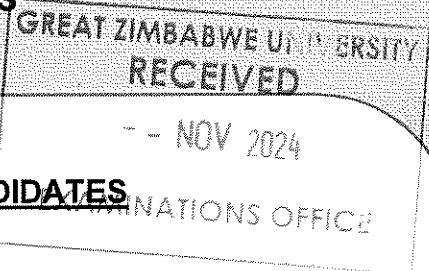




**HERBET CHITEPO SCHOOL OF LAW AND BUSINESS SCIENCES
DEPARTMENT OF ECONOMICS AND FINANCE**

BACHELOR OF COMMERCE	PART 4 SEMESTER 1
COURSE	PORTFOLIO THEORY AND INVESTMENT
CODE	HRMI 4113
DATE	MARCH 2024
DURATION	3 HOURS



INSTRUCTION TO CANDIDATES

- 1. SECTION A IS COMPULSORY.**
- 2. ANSWER ANY THREE QUESTIONS FROM SECTION B.**
- 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 ARE REMINDED OF CLEAR PRESENTATION OF THEIR ANSWERS.**

SECTION A

ANSWER ALL QUESTIONS FROM THIS SECTION

QUESTION 1

- i) A share's return varies by market and the returns of share A and B in each market are as follows

	Bull market	Normal market	Bear market
Probability	0.4	0.3	0.3
Share A's return	23%	15%	8%
Share B's return	25%	10%	7.5%

- 1) Calculate the expected return of Share A and Share B. [4 marks]
 - 2) Calculate the standard Deviation of Share A and B [4 marks]
 - 3) Calculate the coefficient of variation of each share and compare the risk profiles of the two shares. [6 marks]
- ii) Lobsta clothing's current dividend is 1.40 per share. It has a required rate of return of 8% and its dividend is expected to grow at a constant rate of 3% per year. Calculate the price of the share using the constant growth model. [4 marks]
- iii) A put option on share A with a strike price of R60 is priced at R3, while a call with a strike price of R50 is priced at R4. What is the breakeven for the put holder (buyer) and the profit for the call holder (buyer) if the share price increases to R80? [5 marks]
- iv) A 6-month European put with a strike price of R100 sells at a premium of R3.00. It has a risk-free rate of return of 5% and a current share price of R96. Using the put-call parity, calculate the equivalent value of the European call option. [5 marks]
- v) A company pays a dividend of R0.50 per share. The dividend is growing at a 20% rate, but its long-run growth rate at maturity is expected to be 6%, which will be attained in 20 years. Assume that the company's cost of equity capital is 15%. What is the value of the share according to the H-model? [6 marks]
- vi) Discuss the concept of diversification [6 marks]

SECTION B

ANSWER ANY THREE QUESTIONS FROM THIS SECTION

QUESTION 2

Discuss the following investment constraints found in the investment policy statement and their implications for the choice of portfolio assets:

- i) Tax concerns [4 marks]
- ii) Unique circumstances [4 marks]
- iii) Time horizon [4 marks]
- iv) Legal and regulatory factors [4 marks]
- v) Liquidity needs [4 marks]

QUESTION 3

- i) Dudley Trudy recently met with one of his clients. Trudy typically invests in a master list of thirty equities drawn from several industries. As the meeting concluded, the client made the following statement: "I trust your stock-picking ability and believe that you should invest my funds in your five best ideas. Why invest in thirty companies when you obviously have stronger opinions on a few of them?" Trudy plans to respond to his client within the context of Modern Portfolio Theory.
 - 1) Contrast the concepts of systematic risk and firm-specific risk, and give one example of each risk. [6 marks]
 - 2) Critique the client's suggestion. [7 marks]
- ii) An analyst has gathered the following information: Expected return on the market = 15% Risk-free rate = 8% Estimated rate of return of Nedcor share = 17% Beta of Nedcor = 1.25 Based on the above-mentioned information, determine whether the shares are over or undervalued. [7 marks]

QUESTION 4

- i) Suppose that over a year, the holding-period return on an investment fund was 10% and the return achievable from investing in government bonds ("risk-free" investments) was 4%. Also assume that the standard deviation

and beta of the investment fund's returns over this period were 5% and 1.8, respectively.

- 1) Compute the Sharpe and the Treynor ratios. [4 marks]
 - 2) Comment on the performance of the fund. [4 marks]
- ii) Critically examine the main risk exposures that affect the value of a bond and/or portfolio of bonds [12 marks].

QUESTION 5

- i) An investor owns 20 000 Absa shares. He would like to protect the value of this portfolio by entering into either a single stock futures contract or a put options contract with a 0.6666 delta on this share. How many SSF contracts or options contracts will this investor have to buy or sell to achieve this? [3 marks]
- ii) Mwanawasa Sithole is holding the DJIA index, which is her version of the market. She think that three stocks, A, B and C, which are not in the DJIA, are undervalued and should form a part of her portfolio. She has the following information about the stocks, the DJIA and the risk-free rate.

Security	Expected Return	Standard Deviation	Beta
A	17%	30%	1.5
B	20%	25%	1.2
C	18%	23%	1.1
DJIA Index	13%	18%	
Risk-free rate	3%	0%	

- 1) Calculate the Jensen's alpha for A, B and C. [6 marks]
- 2) Calculate non-systematic variance for A, B and C. [6 marks]
- 3) Should any of the three stocks be included in the portfolio? If so, which stocks should have the highest weight in the portfolio? [5 marks]

END OF EXAMINATION