CERTIFIED PUBLIC ACCOUNTANT
INTERMEDIATE LEVEL EXAMINATIONS

I1.1: MANAGERIAL FINANCE

DATE: TURSDAY 29, FEBRUARY 2024
MARKING GUIDE AND MODEL ANSWERS

SECTION A

QUESTION ONE

Marking Guide

No		Marks
a)	Stating FIVE advantages that ALPHA limited would enjoy if they adopt the new policy just in time model Award 1 mark each	5
b)	i) Determine the optimal stock level award 1 mark for the formulae and 1 mark for answer	2
	ii) Calculate the relevant cost award 1 mark holding cost, ordering cost and total cost (1x3)	3
C	i)Award 1 mark for each ratio for year for i	2
	ii) calculation of ratios quick ratio, inventory duration and debtors' collection period award 0.5 marks for each year for (ii-iv)	3
	v)calculation of asset turnover ratio award 1 mark for each year	2
	vi) 3 comments each 1 mark (3x1)	3
	Total marks	20

Model answers

(a)

Giving five advantages that Alpha Limited would enjoy if they adopt the new policy just in time model

i) Reduced cost: it helps to minimizes holding and storage cost by maintaining inventory level just in time for production
ii) Improve cash flows; with just in time capital is not tied up in excessive stock. This free up funds for other business needs
iii) Enhances efficiency; JIT promotes a streamline production process by delivering components and materials precisely when they are needed
iv) Quality control; since JIT requires coordination between suppliers and manufacturers, it encourages a focus on quality control the timely arrival of stock ensures that only necessary and high-quality components are used in production
v) Flexibility and responsiveness: JIT enables companies to adopt quickly to changes in customers demand or market condition by maintaining low level of inventory, business can shift production to meet changing requirements allowing for create flexibility and responsiveness
vi) Reduces waste: JIT minimizes excess inventory, which helps reduces the risk of obsolete or expired goods this lowers the chances of waste due to unsold or spoiled product

vii) Customers satisfaction; by responding quickly to changing market demand and delivery product promptly JIT can enhance customer needs can improve relationship and increase loyalty.

(b)

i) Optimal stock level

E.O. Q= $(2D*CO/CH)^{1/2}$

= $(2*1,250,000*500/100)^{1/2}$

=3,536 units

Workings

W1 Annual Demand In Units

=FRW1, 250,000,000/1,000

=1,250,000 Units

W2 Holding Cost

=10%*1,000

=100

ii) Calculate relevant cost

Holding cost (Q/2*CH) 3536/2*100 =FRW176, 776

Ordering cost (D/Q*CO) 1,250,000/3536*500=FRW176776

Total relevant cost =FRW353552

Bokasa limited ratios evaluation of overtrading

Ratios	Formulae	2022	2023
i)Current ratio	Current asset/Current liabilities :1	132,000/145,640:1 =0.906:1	183,000/218,500:1 =0.8375:1
ii)Quick ratio	(Current asset-inventory)/Current liabilities :1	(132,000-80,000)/145,640:1 =0.3570:1	(183,000-112,000)/218,500:1 =0.3249:1
iii)Debtors period	Debtors/credit sales*360 days	40,000/400,000*360 days	56,000/500,000*360

		=36 Days	days =40 days
iv)Inventory days	Inventory/cost of sales*360 days	80,000/300,000*360 days =96 days	112,000/373,000*360days =108 days
v)Asset turnover	Sales/Total assts	400,000/272,000 =1.4705 times	500,000/337,000 =1.4837 times

vi) Using three symptoms on the above case, Comment if the company is overtrading

a) There is an increase in debtors' collection days
b) It has an increase on inventory days
c) It has a decrease in both current and quick ratios
d) Bank overdraft has increases
e) There is reduction on long term finance
e) Creditors value has increases
f) Current asset volume has increase more than increase on the sales

QUESTION TWO

Marking Guide	Marks
a)	
Reasons for management of Working capital in business (1 Mark each and if candidates list only award 0.5, Max 3 point)	3
b)	
Three types of working capital funding policies	
A Conservative approach (1 Mark for outline,1 mark for Explanation)	2
An aggressive approach (1 Mark for outline,1 Mark for Explanation)	2
Matching (1 Mark for outline, 1 Mark for Explanation)	2
c)	
i) optimum cash balance (1 Mark for formula, 2 Mark for Computation)	3
ii) Number of Transaction (0.5 Mark for formula, 0.5 for Computation)	1

iii) cost of making those transaction per annum (1 Mark for formula, 1 Mark for Computation)	2
iv) Opportunity Cost of holding cash per annum (1 Mark for formula, 1 Mark for Computation)	2
d)	
i)spread between the upper and lower limits (2 Mark for formula, 2 Marks for Computation)	4
ii) Upper limit (1 Mark for formula, 1 Mark for Computation	2
iii)Return Point (1 Mark for formula, 1 Mark for Computation	2
	25

Model Answers

a) The finance manager should understand the management of working capital because of the following reasons:

1. **Time devoted to working capital management** A large portion of a financial manager's time is devoted to the day-to-day operations of the firm and therefore, so much time is spent on working capital decisions.
2. **Investment in current assets**: Current assets represent more than half of the total assets of many business firms. These investments tend to be relatively volatile and can easily be misappropriated by the firm's employees. The finance manager should therefore properly manage these assets.
3. **Importance to small firms:** A small firm may minimize its investments in fixed assets by renting or leasing plant and equipment, but there is no way it can avoid investment in current assets. A small firm also has relatively limited access to long term capital markets and therefore must rely heavily on short-term funds.
4. **Relationship between sales and current assets**: The relationship between sales volume and the various current asset items is direct and close. Changes in current assets directly affects the level of sales. The finance management must therefore keep watch on changes in working capital items.
5. Working capital management helps in formulating Growth and expansion strategies.
6. Helps in determining Firm's credit policy

b) Three types of working capital funding policies determine the levels of investment in current assets

The level of working capital will depend on the policy of the organization and the industry in which it operates.

Some industry like manufacturing will have long operating cycles and high level of investment in working capital due to the length of time required to manufacture goods. Other industries like supermarkets will have rapid inventory turnovers and short operating cycles.

A Conservative approach

A conservative working capital management policy aims **to reduce the risk of operational breakdown by holding high levels of working capital**.

A conservative approach to financing working capital involves all non-current assets and permanent current assets, as well as part of the fluctuating current assets, being financed by long-term funding. This is less risky and less profitable than a matching policy. At times when fluctuating current assets are low, there will be surplus cash which the company will be able to invest in marketable securities.

An aggressive approach

An aggressive working capital management policy aims to reduce this financing cost and increase profitability by cutting inventories, speeding up collections from customers, and delaying payments to suppliers. Not only are fluctuating current assets all financed out of short-term sources, but so are some of the permanent current assets.

The potential disadvantage of this policy is an increase in the chances of system breakdown through running out of inventory or loss of goodwill with customers and suppliers. However, modern manufacturing techniques encourage inventory and work in progress reductions through just–in–time policies, flexible production facilities and improved quality management.

Matching or Moderate Policy/strategy

The matching principle suggests that long-term finance should be used for long-term assets. A balance between risk and return might be best achieved by a moderate approach to working capital funding. This is a policy of maturity matching in which long-term funds finance permanent assets while short-term funds finance non-permanent assets. This means that the maturity of the funds matches the maturity of the assets.

c)

i. Optimum cash Q= $\sqrt{\frac{2*C*S}{I}}$ $= \sqrt{\frac{2*5{,}000*12{,}000{,}000}{0.05}}$ **= FRW 1,549,193**

The cost of holding cash I= 15% - 10% = 5%

S= amount of cash to be used in each time period usually one years (Annual Demand)

C= Cost per sale of securities (Cost of placing order)

I= Opportunity interest cost of holding cash or near cash equivalent

Q= the optimum total amount to be raised to provide for S

ii. **How many Transactions will arise each year** = $\frac{\textbf{Amount of cash Demand per year}}{\textbf{Optimum cash to be raised in each time}}$

$\frac{12{,}000{,}000}{1{,}549{,}193}$ = 7. 746 times

iii.What is the cost of making those transaction per annum

Number of Transaction per year * Cost of placing order

7. 746 times * FRW 5,000 = **FRW 38,730**

iv.What is the opportunity Cost of holding cash per annum

opportunity Cost of holding cash

$= \frac{Optimmum\ Cash\ to\ be\ raised\ each\ time}{2} *$ Opportunity interest cost of holding cash

$\frac{\text{Frw 1,549,193}}{2} * 0.05$ = **FRW 38,730**

d)

he formulae for the Miller-Orr model are:

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

e) Note: variance and interest rates should be expressed in daily terms. Variance = standard

f) deviation squared.

The formulae for the Miller-Orr model are:

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

Note: interest rates should be expressed in daily terms.

Variance = standard deviation squared. = $30{,}000^2$ =900,000,000

Spread= $3*\sqrt[3]{(\frac{3}{4} * \frac{Transaction\ cost * Variance\ of\ cash\ fows}{Interest\ rate\ per\ days})}$ = $3*\sqrt[3]{(\frac{3}{4} * \frac{500*900{,}000{,}000}{0.0003})}$ =**FRW 312,012**

(ii) **Upper limit= Lower Limit + Spread**

200,000 + 312,012 = FRW 512,012

(iii) **Return Point = Lower Limit + ($\frac{1}{3}$* Spread) = 200,000 + $\frac{1}{3}$* 312,012= FRW 304,004**

QUESTION THREE

Marking Guide	Marks
a)	
act that company can adopt to be a good citizen (1 Mark each, Max 3 point)	3
b)	
how the government can influence business (1 Mark each, Max 3 point)	3
c)	
i) Expected return of each project (0.5 each, Max 1)	
standard deviation of each project (0.5 each, Max 1)	2
ii) Expected return of Portfolio (0.5 Mark for formula, 0.5 Mark for Computation)	1
iii) Covariance (1 Mark for formula, 1 Marks for computation), Correlation coefficient (1 Mark for formula, 1 Marks for computation)	4
iv) Standard deviation of portfolio (1 Mark for formula, 1 Mark for computation)	2
	15

Model Answers

a) Act / Arguments in favor of Corporate Social Responsibility include that it:

1. Creates positive Public Relations for the organization, or, as a minimum avoids bad public relations.
2. Helps attract new and repeat custom
3. Improves staff recruitment, motivation and retention
4. Helps keep the organization within the law

b) There are a number of areas where the Government plays a role in the financial arena:

government affect the way companies do business and the individuals spend, save or invest their money through Establishment of laws, establishing of regulatory boards like central bank, Determination of tax policies that help to attract potential investors

1. Taxation - Corporate (Capital Allowances etc.) & Personal Monetary Policy, tax policy dictates how business conduct their activities how investors handle their investment where by a lower capital gain encourages investor to invest more and determine how long investors keep their investment before selling them.
2. Rates of Inflation, Interest Rates, Exchange Rates: central banks, such as National bank of Rwanda attempt to regulate the money supply and inflation by setting the base interest rate etc.
3. Investment Incentives Offered - Grants, Subsidies etc. Government establishes regulatory bodies to ensure that financial trading activities is conducted fairly and honestly. Its aims to

ensure that investors are protected from fraudulent activities by setting requirement for all companies that participate in the same sector

4. Legislation – by establishing Company Law enacted by parliament, or governing bodies to regulate business in the country and avoiding Monopolies and promote fair Competition, Environmental etc.

5. Duties, Tariffs: government play a curious role in management of inflow and outflow of goods and services from country to other country by setting region tariff, by encouraging or discouraging import and export. This help in protection of local industry by setting high import tariff and provide incentives to the product made local

c) i)

Project A						
State of economy	**probability (p)**	**return from Project A(Xa)**	**expected return (P*Xa)**	**expectation (Xa- Era)**	**(Xa-Era) ^2**	**Standard deviation P*(Xa-Era) ^2**
Recession	0.25	10%	0.025	-3.5%	0.001225	0.000306
Average	0.5	14%	0.070	0.005	0.000025	0.000013
Boom	0.25	16%	0.040	0.025	0.000625	0.000156
expected return (Era)			0.135			0.000475

Expected return for Project A= 0.13.5 or 13.5%

Variance = 0.000475 or 4.75%

Standard deviation= $\sqrt{Variance}$ = $\sqrt{0.000475}$ = 0.0218 0r 2.18%

Project B						
State of economy	probability (p)	**return from Project B (Xb)**	expected return (P*Xb)	expectation (Xb- Erb)	Deviation (Xb- Erb) ^2	Standard deviation P*(Xb-Erb) ^2
Recession	0.25	9%	0.023	-4%	0.00181	0.0005
Average	0.5	13%	0.065	0%	0.00001	0.0000
Boom	0.25	18%	0.045	5%	0.00226	0.0006
expected return (Er b)			0.133			0.0010

Expected return for Project A= 0.13.3 or 13.3%

Variance = 0.0010 or 10%

Standard deviation= $\sqrt{Variance}$ = $\sqrt{0.001}$ = 0.032 = 3.5%

ii) Expected Portfolio Return (Erp)= (Wa* Era) +(Wb*Erb)

	Amount invested	Expected return of each project	Weighting * Expected return of each project
Project A	0.5	0.135	0.0675
Project B	0.5	0.133	0.06625
Expected Portfolio return			**0.13375**

iii)

Correlation of Variation COV (a, b) = $\sum[\boldsymbol{Pi}\ (\boldsymbol{Xa} - \boldsymbol{Er\ a}) * (\boldsymbol{Xb} - \boldsymbol{Erb})]$

Coefficient of Variation between A AND B				
State of economy	probability (P)	expectation (Xa- EVa)	expectation (Xb- EVb)	Co- variance [(Xn-EVn)(Xh-EVh)]*P
Recession	0.25	-3.5%	-4.3%	0.000372
Average	0.5	0.5%	-0.3%	(0.000006)
Boom	0.25	2.5%	4.8%	0.000297
Co-variance return A, B				**0.000663**

Correlation Coefficient r $_{(a,\ b)} = \frac{\boldsymbol{COV(A,B)}}{\boldsymbol{SDa} * \boldsymbol{SDb}} = \frac{0.000663}{0.0218\ *\ 0.032} = \mathbf{0.950}$

(iv) **Risk of Portfolio=** $\sqrt{[(\boldsymbol{Wa^2} * \boldsymbol{Sda^2}) + (\boldsymbol{Wa^2} * \boldsymbol{Sdb^2}) + \mathbf{2} * \boldsymbol{Wa} * \boldsymbol{Wb} * \boldsymbol{Sda} * \boldsymbol{Sdb}\ \boldsymbol{R(a,b)}]}$ Or

$$\sqrt{[(Wa^2 * Sda^2) + (Wa^2 * Sdb^2) + 2 * Wa * Wb * COV(a,b)]}$$

$$\sqrt{(0.5^2 * 0.0218^2) + (0.5^2 * 0.032^2) + [2 * 0.5 * 0.5 * 0.0218 * 0.032 * 0.950)\}}$$

$$\sqrt{(025 * 0.00047524) + (0.25 * 0.001024) + 0.00033136}$$

$$\sqrt{(0.00011881) + (0.000256) + (0.00033136)}$$

$\sqrt{0.00070617}$ **= 0.0266 = 2.66%**

QUESTION FOUR

Marking Guide

No		Marks
a	i) DPS and external borrowings (0.5x10)	2
	ii i) DPS and external borrowings (0.5x10)	2
	iii) Computation of DPS and external borrowings using Constant pay put of 50% policy award 0.2 marks for every year for DPS and external borrowings (0.2x10)	2
	iv)The policy under which aggregate dividends are maximized and external borrowings are minimized award 1 mark for maximizing and 1 minimizing	2
b	A ward 2 marks for correct meaning	2
c	3x2 marks	6
d	Listing FOUR critics of the mode award 1 mark for every point	4
	Total marks	20

Model Answers

Compute the dividend per share and external borrowings under each of the following policies

Residual policy

Years	Earnings after tax FRW	Capital investment FRW	Residual income/dividend paid FRW	Retain profits FRW	External borrowings FRW	D.P.S FRW
1	20,000,000	10,000,000	10,000,000	10,000,000	0	10.00
2	12,000,000	12,000,000	0	0	0	0.00
3	18,000,000	20,000,000	0	0	2,000,000	0.00
4	25,000,000	20,000,000	5,000,000	5,000,000	0	5.00
5	23,000,000	15,000,000	8,000,000	8,000,000	0	8.00
Totals			23,000,000			2,000,000

ii)Constant amount policy

Years	Earnings after tax FRW	Amount to pay as dividends FRW	Retain profits FRW	Capital investments FRW	External borrowings FRW	D. P. S FRW

1	20,000,000	10,000,000	10,000,000	10,000,000	0	10
2	12,000,000	10,000,000	2,000,000	12,000,000	10,000,000	10
3	18,000,000	10,000,000	8,000,000	20,000,000	12,000,000	10
4	25,000,000	10,000,000	15,000,000	20,000,000	5,000,000	10
5	23,000,000	10,000,000	13,000,000	15,000,000	2,000,000	10
TOTALS		50,000,000				29,000,000

iii)Constant payout ratio of 50%

Years	Earnings after tax FRW	Amount to pay as dividends 50% FRW	Retain profits FRW	Capital investments FRW	External borrowings FRW	D. P. S FRW
1	20,000,000	10,000,000	10,000,000	10,000,000	0	10.00
2	12,000,000	6,000,000	6,000,000	12,000,000	6,000,000	6.00
3	18,000,000	9,000,000	9,000,000	20,000,000	11,000,000	9.00
4	25,000,000	12,500,000	12,500,000	20,000,000	7,500,000	12.50
5	23,000,000	11,500,000	11,500,000	15,000,000	3,500,000	11.50

Totals 49,000,0000 28,000,000

Iv Constant amount maximizes dividend payment and residual policy minimizes external borrowing

b) Meaning of Walters valuation model

Is a model that forecasts on the relationship between firm's dividend policy and its market value.

According to this valuation model if the firms retain earnings and reinvest them in a project with a return greater

than the cost of capital, it increases the value of the company. On the other hand, paying dividends signals that the company lacks profitable investment opportunities, potentially decreasing its value.

c) Assumptions applied by the model

1)Constant return on investment:

It assumes that the return on investment from retain earnings is constant.

The firm can reinvest retained earnings at the same rate of return

2)Constant cost of capital;

The cost of equity is assumed to be constant. This implies that the required rate of return by shareholders remains the same regardless of the firm's dividend policy

3)Infinite time horizon:

It assumes an infinite time horizon meaning that the firm will exist indefinitely

4) No external financing: it assumes that the firm does not raise external capital.

All financing will be coming from retain earnings.

5)No personal taxes:

The model does not consider personal taxes on dividends received by shareholders.

It assumed that no tax implication for the shareholders.

d) Critics of the model

1) Assumption of constant cost of equity.

2) Ignores taxation.

3) Limited to dividend relevancy

4) Overlooks external financing

5) Ignores information imbalance /asymmetry

QUESTION FIVE

Marking Guide	Marks
a) Five factors affecting capital structure of the company (1 Mark each, Max 5 point)	5
b) Theories of capital structure	
i) the traditional view Theory	2
ii) the net income approaches	2
iii) Net operating income view of WACC with absent of tax relief	2
iv) Miller and Modigliani theory after tax	2
c)	
i) crypto currency award 2 Marks for good explanation	2
ii) fintech for good explanation award 2 Marks for Good explanation	2
d)	
i) Altman's Z-Scores	2
ii) Corporate Raider	1
	20

Model Answers

a) Factors That Affect Capital Structure

1. Availability of securities – This influences the company's use of debt finance which means that if a company has sufficient securities, it can afford to use debt finance in large capacities.

2. Cost of finance (both implicit and explicit) – If low, then a company can use more of debt or equity finance.

3. Company gearing level – if high, the company may not be able to use more debt or equity finance because potential investors would not be willing to invest in such a company.

4. Sales stability – If a company has stable sales and thus profits, it can afford to use various finances in particular debt in so far as it can service such finances.

5. Competitiveness of the industry in which the company operates – If the company operates in a highly competitive industry, it may be risky to use high levels of debt because chances of servicing this debt may be low and may lead a company into receivership.

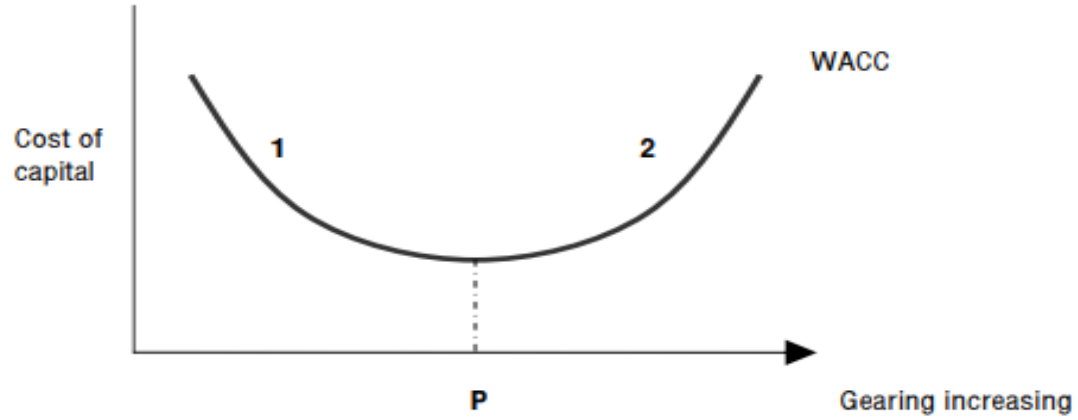
b)

(i) **The traditional view Theory**

Under the traditional theory of cost of capital, the weighted average cost of capital declines initially as gearing increases, but then rises as gearing increases further. **The optimal capital structure is at the gearing level where WACC is lowest.**

- As the level of gearing increases, the cost of debt remains unchanged up to a certain level of gearing. Beyond this level, the cost of debt will increase.
- The cost of equity rises as the level of gearing increases and financial risk increases. There is a non-linear relationship between the cost of equity and gearing.
- The weighted average cost of capital does not remain constant, but rather falls initially as the proportion of debt capital increases, and then begins to increase as the rising cost of equity (and possibly of debt) becomes more significant.
- The optimum level of gearing is where the company's weighted average cost of capital is minimized.

The traditional view about the cost of capital is illustrated in the following figure.



Point P shows the optimum level of debt: cheap debt finance minimizes the cost of capital

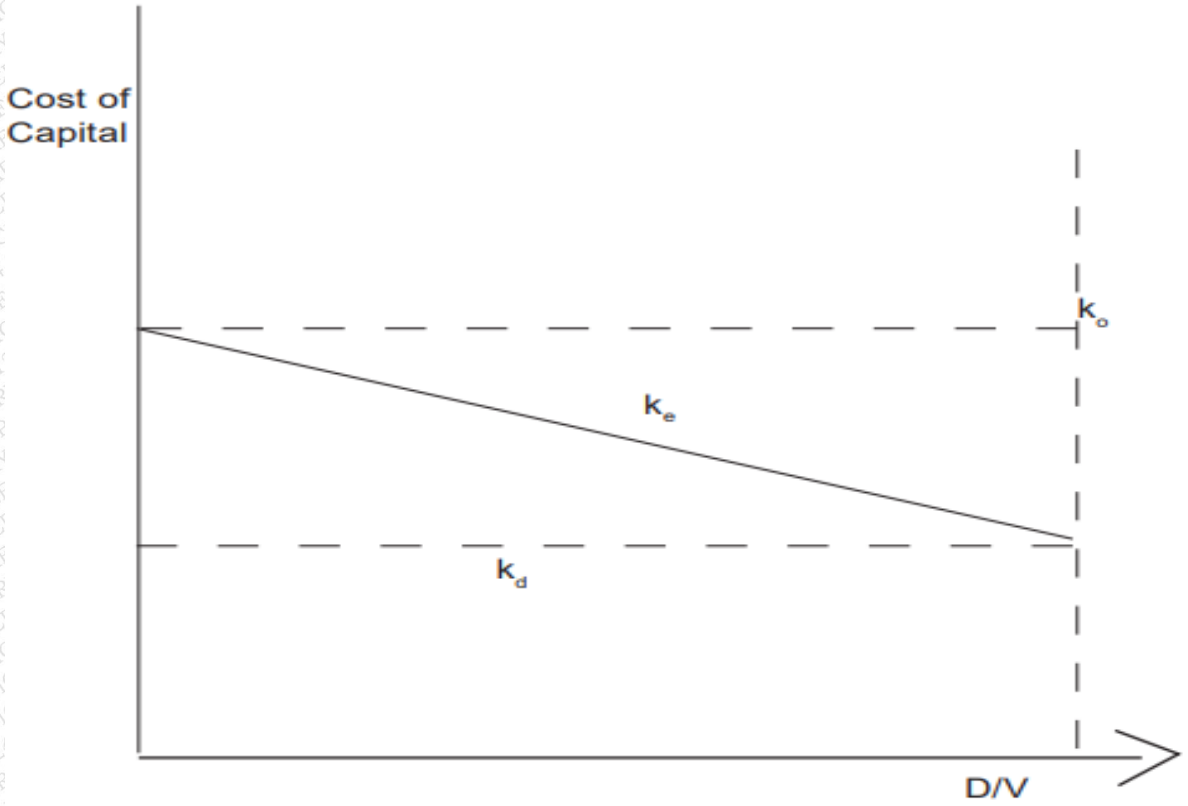
(ii) **The net income approaches**

the NI approach is that the firm can increase its value or lower the overall cost of capital by increasing the proportion of debt in the capital structure.

The implications of these assumptions are that with constant Kd and Ke, increased use of debt, by magnifying the shareholders earnings will result in a higher value of the firm via higher value of equity. The overall cost of capital will therefore decrease

The crucial assumption of this approach is:

1. The use of debt does not change the risk perception of the investor. Thus, Kd and Ke remain constant with changes in leverage.
2. The debt capitalization rate is less than equity capitalization rate (i.e. Kd < Ke).



(iii) **Net operating income view of WACC with absent of tax relief on Debt**

Modigliani and Miller stated that, in the absence of tax relief on debt interest, a company's capital structure would have no impact on its WACC. WACC would be the same regardless of the company's capital structure.

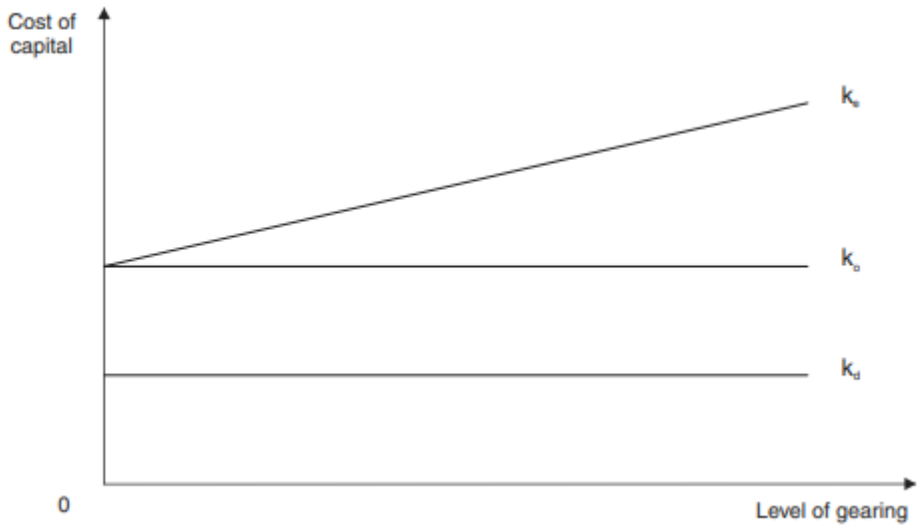
On This theory, Modigliani and Miller (M&M) proposed that the total market value of a company, in the absence of tax relief on debt interest, will be determined only by two factors:

1. The total earnings of the company
2. The level of operating (business) risk attached to those earnings

The total market value would be computed by discounting the total earnings at a rate that is appropriate to the level of operating risk. This rate would represent the WACC of the company.

the capital structure of a company would have no effect on its overall value or WACC

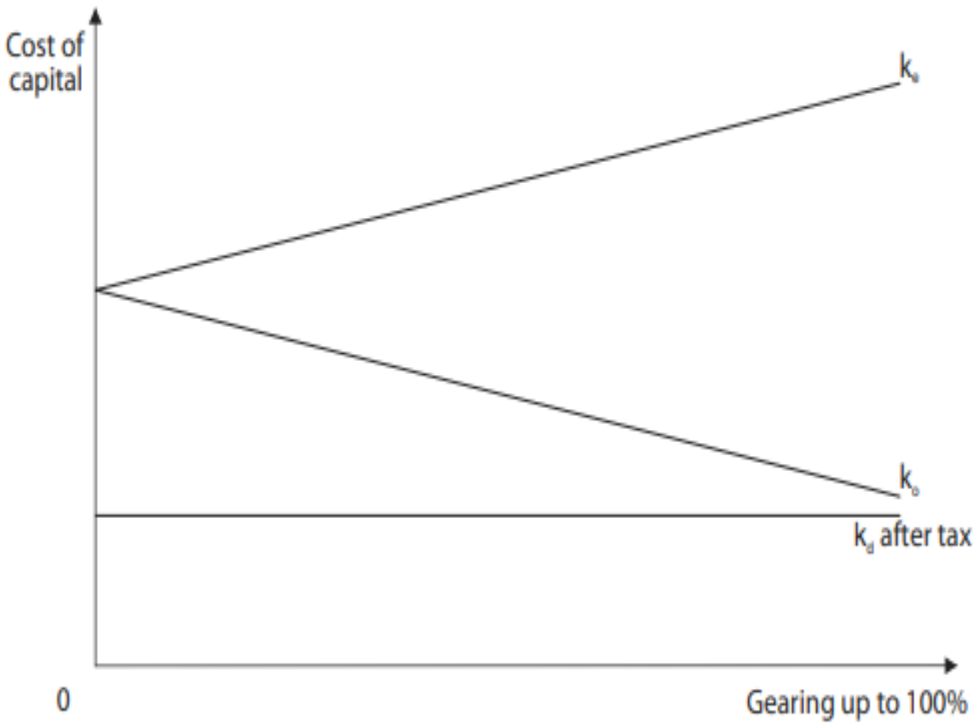
This would be represented on a graph as shown below:



(iv) **Miller and Modigliani theory after tax**

their theory to admit that tax relief on interest payments does lower the weighted average cost of capital. The savings arising from tax relief on debt interest are the e tax shield, they argued that the weighted average cost of capital continues to fall, up to gearing of 100%, This suggests that companies should have a capital structure made up entirely of debt.

however, this does not happen in practice due to the existence of market imperfections and other practical issues which undermine the tax advantages of debt finance.



c)

(i) A Crypto currency is a digital currency designed to work as a medium of exchange through computer network that is not reliant on any central authority, such as government or bank. To uphold or maintain it.

It is a decentralized system for verifying that the parties to a transaction have the money they claim to have, it eliminates the need for traditional intermediaries.

The advantages of cryptocurrencies include cheaper and faster money transfer, the disadvantage include their price volatility, high energy consumption for mining activities and sometime used in criminal activities and money laundering but cryptocurrency is not backed by any public or private entity. Therefor it has been difficult to make a case for their legal status in different financial jurisdictions Throughout the world.

(ii) Fintech: Financial technology that used to describe new technology that seeks to improve and automate the delivery and use of financial services at its core, Fintech is utilized to help companies, business owners and consumers better manage of their financial operations, process and lives. It is composed of specialized software and algorithms that are used on computers and smartphones.

Examples of Fintech include like payment apps like Tap and Go, peer-to-peer lending apps (bank application) ……..

d) briefly explaining These two managerial finance definitions

(i) Altman's Z-Scores The model is used by investors and analysts to inform them of the financial risk associated with potential investments because of its usefulness in predicting corporate failure(chances of a business going bankrupt in the next two year), Altman's Z-score model combines five financial ratios to predict the probability of a company becoming insolvent in the next two years **,** It increases the **model's** accuracy when measuring the financial health of a company and its probability of going bankrupt.

(ii) Corporate Raider: Corporate raider is a title given to organizations/individuals who target companies to acquire, and, if successful, will in the post-acquisition period carve the business into its component parts with a view to selling/strip the individual parts at a profit. Ultimately, the corporate raider may retain ownership of a small element (if any) of the acquired enterprise. Corporate raiders are also known as 'asset strippers.

QUESTION SIX

Marking Guide	Marks
a) growth in Dividend (1 Mark for formula, 1 Mark for computation)	2
b) value per share of KAMO ltd using	
i)	
i) Asset based model (1 for formula, 1 Mark for updating Total asset balance, 2 Mark for computation of MPS)	4
ii) Dividend valuation model (1 for formula, 2 marks for computation)	3
iii) Price earning (P/E) ratio (1 for formula, 2 marks for computation)	3
c)	
defense tactics to avoid hostile takeover bid (1 for each, Maximum 4)	4
d)	
key considerations in performing financial due diligence (1 for each, Maximum 4)	4
	20

Model Answers

a) Dividend growth model

Growth in Dividend = $\sqrt[4]{\frac{2023\ Dividend}{2019\ Dividend}}$ -1= $\sqrt[4]{\frac{26,235,000}{15,000,000}}$ -1= 15%

b)

(i) **Asset based model**

we have to update Total asset figure financial statement	
	FRW (000)
Total asset	500,000
add: revaluation upward of PPE (300-250)	50,000
less: revaluation downward of motor vehicles (120-100)	(20,000)
Less: Bad debt	(5,000)
Adjusted Total asset	**525,000**

Net asset approach	FRW (000)
adjusted Total asset	**525,000**
Less good will	30,000
Less: total liabilities	50,000
Net asset value of equity	445,000
Divide by Number of ordinary shares	10,000
Value per share	45

Under Nest asset-based model MPS will be equal to FRW 45,000

Net tangible assets are the value in the statement of financial position of the tangible non-current assets (net of depreciation) plus current assets, minus all liabilities.

Intangible assets (including goodwill) should be excluded, unless they have a market value (for example patents and copyrights, which could be sold)

(ii) **Dividend valuation model**

Current Dividend paid = 26,235
Number of shares = 10,000
Dividend per share = 26,235 / 10,000 = 2.6235

Ke = $\frac{Do(1+g)}{MPS}$ + g

MPS = $\frac{Do(1+g)}{Ke-g}$ = $\frac{2.6235(1+0.15)}{20\%-15\%}$ = **60.340**

Under Dividend valuation model MPS will be equal to FRW 60,340

(iii) **Price earning (P/E) ratio**

Price/ Earning ration = $\frac{Market\ Price\ per\ share}{Earning\ per\ share} = \frac{MPS}{EPS}$

The P/E ratio of an unquoted company's shares might be around 2/3 f the P/E ratio of a similar public company with a full stock market listing.

Price earning ration to be used for KAMO Ltd = 12 * 2/3 = 8

MPS = Price/earnings ratio * EPS

EPS = $\frac{\text{Profit/loss attributable to ordinary shareholders}}{\text{Weighted average number of ordinary shares}}$

EPS = $\frac{70,000,000}{10,000}$ = 7,000

MPS = Price/ Earnings ratio * EPS

MPS = 8 * 7,000 = 56,000

c) Where an unwelcome or hostile bid is received from another company there are a number of steps that can be taken to thwart it:

1. Reject the bid on the basis that the terms are not good enough.
2. sue a forecast of attractive future profits and dividends to persuade shareholders to hold onto their shares.
3. Revalue any undervalued assets.
4. Mount an effective advertising and P.R. campaign.
5. Find a "White Knight" that is more acceptable this involves to seek out another company for a more suitable merger.
6. Make a counter bid – generally only possible if the companies are of a similar size.
7. Arrange a Management Buyout.
8. Attack the credibility of the offer or the offeror itself, particularly if shares are offered - e.g. commercial logic of the takeover, dispute any claimed synergies, criticize the track record, ethics, future prospects etc. of the offer or.
9. Appeal to the loyalty of the shareholders.
10. Encourage employees to express opposition to the merger
11. Persuade institutions to buy share
12. Poison pill:
13. Golden parachutes
14. Changes to the corporate charter
15. Re-capitalization: one way for a company to avoid a merger is to make a major change in its capital structure, for example, the company can issue larges volume of debt and initiate a self-offer or buy back of its own stock.

d) The main objective of Due Diligence is to confirm the reliability of the information which has been provided and has been used in making an investment decision. Changes in these primary assumptions may have a significant impact on the price to be paid and possibly even raise questions on the wisdom of proceeding with the transaction. This is a very useful process and at minimum will provide additional information on the potential target

The following should be considered in performing Due Diligence:

1. **Earnings** – audited financial statements are prepared to comply with statutory/tax requirements. To assess the true quality of earnings an in-depth review of the business and detailed management accounts must be performed. Adjustments may need to be made for one-off events, lost customers, discontinued products, changes in cost structure etc. Also, evaluate non-financial information e.g. quality of risk management, quality of management, corporate governance etc.

2. **Forecasts –** may be prepared on a high-level basis with oversimplified assumptions. The assumptions may be difficult to reconcile with historical performance.

3. **Assets** – write-offs for aged debtors, obsolete stock, idle assets, capitalized costs etc. may need to be made. Also, clarify which assets are to be included in the transfer and agree valuations.

4. **Undisclosed Liabilities** – substantial hidden tax liabilities, penalties and exposures may subsequently arise. Evaluate and possibly, seek protection by obtaining warranties or indemnities against future potential tax issues.

5. **Trading Performance** – related party transactions are often conducted under special pricing terms (e.g. business support services not charged by parent company). The impact on the business of a change in ownership should be assessed to reflect normal commercial arrangements.

6. **Controls** – additional investment in new reporting systems may be required to obtain the quality of information needed to properly monitor performance. Also, ensure the necessary staff are locked-in for an appropriate period.

7. **Balanced View** – issues should be weighed against the upside potential in a balanced way. Examples of the upside might include synergies, optimal financing structure, access to new markets, new management team.

8. **Tax Structure** – effective tax planning is a key component in delivering value as quickly as possible

END OF MARKING GUIDE AND MODEL ANSWERS