AFRICA UNIVERSITY
A United Methodist-Related Institution

"Investing in Africa's Future"

COLLEGE OF BUSINESS PEACE LEADERSHIP & GOVERNANCE

NMAC 410: FINANCIAL MANAGEMENT II

END OF SECOND SEMESTER EXAMINATIONS

APRIL/MAY 2023

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DURATION: 3 HOURS

INSTRUCTIONS

Attempt **All four (4)** questions

The marks allocated to each question are shown at the end of the question.

Show all your workings where it is required.

Credit will be given for presentations that are neat, logical and grammatically well-constructed.

You are allowed to use a non-programmable scientific or financial calculator.

QUESTION 1: Case Study

Garikai Ltd (Garikai) is a well-known herbal remedy for skin problems. Garikai Ltd was founded by three brothers in the 1950s and until the death of the remaining brother in 2004 has performed well. However, the new Chairman has limited experience and the company has not performed well over recent years. Garikai Ltd has a dedicated team of herbalists who have developed products, which would find a ready market. Unfortunately, there is insufficient funds and expertise to correctly market these products and market share is low.

Garikai's new shareholders, employees, customers, finance providers, community at large, managers and even the government are all not happy with the current performance of Garikai. There is serious conflict of interest and friction between these various players.

Garikai has the following forecasted figures for the following year.

	ZWL$
Sales	3,600,000
Purchases expenses	3,000,000
Average receivables	306,000
Average inventory	495,000
Average payables	230,000
Average overdraft	500,000
Gross profit margin	25%

The industry averages data is as shown below.

Inventory days	53
Receivables days	23
Payables days	47
Current ratio	1.43

Assume there are 365 days in the year

Garikai also sells its product mostly on credit and has been currently experiencing challenges in collecting money from its trade receivables.

Makanda Ltd (Makanda) is the manufacturer of cosmetics, soaps and shower gels. It also markets its products using its own highly successful sales and marketing department. It is seen as an employer of choice and as such has a talented and loyal work-force with a history of developing new and exciting products which have sold well. It is now considering extending its range,

however it has currently a build-up of unfulfilled orders due to a lack of capacity.

Makanda Ltd's products and Garikai Ltd's products are made using similar production technologies and their financial and administrative systems are similar and it is hoped savings can be made here.

In one of its new beauty soaps, "Smooth Sparks", Makanda has estimated a monthly demand of 10,000 units for the following year. The purchase price is $10/unit and the company's cost of finance is 15% per annum. Warehouse storage costs per unit per annum are $2/unit. The supplier charges $200 per order for delivery.

Makanda is also considering the use of Miller-Orr cash management model. A minimum cash balance of ZWL$20,000 is required and transferring money to or from the bank costs $50 per transaction. Inspection of daily cash flows over the past year suggests that the standard deviation is $3,000 per day.

Required:

(a) Identify any potential synergy gains that would emerge from a merger of Makanda Ltd and Garikai Ltd. **(10 marks)**

(b) Explain any potential conflicts in objectives which might arise between any 3 pairs of Garikai's stakeholders listed above. **(6 marks)**

(c) Justify any 3 ways in which Garikai can resolve the agency conflict between its shareholders and its managers. **(4 marks)**

(d) Calculate and comment on Garikai 's cash operating cycle, current ratio, quick ratio and sales to working capital ratio. **(10 marks)**

(e) Calculate the EOQ on Makanda's "Smooth Sparks". **(3 marks)**

(f) Compute the following cash management metrics for Makanda;
   (i) The spread between the upper and lower limits.
   (ii) The upper limit.
   (iii) The return point. **(4 marks)**

(g) Outline how Garikai can develop and operate a credit policy to efficiently manage its receivables. **(3 marks)**

[Total: 40 marks]

QUESTION 2

Vamhanyi Enterprises Ltd (Vamhanyi) is a Zimbabwean registered company that specialises in the manufacture and sale of high-quality running shoes. Mrs Bakasa, the Chief Executive Officer (CEO), is considering computerising the company's ordering, inventory and billing procedures. She estimates that the annual savings from computerisation include the following;

1. A reduction of 10 clerical employees with annual salaries of ZWL$150,000 each.
2. ZWL$80,000 from reduced production delays caused by raw materials inventory.
3. ZWL$120,000 reduction in sales that were being lost due to inventory stockouts.
4. ZWL$30,000 associated with timely billing procedures.

The purchase price of the system is ZWL$2,000,000 and installation costs are ZWL$500,000. These outlays will be capitalised (depreciated) on a straight-line basis to a zero-book salvage value which is also its market value at the end of 5 years.

The operation of the new system requires 2 computer specialists with annual salaries of ZWL$400,000 per person. Also, annual maintenance and operating cash expenses of ZWL$120,000 are estimated to be required.

The company's tax rate is 40% and its required rate of return (cost of capital) for this project is 12%.

The Board of Directors of Vamhanyi has approached you as a Financial Analyst, for advice with regards to the proposed project.

Required:

(a) Determine the project's initial net cash outlay. **(2 marks)**
(b) Compute the project's after-tax profit and cash flows over its 5-year life. **(10 marks)**
(c) Evaluate the project using the Net Present Value (NPV) method. **(4 marks)**
(d) Calculate the project's payback period and explain your results. **(2 marks)**
(e) Explain the significance of the concept of the 'Time Value of Money' in capital investment decisions. **(2 marks)**

[Total: 20 marks]

QUESTION 3

(a) Makasi Ltd. earns ZWL$1000/ share. Capitalization rate (cost of equity) and return on investment are 10% and 12% respectively.

Required:

(i) Justify the optimum dividend payout ratio for Makasi Ltd. **(2 marks)**

(ii) Determine the share price at the optimum payout ratio using Walter's Model. **(2 marks)**

(iii) Examine any 2 criticisms that are levelled against Walter's model in determining the optimum dividend payout. **(4 marks)**

(b) The following figures are collected from the annual report of Masimba Ltd.

Net Profit	ZWL$10,000,000
Outstanding 12% Preference Shares	10,000,000
Number of equity shares	300,000
Return on Investment	20%
Cost of Capital (equity)	16%

(i) Determine the optimum dividend payout ratio for Masimba Ltd. **(2 marks)**

(ii) Determine the share price at the optimum payout ratio using Gordon's Model. **(5 marks)**

(c) Justify the applicability and operation of a zero-dividend policy in a fast-growing business in the Zimbabwean mining sector. **(5 marks)**

[Total: 20 marks]

QUESTION 4

The following table gives information about four investments: Arumando Ltd (A), Bolomali Ltd (B), Charuma Ltd (C), and Dhaka Ltd (D). Assume that an investor, Mr Jimu has decided to construct a two-asset portfolio and that he has already decided to invest 50% of the funds in Arumando Ltd. He is currently trying to decide which one of the other three investments into which he will invest the remaining 50% of his funds.

Market Conditions	**Probability**	**Arimando Ltd (A) (%)**	**Bolomali Ltd (B) (%)**	**Charuma Ltd (C) (%)**	**Dhaka Ltd (D) (%)**
Boom	0.1	30	30	10	10
Normal	0.8	20	20	20	22.5
Recession	0.1	10	10	30	10
Expected Return		20	20	20	20
Standard deviation		4.47	4.47	4.47	4.47

The correlations between the returns are as follows;

- A, B =perfect positive correlation.
- A, C=perfect negative correlation.
- A, D=no correlation.

Required:

(a) Compute the expected returns of all the possible two-asset portfolios that Mr Jimu can invest in from the given opportunities. **(6 marks)**

(b) Determine the level of risk, using the appropriate metric, that is associated with each of the identified possible two-asset portfolios for Mr Jimu. **(6 marks)**

(c) Draw up a summary table from the information in (a) and (b) above and justify the most efficient two-asset portfolio that Mr Jimu should choose. **(6 marks)**

(d) Contrast systematic and unsystematic risk with the aid of appropriate examples. **(2 marks)**

[Total: 20 marks]

END OF EXAMINATION

Formulae Sheet

$$Q = \sqrt{\frac{2Co.D}{Ch}}$$

Co = Cost per order

D = Annual demand

Ch = Cost of holding one unit for one year.

The relationship between dividend and share price based on Walter's formula is shown below:

$$\text{Market Price}(P) = \frac{D + \frac{r}{K_e}(E - D)}{K_e}$$

Where,

P = Market Price of the share.

E = Earnings per share.

D = Dividend per share.

K_e = Cost of equity/ rate of capitalization/ discount rate.

r = Internal rate of return/ return on investment

Return point = Lower limit + (1/3 × spread)

Spread = 3 × [(3/4 × Transaction cost × Variance of cash flows) ÷ Interest rate] $^{1/3}$

The following formula is used by Gordon to find out price per share:

$$P_0 = \frac{E_1(1-b)}{K_e - br}$$

Where,

P_0 = Price per share

E_1 = Earnings per share

b = Retention ratio; (1 - b = Payout ratio)

K_e = Cost of capital

r = IRR

br = Growth rate (g)

Version 1

$$\sigma port\ (A,B) = \sqrt{\sigma^2_a x^2 + \sigma^2_b (1 - x)^2 + 2x (1 - x) cov(R_A, R_B)}$$

Version 2

$$\sigma port\ (A,B) = \sqrt{\sigma^2_a x^2 + \sigma^2_b (1 - x)^2 + 2x (1 - x) \rho_{ab} \sigma_a \sigma_b}$$

(given on formula sheet in the exam)

END OF PAPER