NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

B.COMM RISK MANAGEMENT AND INSURANCE

FINANCIAL RISK MANAGEMENT (CIN 4205)

APRIL/MAY EXAMINATION 2006

DURATION 3 HOURS

INSTRUCTIONS TO CANDIDATES

1. Answer questions 1 and 2, and any other two questions.
2. Show all your workings.

QUESTION 1 [25 marks]

(a) What do you understand by VAR?

(b) What factors would you consider when choosing the horizon over which VAR is measured?

(c) Assume that changes in yield, price and exchange rate follows a normal distribution with mean zero and variance σ^2
Calculate daily earnings at risk (DEAR) at 95% confidence level of following departments, (Note! 95% is 1,65 σ from the mean)

- (i) Money market department – This department has a \$ 1 000 000 market value position in zero coupon bonds of 7 years to maturity with a face value of \$ 1 631 483. Today's yield on these bonds is 7,243% per annum. Assume that the standard deviation (s) is 0,001.
- (ii) Foreign exchange department – The department has a R1,6 million trading position in spot South Africa Rands. The exchange rate between the Z\$ and the Rand is \$ 0,625/Rand today and the standard deviation is given as 0,00565.
- (iii) Stockbroking department – The department holds a \$ 1 million trading position in stocks. The standard deviation is indicated at 0,02.

(d) Calculate the aggregate VAR for ABC given the following information on coefficients between the respective securities traded within the organization.

	7 year zero coupon	Z\$/R	Stock Index
7 year zero coupon	1	- 0,2	0,4
Z\$/R	-0,2	1	0,1
Stock Index	0,4	0,1	1

QUESTION 2 [25 marks]

(a) Discuss the potential impact of interest rate risk on the bank's operations from both an Economic and Earnings perspective. **[5 marks]**

(b) Explain how Gap Analysis can be used to identify and quantify interest rate repricing risk. **[5 marks]**

(c) The table below shows a simple gap report for XYZ bank

	< 1 Month	1 – 3 Months	3 – 6 Months	6 – 12 Moths	1 – 2 Years	2 – 3 Years	> 3	Total
Loans	100	10	20	45	5	20	30	
Investments	0	5	5	10	20	20	50	
Other Assets	5	0	0	0	0	0	15	
Total Assets								
Non maturity Deposits	-65	0	0	0	-30	0	-50	
CDs and Other Liabilities	-35	-35	-45	-30	-10	-70		
Total Liabilities								
Equity								-30
Net Period Gap								
Cumulative Gap								

Calculate the following:

(i) Net Periodic Gaps ……………………………………… **[2 marks]**

(ii) Cumulative Periodic Gaps ……………………………… **[3 marks]**

(iii) Overally, is the bank Asset, Liability or Neutral sensitive …… **[3 marks]**

(iv) Discuss the impact of interest rate changes on the bank's earnings in each time band …………………………….. **[7 marks]**

QUESTION 3

Clearly outline the life cycle of a risk management process. **[20 marks]**

QUESTION 4

Critically assess the significance of corporate governance practice as a risk management tool in Zimbabwe. **[20 marks]**

QUESTION 5 [20 marks]

Suppose you are given the following information about a bank balance sheet.

FACE VALUE	MATURITY	COUPON [% P.A]	YTM % P.A
Assets $ 3.5 m	2 years	6%	5%
Liabilities $ 2 m $ 1 m	 6 months 3 months	 1% 1%	 5% $%

N.B - **Coupons and YTMs are given per annum**
- **Assets and Liabilities are at book values**

(a) What is the market value of Assets? **[4 marks]**
(b) What is the market value of Liabilities? **[4 marks]**
(c) What is the duration of assets? **[4 marks]**
(d) The interest rate is 5%, what is the value of assets if the interest rate increases by 1%? **[4 marks]**
(e) What is the duration of liabilities? Use the weighted average method based on market value weights. **[4 marks]**