MUNHUMUTAPA SCHOOL OF COMMERCE

DEPARTMENT OF ECONOMICS AND FINANCE

MAIN EXAMINATION

BACHELOR OF COMMERCE	**PART 4 SEMESTER 1**
COURSE	**FINANCIAL RISK MANAGEMENT**
CODE	**HRMI 419**
DATE	**2024**
DURATION	**3 HOURS**

INSTRUCTIONS TO CANDIDATES

1. **THE PAPER COMPRISES 5 QUESTIONS.**
2. **YOU ARE REQUIRED TO ANSWER FOUR QUESTIONS, BOTH QUESTIONS IN SECTION A AND ANY TWO FROM SECTION B**
3. **BEGIN THE ANSWER TO EACH QUESTION ON A FRESH PAGE OF THE ANSWER BOOKLET.**
4. **NON-PROGRAMMABLE FINANCIAL OR SCIENTIFIC CALCULATORS ARE ALLOWED INTO THE EXAMINATION.**
5. **CANDIDATES WILL OBTAIN CREDIT FOR SHOWING ALL WORKINGS.**

SECTION A

Answer both questions in this section. Each question carries 30 marks

Question 1

1.1 Discuss the various instruments that can be used to hedge financial exposures of trading firms and individuals. [10 marks]

1.2 2.2 Suppose we have the following Index Model for stocks A and B based on estimates from their excess returns on the market: $R_A = 4.8\% + bR_m + e_A$ and $R_B = -3.6\% + cR_m + e_B$ where b and c are their beta coefficients respectively.

It is also given that $\sigma_m = 40\%$, and that the coefficients of determination for stocks A and B are $Rs_A^2 = 0.36$ *and* $R_B^2 = 0.64$. The stocks' standard deviations are also given as σ_A= 80% and σ_B= 75% while their market returns are $R_A = 20\%$ and $R_B = 25\%$.

2.2.1 Calculate the values of b and c (the beta coefficients of the two stocks, A and B). [4 marks]

2.2.2 Breakdown the total variance to each security into the systematic and unsystematic components. Interpret your results. [6 marks]

2.2.3 Determine the covariance of each security and the market. Interpret your answers.[3 marks]

2.2.4 Evaluate the covariance between the two stocks A and B. Appraise your answer. [2 marks]

2.2.5 Compute the correlation coefficient of the two stocks A and B and interpret it. [2 marks]

2.2.6 Decompose the returns to the two securities into their market and unsystematic components. Comment on your solutions. [3 marks]

[Total 30 Marks]

[Total 30 Marks]

Question 2

2.1 Discuss the various instruments that can be used to hedge financial exposures of trading firms and individuals. [9 marks]

2.2 Amanda Limited has set aside $25 million to be invested in an insurance business for two years and its cost of capital is 20%p.a. There is however a 60% chance of a recession in the first year of investment. If this happens net operating cash flows of the fund will be $16 million. However in the event of there being no recession in the first year, net cash flows will be $36 million. If there

is a recession in the first year, there is a 40% chance of another recession in the second year leading to net operating cash flows of $16 million. However a recession in year 1 followed by no recession in year two will lead to net cash flows of $30 million. It is also projected that if there is no recession in year 1, there is a 30% chance of a recession in year two giving rise to net cash flows of $20 million. However in the absence of recessions in years 1 and 2, net cash flows to be realised by the company will be $40 million. Evaluate the viability of the projected business. Interpret your result. [20 marks]

[Total 30 Marks]

Section B

Answer any two (2) questions in this section. Each question carries 20 marks.

Question 3

Evaluate the threats and opportunities Central Banks in emerging economies such as Zimbabwe can draw from adoption and implementation of Basel I, II and III Capital Accords. [20 marks]

[Total 20 Marks]

Question 4

4.1 What are some of the reasons given for obligors defaulting on their financial obligations? [8 marks]

4.2 Zhou Limited faces five securities listed on a Stock Exchange as on the table below:

Stock	Beta (β)	P_0 ($)	P_n ($)	RRR	Alpha (α)	Evaluation
A	1.20	5	6			
B	0.80	8	10			
C	1.00	2.50	2.90			
D	1.25	2.50	3.20			
E	1.40	8.00	9.60			

4.2.1 If the securities trade in a market characterized by a risk free rate of 8% and market rate of 18%, find the RRR of each stock.

4.2.2 Evaluate the expected market return of each stock.

4.2.3 Copy and complete the table above using the market returns and RRRs above.

4.2.4 Explain what the company would do to in each case to generate arbitrage profit. [12 marks]

[Total 20 Marks]

Question 5

5.1 Alpha Limited is a Zimbabwean firm that has a total financial exposure of $1 000 000 to be shared equally between milk and fruit projects. There is a 20% chance the economy will operate under a boom, 50% normal state and 30% chance of a recession. Under the three states of the economy the milk project promises net cash flows (NCFs) of $1 600 000, $1 200 000 and $750 000 and fruit project NCFs of $1 50 000, $1 300 000 and $800 000 respectively.

5.1.1 Evaluate the mean, the standard deviation and expected NCF of each project. [6 marks]

5.2.1 Calculate the expected NCF and standard deviation of a portfolio of the two projects. [4 marks]

5.2 Beta Limited is a Zimbabwean firm that has a total financial exposure of $4 000 000 broken down into 3 loans issued to A, $1 000 000, B, $1 800 000 and C, $1 200 000. The senior management team of the financial institution has predicted that there are 4%, 5% and 6% chances of the borrowers of the funds defaulting respectively. Evaluate the mean and standard deviation of the institution's total credit exposure. [10 marks]

[Total 20 Marks]

END OF EXAMINATION