CERTIFIED PUBLIC ACCOUNTANT

INTERMEDIATE LEVEL EXAMINATIONS

I1.1: MANAGERIAL FINANCE

DATE: THURSDAY, 27 APRIL 2023

MODEL ANSWER AND MARKING GUIDE

SECTION A

QUESTION ONE

Marking Guide	Marks
a) Factors which influence the formulation of working Capital Policy (Award 1 Mark for stating and 1 Mark for explanation (Max 10 Marks)	**10**
b) Calculate liquidity ratio and networking capital ratio	**9**
i. Current ratio (Award 0.5 Mark for formula and1 Mark for calculation)	1.5
ii. Quick ratio (Award 0.5 Mark for formula and 1 Mark for calculation)	1.5
iii. Account receivable period (Award 0.5 Mark for formula and 1 Mark for calculation)	1.5
iv. Account payable payment period (Award 0.5 Mark for formula and 1 Mark for calculation)	1.5
v. Inventory turnover ratio (Award 0.5 Mark for formula and 1 Mark for calculation)	1.5
vi. Net working capital turnover ratio (Award 0.5 Mark for formula and 1 Mark for calculation)	1.5
c) Working capital cycle (Award 1 Mark for each element of WC Max 2) (Awards 1Marks for Correct explanation)	**6**
Total Marks	**25**

Model answers

a) **Five factors which should be considered when formulating the working Capital Policy**

Working capital policies can cover the level of investment in current assets. The way in which current assets are financed, and the procedures to follow in managing elements of working capital such as inventory, trade receivable, cash and trade payables.

The objectives of working capital management are liquidity and profitability and working capital management help to achieves this objective.

There are several factors which determine the firm's working capital needs. They however include:

1. Nature and size of the business.

The nature of the business influences the formulation of working capital policy because it influences the size of the elements of working capital. For example, manufacturing company may have high level of inventory and trade receivables compared to a service company.

2. Firm's manufacturing cycle (operating cycles)

The length of the operating cycle, together with the desired level of investment in current assets will determine the amount of working capital finance needed. Therefore, working capital policies will be formulated so as to optimize as much as possible the length of operating cycles which are inventory conversion period, Account receivable payment period and accounts payable payment period.

3. Firm's credit policy (Terms of trade)

Since a company must compete with each other to be successful a key factor in the formulation of working capital policy will be terms of trade offered by competitors. Terms of trade must be comparable with those of competitors.

4. Risk appetite of the company

A risk averse company will tend to operate with higher level of inventory and receivables than a company which is more risk- seeking.

Similarly, a risk averse company will seek to use long term finance for permanent Current asset and some of its fluctuating Current asset (Conservative policy) while a more risk seeking company will seek to use short term finance for fluctuating current assets as well as for a portion of the permanent current assets of the company (aggressive policy).

5. Business fluctuations (seasonality of the business)

During boom period the market there are high demand, more production, more stock and more debtors which mean more amount of working capital is require. While during depression period low demand less inventory to be maintained, less debtors so less working capital will be required

6. Availability of credit

Another factor related to credit policy is how much and how long period company is getting credit from its suppliers. If suppliers of raw materials are giving long-term credit, then company can manage with less amount of working capital where as if supplier are giving only short period credit, then company will require more working capital to make payment

7. Growth and expansion activities. (Scale of operation)

Firms planning to expand their activities will require more amount of working capital as for expansion they need to increase scale of production which means more raw materials, more inputs …. So more working capital also.

b)

	2022	2021
Current asset	40,750	34,500
Current liabilities FRW	22,600	22,650
i) Current ratio	40,750/22,600	34,500/22,650
	1.8	1.52
ii) Quick ratio	(40,750-8,500)/22,600	(34,500 - 7,000)/22,650
	1.43	1.21
iii)Accounts receivable days	(2,550/ (45,000*0.8)) *365 days	(4,050 / (35,000*0.8)) *365 days
	25.9 days	52.8 days
iv)Accounts payables days	= (5,500/39,000) 365 Days	= (5,200/28,000) *365 days
	51.5 days	67.8 days
v) Inventory days	= (8,500/39,000) *365 days	= (7,000/28000) *365 days
	79.6 days	91.3 days
vi)Net working capital turnover ratio	45,000/18,150	35,000/11,900
	2.48	2.94
c) Working capital cycle (operating cycle)		
Inventory days	79.6	91.3
Add: Account receivable days	25.9	52.8
Less: Accounts payables days	(51.5)	(67.8)
Working capital cycle (operating cycle)	54 Days	76 Days

Current ratio: $\dfrac{current\ asset}{current\ liabilties}$

Quick ratio: $\dfrac{current\ asset-inventory}{current\ liabilties}$

Sale revenue / Net working capital ratio: $\dfrac{Sales\ revenue}{CA-CL}$

Account receivable days: $\dfrac{Trade\ reveivable}{Credit\ sales\ revenue} * 365\ days$

Account Payable days: $\dfrac{Trade\ payables}{purchase\ or\ cost\ of\ sales} * 365\ days$

Inventory turnover period days: $\dfrac{average\ inventory}{cost\ of\ sales} * 365\ days$

Current ratio	2:1
Quick ratio	1:1
Net working capital turnover ratio	3: 1
Working capital cycles	45 days

Comments on ratio

✓ Current ratio of KANAMUGIRE Co Ltd in two consecutive years was improved from 1.52 to 1.8 this means that company have sufficient cash to finance its short-term obligation when its fall due, but when compared to industry level's current ratio of 2:1 KANAMUGIRE Co Ltd have to improve the management of working capital in order to avoiding the liquidity problems:

✓ Quick ratio of KANAMUGIRE Co Ltd in two consecutive year was improved from 1.21 to 1.43 quick ratio measures a company's capacity to pay its current liabilities without a need to sell its inventory or obtain additional financing. Quick ratio is considered a more conservative measure than current ratio; so compare to industry level 1:1 company is in good position to meet its obligation.

✓ Working capital cycle (operating cycle) refers to days required for a business to receive inventory, sell the inventory and collect cash from sell of the inventory, KANAMUGIRE Co Ltd Working capital cycle (operating cycle) was improved from 76 days up to 54 days with a reduction of 22 days so the liquidity problem is reduced but compared to industry level of 45 days for KANAMUGIRE Co Ltd, it will be difficult to compete on the market without a proper management of its operating cycles.

✓ Net working capital Turnover ratio is ratio between net revenue of the business and its net working capital. It can be interpreted as the amount of money sales created for each amount of working capital owned, high turnover ratio implies the company's working capital management is more efficient. KANAMUGIRE Co Ltd networking capital is worse because it was declined from 2.94 up to 2.48 which is not good.

QUESTION TWO

Marking Guide

Description	Marks
a) Calculation of WACC	**14**
Cost of Equity (Award 1 Mark for formula, and 1 Mark for the answer)	2
Cost of preference (Award 1 Mark for formula and 1 Mark for the answer)	2
Cost of 12% loan note redeemable at par (Award 1 Mark for IRR formula, 4 Marks for trial and error, 1 Marks for the answer of IRR)	6
Weighted average cost of capital (Award 1 Marks for formula, 3 Marks for answer)	4
b) **Comment of new loan on the:**	
i. Cost of equity	**1**
ii. Cost of debt	**1**
c) Financial manager on suggestion of introducing new loan for optimum capital structure on:	
Tradition View	**2**
Modigliani and Muller Model	**2**
Total Marks	**20**

Model Answers

a)

1. **Cost of equity** $\text{Ke} = \frac{Do(1+g)}{MPex\ div} + g$

Where: Do: Current dividend

        g = Dividend growth rate

        MP ex div = market price of share after payment of dividend

Ke $= \frac{50(1+5\%)}{500} + 5\% = 15.5\%$

2. **Cost of Preference shares** $\text{Kp} = \frac{Do}{MPex\ Div}$

Kp= cost of preference

Do: dividend of preference shareholder

MP ex div: Market price of Preference Share After payment of current dividend

Kp $= \frac{(100*7.5\%)}{80} = 9.4\%$

3. Cost of 12% loan note redeemable at par the IRR will be used.

Year	Detail	Cash flow	DF (10%)	PV	DF (5%)	PV
0	Market value of loan note	1,200	1	1,200	1	1,200
1 up to 6	interest (1-tax) (12% *1,000)*0.7	84	4.355	365.82	5.757	483.588
6	redeemable at per	1000	0.564	564	0.746	746
	NPV			**(270.18)**		**29.588**

IRR= LDF+ (HDF-LDF) $* \dfrac{NPV\ @\ LDF}{NPV\ @LDF - NPV\ @HDF}$

LDF= Lower discount factor

HDF= Higher discounting factor

NPV@LDF = Net present value at lower discounting factor

NPV@HDF= Net present value at higher discounting factor

IRR= LDF+ (HDF-LDF) $* \dfrac{NPV\ @\ LDF}{NPV\ @LDF - NPV\ @HDF}$

IRR= 5% + (10%-5%) $* \dfrac{29.588}{29.588 - (-270.18)}$ = 5.5%

WACC = $ke\ \dfrac{MV\ e}{MV\ E + MV\ PR + MVd} + kp\ \dfrac{MV\ p}{MV\ E + MV\ PR + MVd} + kd\ \dfrac{MVd}{MV\ E + MV\ PR + MVd}$

Details	Market Value	Cost of source of finance	Weighting
MV of equity	250,000	15.5%	38,750
MV of preference share	20,000	9.4%	1,880
MV f 12% loan note	42,000	5.5%	2,310
Total market value	**312,000**		**42,940**

WACC =42,940/312,000 = 14%

b) **impact of the new loan on**

Cost of equity: The cost of equity will rise if the company takes new loan, the interest and debt repayment burden will increase the risk that Ntuma co Ltd will not able to pay dividend to the ordinary shareholders and increase the risk that Ntuma CO Ltd will run into financial difficulties through not being able to meet its loan commitments. if liquidation occurs, debtholder will be ranked before shareholders. Equity will demand an increased level of return to compensate for this risk.

Cost of debt: According to traditional view, the cost of debt will remain unchanged up to certain level of gearing. Above that level it will increase because of the financial risk that the company will not be able to meet its commitment.

c) Impact of the new loan on weighted average cost of capital according to Traditional view

Weighted Average Cost of Capital: According to traditional view the WACC will fall initially as debt capital is introduced, because debt at first has a lower cost than equity, being lower risk investment.

However, the WACC will rise as risk levels increase, resulting in the rise of cost of equity become more significant. and ultimately the cost of debt will rise. the optimum level of gearing is where the company's weighted average cost of capital is minimized.

The traditional approach however has been supported due to tax deductibility of interest charges and market imperfections.

Modigliani and Muller

MM Model assuming a perfect market and ignore tax, demonstrated that the WACC remained constant as a company increased its gearing. They argued that the increase in the cost of equity due to financial risk exactly balanced the decrease in WACC caused by the lower cost of debt.

In perfect market, there is no bankruptcy risk so the WACC and therefore the market value of the company is constant at all gearing level. The market value of the company depends on its business risk only. That means that company cannot reduce its WACC to a minimum.

The arguments are based on the following assumptions:

- Capital markets are perfect and thus there are no transaction costs.
- The average expected future operating earnings of a firm are represented by subjective random variables.
- Firms can be categorized into "equivalent return" classes and that all firms within a class have the same degree of business risk.
- They also assumed that debt, both firms and individual's is riskless.
- Corporate taxes are ignored.

MM Model assuming a perfect market and tax does exist, interest payment on debt reduce tax liability, so it could be argued that WACC falls as gearing increased and company can reduce its WACC to a minimum by taking on a s much debt as possible.

But The assumption of a perfect capital market is unrealistic and so bankruptcy risk and other cost of servicing debt will increase as gearing increase and it will offset the value of the tax shield on loan.

In conclusion, NTUMA Co Ltd should be able to reduce its WACC by gearing up, but the minimum achievable may be hard to determine.

QUESTION THREE

Making guide

Description	Marks
a)	
Correct Net cash flow after Inflating selling price, variable cost, Fixed production O/H (Award 0.5 Marks each, max 2.5 Marks)	2.5
Computation of tax on cash flow one year in arrears Award 0.5 Marks each, max 2.5 Marks)	2.5
Computation of tax relief on Tax allowable depreciation (Award 0.5 Marks each, max 2.5 Marks)	2.5
Incremental in working capital	2.5
NPV	0.5
Decision	0.5
b) Return on Capital Employed/Accounting rate of Return	2
c) Application of NPV method in Capital rationing	2
Total	**15**

Model Answers

a) **Net Present Value Analysis**

Years	0	1	2	3	4	5	6
Selling price (W1)		223,125, 000	234,281, 250	289,406, 250	273,488, 906	191,442, 234	
Variable O/H cost (W2)		(53,040, 000)	(55,161, 600)	(67,491, 840)	(63,172, 362)	(43,799, 504)	
Contribution		**170,085, 000**	**179,119, 650**	**221,914, 410**	**210,316, 544**	**147,642, 730**	
Fixed Production O/H (W3)		(43,775, 000)	(45,088, 250)	(54,636, 350)	(50,647, 896)	(34,778, 222)	
Net cash flow		**126,310, 000**	**134,031, 400**	**167,278, 060**	**159,668, 648**	**112,864, 508**	
Tax (30%) one year arrear	0		(37,893, 000)	(40,209, 420)	()50,183, 418	(47,900, 594)	(33,859, 352)

Years	0	1	2	3	4	5	6
Tax saving on Capital Allowance (W5)			26,250,000	19,687,500	14,765,625	11,074,219	25,722,656
Initial investment	(350,000,000)						
Working capital (W4)	(50,000,000)	(5,000,000)	(5,500,000)	(6,050,000)	(6,655,000)	73,205,000	
Scrap value						25,000,000	
After tax cash flow	**400,000,000**	**121,310,000**	**116,888,400**	**140,706,140**	**117,595,855**	**174,243,132**	**(8,136,696)**
Discounting factor (15%)	1	0.869	0.756	0.657	0.572	0.497	0.432
Present value	**400,000,000**	**105,418,390**	**88,367,630**	**92,443,934**	**67,264,829**	**86,598,837**	**(3,515,053)**
Present value of cash in	**436,578,567**						
NPV	**36,578,567**						

Decision

The proposal of buying new machine is worthwhile, due to It have a positive NPV of **36,578,567, this will help to**
maximize shareholder welfare

Working one

Years	0	1	2	3	4	5
selling price (inflated by 5 % per annum)	2,500	2,625	2,756.25	2,894.0625	3,038.766	3,190.7
Demand (units)		85,000	85,000	100,000	90,000	60,000

Selling price		223,125,000	234,281,250	289,406,250	273,488,906	191,442,234

Working two

Variable production (Inflated on 4% per annum)	600	624	649	675	702	730
Demand (units)		85,000	85,000	100,000	90,000	60,000
Variable cost		**53,040,000**	**55,161,600**	**67,491,840**	**63,172,362**	**43,799,504**

Working three

Fixed production O/H (inflated by 3% per annum)	500	515	530	546	563	580
Demand (units)		85,000	85,000	100,000	90,000	60,000
Fixed production overhead		**43,775,000**	**45,088,250**	**54,636,350**	**50,647,896**	**34,778,222**

Working four

	0	1	2	3	4	5
Initial working capital required		50,000,000	55,000,000	60,500,000	66,550,000	73,205,000
incremental increase per year (10% Per annum	(50,000,000)	(5,000,000)	(5,500,000)	(6,050,000)	(6,655,000)	73,205,000

Working Capital was required at start of the year, so Working Capital of Y1 has to be recorded in Y0, At the end of time horizon working capital has to be recovered in Y5

Working five

Year	Cost / NBV	Depreciation rate	Tax allowable depreciation	Tax rate	Tax saving
1	350,000,000	25%	87,500,000	30%	26,250,000
2	262,500,000	25%	65,625,000	30%	19,687,500
3	196,875,000	25%	49,218,750	30%	14,765,625
4	147,656,250	25%	36,914,063	30%	11,074,219
5	110,742,188		**85,742,188**	30%	25,722,656
Scrap value	(25,000,000)				
	85,742,188				

Working six
by fisher formula

1+nominal rate = (1+ real rate) * (1 + inflation rate)

1+ N =(1+ 9.5%) *(1 + 5%)

1+N=1.14975

N=1.14975-1

N=0.14975 = 15%

b)   accounting rate of return

Total net before tax cash flow

126,310,000	134,031,400	167,278,060	159,668,648	112,864,508

= 700,152,615

Total depreciation = 350,000,000 -25,000,000 = 325,000,000

Average annual accounting profit = (700,152,615 – 325,000,000)/5 = 75,030,523

Average investment (350,000,000 + 25,000,000) / 2= 187,500,000

Average investment $= \dfrac{Initial\ Investment\ +disposal\ value}{2}$

Return on capital employed $= \dfrac{Estimated\ average\ \ annual\ accounting\ profits}{Estimated\ average\ investment} * 100\ \%$

Return on capital employed $= \dfrac{75,030,523}{187,500,000} * 100\% = 40\%$

Kanyange Company Ltd has a target return on capital employed of 20 % and the ROCE of the investment is 40% which is above target return. The purchase of the machine is therefore recommended

c)   Application of NPV method in Capital rationing

The NPV decision rule required that a company invest in all project that have a positive net present value. This assumes that sufficient funds are available for all potential projects, which is only true in a perfect capital market. When insufficient funds are available, that is when capital is rationed and project cannot be selected by ranking absolute NPV. choosing a project if projects are divisible, they can be ranked using the profitability index in order to make optimum selection. If the projects are not divisible, different combination of available project must be evaluated to select the combination with the highest NPV.

SECTION B

QUESTION FOUR

Marking Guide

Description		Marks
a)		
i)	Expected Return (Award 1 Mark for each company's ER)	2
ii)	Determine standard deviation (Award 1 Mark for each Company's SD for each company)	2
iii)	Calculation of Covariance (2 Marks) Calculation of coefficient of correlation (Award 1 Mark for formula of Cov $_{(N,H)}$ and 1 Mark for computation	4
iv)	Determine Expected portfolio returns (Award 1 Mark for formula and 1 Mark for calculation)	2
v)	Determine expected portfolio risk (Award 1Mark for formula and 2 Marks for calculation)	3
b) Assumption of CAPM (Award 1Mark for each assumption, Max 5 Marks)		5
c) Application of CPAM in the real world		2
		20

a) **Model Answers**
i) Formula

Expected return (EV)= $\sum Probability * expected\ return$

Horizon Co Ltd E (rx) = (0.2*0.24) +(0.6*0.12) +(0.2*0) = 12%

NN Ltd　E (rx) = (0.2*0.05) +(0.6*0.30) +(0.2*-0.05) = 18%

Expected portfolio return

Total investment available 10,0000

Weighting Investment in Horizon Ltd: (7,500,000/10,000,000) *100% =75%

Weighting Investment in NN Co Ltd: (2,500,000/10,000,000) *100% =25%

Expected portfolio return: **(12% * 75%) +(18% * 25%) = 13.5%**

ii) Standard Deviation

Standard Deviation = $\sqrt{\sum P * [(X - EV)\ \char`\^2]}$

SD for Horizon Co Ltd E (rx) =$\sqrt{0.00576}$ = 7.59%

SD for NN Ltd　E (rx) = $\sqrt{0.0226}$ =15.03%

(iii), (iv) and (v)

Working for NN Co Ltd

State of economy	Probability (p)	return from NN Ltd (Xn)	Expected return (P*Xn)	Expectation (Xn-EVn)	(Xn-EVn)^2	Variance P*(Xn-EVn)^2
Boom	0.2	0.05	0.01	(0.13)	0.0169	0.00338
Normal	0.6	0.3	0.18	0.12	0.0144	0.00864
Recession	0.2	-0.05	(0.01)	(0.23)	0.0529	0.01058
Expected return (EVn)			0.18			0.0226

Working for Horizon

State of economy	Probability (p)	Return from Horizon Ltd (Xh)	Expected return (P*Xh)	Expectation (Xh-EVh)	Deviation (Xh-EVh)^2	Variance P*(Xh-EVh)^2
Boom	0.2	0.24	0.05	12%	0.0144	0.00288
Normal	0.6	0.12	0.07	0%	-	0
Recession	0.2	0.0	-	-12%	0.01	0.00288
expected return (EV h)			0.12			0.00576

Covariance of return = $\sum[Xn - EVn)(Xh - EVh)] * P$

State of economy	Probability (P)	Expectation (Xn- EVn)	Expectation (Xh- EVh)	Co- variance [(Xn-EVn)(Xh-EVh)] *P
Boom	0.2	-0.13	0.12	(0.0031)
Normal	0.6	0.12	0.0	-
Recession	0.2	-0.23	-0.12	0.0055
Co-variance return N,H				0.0024

Given that Cov (return A, Return b) = St. dev a* St. dev b * Coefficient of correlation A, B

Coefficient of correlation $R_{A, B} = \frac{Cov\ (ra, rb)}{St.dev\ A\ *\ St.dev\ b}$

Coefficient of correlation A, B$= \frac{0.0024}{0.0759 * 0.1503} = +0.2104$

Portfolio risk: $\sqrt{(Wh^2 * St\ h^2) + (Wn^2 * St\ n^2) + 2\ Wh * Wn * Cov(N, H)}$

Portfolio risk: $\sqrt{(0.75^2 * 0.0759^2) + (0.25^2 * 0.1503^2) + 2 * 0.75 * 0.25 * 0.0024}$

Portfolio risk= 7.45%

b) Assumption of CAPM

- Investors are rational and they choose among alternative portfolios on the basis of each portfolio's expected return and standard deviation.
- Investors are risk averse
- Investors maximize the utility of end of period wealth. Thus, CAPM is a single period model.
- Investors have homogeneous expectations with regard to asset return. Thus, all investors will perceive the same efficient set.
- There exist a risk-free asset and all investors can borrow and lend at this rate. • All assets are marketable and perfectly divisible.
- The capital market is efficient and perfect.

c) Many of the Underlying Assumption of CAPM are violated in the real world, does that fact invalidate the model's conclusions? explain

Empirical studies have note completely invalidated CAPM. It is still applicable in computing of cost of equity, valuation of securities and gearing adjustments among others.

However, the existence of frictions in the market such as taxes, transaction costs, information costs and information asymmetry tend to invalidate CAPM.

QUESTION FIVE

 Marking Guide

	Marks
a)	
Dividend policy for each company	
Constant payout ratio dividend policy (Award 1 Mark for calculation and 2 Marks for stating the dividend policy)	3
Constant amount per share (fixed D.P.S.) dividend policy (Award 1 Mark for calculation and 2 Marks for stating the dividend policy)	3
Residual Dividend policy (Award 2 Mark for calculation and 2 Marks for stating the dividend policy)	4
b) Differentiation of dividend payment model	
Stock split	1
Reverse split	1
c) Dividend payment as a signal to attract potential investors	3
d) Interests of different stakeholders to company	5
Total	**20**

Model Answer

a) Dividend payout ratio $= \dfrac{Total\ Dividend\ paid}{Earning} * 100\%$

Dividend per share $= \dfrac{Total\ Dividend\ paid}{Number\ of\ share}$

This Formula Show us the proportion of Earnings which was paid out as dividends and how much was retained.

Company A						
	Earnings	CAPEX	Residual	Dividend Paid	Dividend Payout ratio	Dividend per share
2018	900,000	401,000	499,000	315,000	35%	315
2019	800,000	500,000	300,000	280,000	35%	280
2020	600,000	700,000	(100,000)	210,000	35%	210
2021	750,000	350,000	400,000	262,500	35%	263
2022 (recent year)	850,000	390,000	460,000	297,500	35%	297

Based on the above calculation, Company A use **Constant payout ratio dividend policy** where This is where the firm will pay a fixed dividend rate, The DPS would therefore fluctuate as the earnings per share changes.

Dividends are directly dependent on the Company earnings ability and if no profits are made no dividend is paid.

This policy creates uncertainty to ordinary shareholders especially who rely on dividend income and they might demand a higher required rate of return.

Company B						
	Earning	CAPEX	Residual	Dividend	Dividend Payout ratio	Dividend per share
2018	1,250,000	390,000	860,000	400,000	32%	500
2019	950,000	250,000	700,000	450,000	47%	500
2020	730,000	600,000	130,000	600,000	82%	500
2021	680,000	150,000	530,000	600,000	88%	500
2022 (recent year)	968,000	100,000	868,000	750,000	77%	500

Based on the above calculation, Company B **Constant amount per share (fixed D.P.S.)**

The DPS is fixed in amount irrespective of the earnings level. This creates certainty and is therefore preferred by shareholders who have a high reliance on dividend income. It protects the firm from periods of low earnings by fixing, DPS at a low level. This policy treats all

shareholders like preferred shareholders by giving a fixed return. The DPS could be increased to a higher level if earnings appear relatively permanent and sustainable.

Company C						
	Earning	CAP.EX	Residual	Dividend	Dividend Pay out	Dividend per share
2018	1,050,000	420,000	630,000	630,000	60%	158
2019	980,000	462,000	518,000	518,000	53%	130
2020	1,500,500	508,200	992,300	992,300	66%	248
2021	900,000	559,020	340,980	340,980	38%	85
2022 (recent year)	605,000	614,922	0	0	0%	-

Dividend payout ratio= $\frac{Total\ Dividend\ paid}{Earning} * 100\%$

Dividend per share = $\frac{Total\ Dividend\ paid}{Number\ of\ share}$

Based on the above calculation, Company C use **Residual dividend Policy**

Under this policy dividend is paid out of earnings left over after investment decisions have been financed. Dividend will only be paid if there are no profitable investment opportunities available. The policy is consistent with shareholders wealth maximization.

b) Differentiate stock split and reverse split

Stock split: This is where a block of shares is broken down into smaller units (shares) so that the number of ordinary shares increases and their respective par value decreases at the stock split factor. Stock split is meant to make the shares of a company more affordable by low-income investors and increase their liquidity in the market.

Reverse split: A reverse split is the opposite of stock split and involves consolidation of shares into bigger units thereby increasing the par value of the shares. It is meant to attract high income clientele shareholders

c) Discuss to the management on using Dividend payment as a signal to attract investors

The ultimate objective in any financial management decisions is to maximize shareholders' wealth. This wealth is basically represented by the current market value of the company, which should largely be determined by the cash flows arising from the investment decisions taken by management. Although the market would like to value shares on the basis of underlying cash flows on the company's projects, such information is not readily available to investors. But the directors do have this information. The dividend declared can be interpreted as a signal from directors to shareholders about the strength of underlying project cash flows. Investors usually expect a consistent dividend policy from the company, with stable dividends each year or, even better, steady dividend growth. A large rise or fall in dividends in any year can have a marked effect on the company's share price. Stable dividends or steady dividend growth are usually

needed for share price stability. A cut in dividends may be treated by investors as signaling that the future prospects of the company are weak. Thus, the dividend which is paid acts, possibly without justification, as a signal of the future prospects of the company. The signaling effect of a company's dividend policy may also be used by management of a company which faces a possible takeover. The dividend level might be increased as a defense against the takeover: investors may take the increased dividend as a signal of improved future prospects, thus driving the share price higher and making the company more expensive for a potential bidder to take over.

If the management pays high dividends, it signals high expected profits in future to maintain the high dividend level, this would increase the share price/value and vice versa.

d) The main stakeholders and their interest to the company:

i. Investors-usually their goal will be to maximize the wealth which they have as a result of the ownership of the shares in the company

ii. The Government - payment of taxes, rates, provide employment.

iii. Customers - provision of service/goods at fair price, quality, on time etc

iv. The Community – sponsorship, charities, install environmental measures.

v. Loan Creditors – seek security, repayment of loan interest and principal.

The relative importance of the various groups may differ, possibly depending on company size and management style. Management will be concerned with the value of the firm as it satisfies one of the important stakeholders (Investors)

QUESTION SIX

Marking Guide

	Marks
a) Asset based model (Award 1 Mark for formula and 3 Marks for computation)	4
b) Price / Earning based model (Award 1 Mark for formula and 3 Marks for computation)	4
c) Earning yield Model (Award 1 Mark for formula and 3 Marks for computation)	4
d) Dividend yield basis without growth (Award 1 Mark for formula and 3 Marks for computation)	4
e) Dividend yield basis with growth (Award 1 Mark for formula and 3 Marks for computation)	4
Total	**20**

Model Answers

a) Asset Based Model Valuation

If we assume the purchaser will asset the revaluation amount of asset by the independent valuer, an asse valuation of equity would be as follow

	FRW 000
Noncurrent asset	
Land and building	1,075,000
Plant and equipment	480,000
Motor vehicles	45,000
Total Non-current asset	**1,600,000**
Add: Current asset	383,000
Total Tangibles asset	1,983,000
Less	
current liabilities	230,000
loan	400,000
Net tangible Asset Attributable to equity Holders	**1,353,000**

Value per share $= \frac{Net\ tangible\ asset}{Number\ of\ share}$

Value per share = 1,353,000 /300 = 4510

Unless the purchasing company intends to sell the asset acquired, it is more likely that a valuation would be based on earing

Note: Internally generated intangible asset is not included

b) Price/ Earning basis valuation

if the purchaser believes that earning over the last five years are an appropriate measure for valuation, we could measure the average earning in these years

P/E ratio$= \frac{Market\ price\ per\ share}{Earning\ per\ share}$ or $\frac{Market\ Value\ of\ Equity}{Total\ Earning\ attributable\ to\ equity\ holders}$

Market value = P/E Ratio * total earning

Average Earning =(90,000+80,000+105,000+90,000+100,000)/5 = 93,000

an appropriate P/E ratio for an earning basis valuation might be the average of the three publicly listed company for the recent year

	P/E ratio	
Murugo clinic	8.5	
Urugwiro Clinic	9	
Hora Clinic	10	
Average (8.5+9+10) / 3	9.17	
Reduced by 70% or by 50 %	6.42	4.58

P/E Ratio	Average earning	Value of equity	Number of shares	Value per share
6.42	93,000.00	596,750.00	300	1,989
4.58	93,000.00	426,250.00	300	1,421

When you value unquoted company, we use average price earnings ratio of 3 listed company but have to be reduce to Between 70% or 50% of average P/E ratio due to unlisted company is more risk done listed company

Forecast earning based on the company five years' plan will be as follow

Details	cash flow (grow to 4% for the next 4 years
year 1(for the next 12)	100,000
year 2	104,000
year 3	108,160
year 4	112,486
year 5	116,986
Total	541,632
Average	**108,326**

P/E Ratio	Average earning	Value of equity	Number of shares	Value per share
6.42	108,326	695,094	300	2,317
4.58	108,326	496,496	300	1,655

c) Earning yield Valuation of method

Earning yield $= \frac{EPS}{MPS} * 100\%$

EY is the reciprocal of the P/E ratio

P/E ratio	1 / P/E Ratio	EY	Average earning	Value of equity	Number of shares	Value per share
6.42	1/6.42	15.58%	93,000.00	597,060	300	1990.2
4.58	1/4.58	21.83%	93,000.00	425,940	300	1419.8

d) Dividend yield without growth

An average Dividend yield for the recent year for the three quoted companies will be used

Murugo clinic	12%
Urugwiro Clinic	11%
Hora Clinic	13%
Average	**12%**

The only reliable dividend figure for Iwacu Clinic was 45,000,000

Dividend yield basis

Market value of Equity $= \dfrac{Dividend}{Dividend\ yeild}$

Market value of Equity $= \dfrac{45.000}{12\%} = 375,000$

Value per share = 375,000 / 300 = 1250

e) Dividend yield with growth

Market value of Equity $= \dfrac{Dividend\ (1+g)}{Dividend\ yeild-growth}$

Market value of Equity $= \dfrac{45,000(1+4\%)}{12\%-4\%} = 780,000$ frw

Value per share = 780,000 / 300 = 2600

For dividend yield of quoted company also you can assume the purchaser can request high dividend yield due to IWACU Company was unlisted company then it can be high risk

END OF MARKING GUIDE AND MODEL ANSWER