

iii. *Continuous compounding with a 3% carrying cost.* *[3 marks]*

[TOTAL MARKS: 25]

QUESTION 3

3.1 A firm sells a 6x89 FRA with a notional principal of $200 million and the contract rate is 6.8%. On the settlement date the 3-month LIBOR is 5.2%. How much will the firm receive or pay? *[6 marks]*

3.2 Determine the price of a put option supposing that asset spot price = 90, exercise price = 90, u = 1.20, d = 0.70, and r = 0.05. *[9 marks]*

3.3 Discuss the main features of forward contracts. *[10 marks]*

[TOTAL MARKS: 25]

QUESTION 4

4.1 Why are some financial markets not embracing derivative contracts? *[10 marks]*

4.2 On the maturity date the quoted futures price is $25, and the spot price is $30. Is there any arbitrage profit? Design a technique to earn riskless profit. *[5 marks]*

4.3 From the following market quotes, design a swap as a swap dealer:

	Fixed rate market	**Floating rate market**
Firm DX	5%	Libor
Firm DB	10%	Libor + 1%

The swap dealer charges 1% commission. Charges and savings are shared equally.

[10 marks]

[TOTAL MARKS: 25]

QUESTION 5

5.1 Expose the main categories of derivative contracts. *[5 marks]*

5.2 You are long 20 gold futures contract. The futures price per contract is $20 and the initial margin is $10 per contract, whereas the maintenance margin is $5 per contract. Mark-to-market your margin account given the following futures settlement prices:

Day	Beginning Bal	Funds deposited	Settlement price	Gain/loss	Ending Bal

0			100		
1			99		
2			96		
3			101		
4			102		
5			103		
6			104		

What is your net gain/loss over the 6 day period? *[10 marks]*

5.3 Why is the development of derivative markets very slow in emerging markets?

[10 marks]

[TOTAL MARKS: 25]

END OF EXAMINATION