CERTIFIED PUBLIC ACCOUNTANT

INTERMEDIATE LEVEL EXAMINATIONS

I1.1: MANAGERIAL FINANCE

DATE: THURSDAY, 28 JULY 2022

MARKING GUIDE AND MODEL ANSWER

SECTION A

QUESTION ONE

Marking Guide

	Marks
(A) Initial outflow	1
Incremental Cash Flow	2
Calculating depreciable Amount	1
Calculation of Tax shield	2
Net cash flow	2
Calculation of NPV	2
Decision	1
Maximum Marks	**11**
(B) Definition Equity Beta	**2**
(C) risk that Equity Beta measure	**1**
(D) Beta asset calculation	**2**
Equity Beta calculation	**2**
Interpretation	**1**
(E) Contrast Equity beta and Asset Beta	**2**
(F) Two (2) importance (1 mark for each)	**2**
(G) Challenges of ARR (1 mark for each)	**2**
Total	**25**

Model Answers

(A) Particulars		Present Value of Incremental Cash Flow								
	Year 1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Total
					FRW"000"					
Cash outflow (W1)	-300,000									
Cash in flows	0	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	
Tax (30%)	0	-15,000	-15,000	-15,000	-15,000	-15,000	-15,000	-15,000	-15,000	

	0								
Tax shield (W2)	0	22,500	22,500	22,500	22,500	22,500	22,500	22,500	22,500	
Net Cash flows	-300,000	57,500	57,500	57,500	57,500	57,500	57,500	57,500	57,500	
Disc Fact (15%)	1	0.87	0.756	0.658	0.572	0.497	0.432	0.376	0.327	
NPV	-300,000	50,025	43,470	37,835	32,890	28,578	24,840	21,620	18,803	-41,940

W1 **Incremental Initial cash out flow**

Particulars	Cost of new machine	Salvage of old machine	Cash outflow
	FRW "000"	**FRW "000"**	**FRW "000"**
Incremental Initial cash out flow	350,000	50,000	**300,000**

W 2 Calculation of tax shield (Tax shield= Depreciable amount*Tax rate)

Particulars	Cost	salvage value	Depreciable Amount	Depreciation (30%)	Tax shield
	FRW "000"	**FRW "000"**	**FRW "000"**	**FRW "000"**	**FRW "000"**
Tax Shield	350,000	100,000	250,000	75,000	22,500

Net present value (NPV) = PV of operating cash flow +PV of the tax shied and salvage -Initial cash outflow = **41,940,000 (NPV is negative)** Replacement has a negative NPV, so KTC should not replace the vehicles.

(B) Equity Beta is measure of market risk or performance or volatility, it is related to the extent to which return of the security move with the return of the overall market (covariance between investment and market divided by variance of the market)

(C) Equity Beta measures market risk

(D) KTC must use comparable Beta to arrive to the Beta of the new project. The following process must be followed:

-Ungearing comparable Beta using Capital structure of Horticulture company to obtain Asset Beta (ungeared Beta)

-Geared KTC using targeted capital structure

Asset Beta=

$\beta U = \beta L / (1 + (1 - T) (D/E))$

where:

$\beta L = \beta$ of a levered firm

$\beta U = \beta$ of an unlevered firm

T = tax rate

D = component of debt in capital structure

E = component of equity in capital structure

$\beta U = 1.3 / (1 + (1 - 0.3) (0.4/0.6))$

$\beta U = 0.78$

Equity Beta of KTC for horticulture project $= 0.78 = \beta L / (1 + (1 - 0.3) (0.25/0.75)) = 0.962$

The interpretation is that, KTC stock or share is less sensitive to the market changes, if the market goes down or up KTC share goes up/ down less than the market depending on the movement.

(E) Equity beta measure sensitivity of stock risk to the risk of the market (taking into account impact of debts) while Asset Beta measure market risks without the impact of debts.

(F) Two importance of having a diversified portfolio

- Diversification may reduce portfolio risks, as you add asset in the portfolio with less than perfect correlation reduces portfolio risks overall risks

-A Diversified portfolio also improve Portfolio return, as you add asset in the portfolio with highest risk adjusted return, improve overall portfolio return.

-Diversification may reduce concentration risks, adding Horticulture investment will reduce concentration risks of Transport sector.

(G)

• It does not take account of the timing of the profits.

• It is based on accounting profit which can be manipulated by management.

• Shareholders" wealth is determined by cash not profit which have non-cash items.

QUESTION TWO:

Marking Guide	Marks
(a)	
Calculation of cost of sales	0.5
Inventory days	0.5
Trade receivables days	0.5
Trade payables days	0.5
Maximum marks	**2**
b)	
Trade Receivables at end July	1
Trade Payable at end July	1
Cash flow need at end of July	1
Cash needed to support Operation	1
Maximum marks	**4**
(c) Fives techniques (2 for each technique)	**10**
(d) Four factors (1 Mark for each Factor)	**4**
Total	**20**

Model Answers

(a) Cash operating cycle is calculated by adding inventory days to the receivables days and subtracting Payable days.

Cost of sales=3,500,000*(1-30%) = 2,450,000

Inventory days=251,125*360/2,450,000=37 days

Trade receivables days=408,350*360/3,50,000=420 days

Trade payables days =186,700*360/2,450,000=28 days

Cash operating cycle of BURERA Ltd= 37+420-28=429 days

(b) Inventory at the end July 450,000+52,250= 502,250

	FRW "000"
Trade Receivables as at the start July	408,350
Outstanding May sales (40%)	(108,350)

June sales (60%)	(180,000)
July Credit sales	350,000
Trade Receivables at end July	**470,000**

	FRW "000"
Trade Payables as at the start July	186,700
Payment of 70% of trade payables	(130,690)
Payment of July Credit purchase	250,000
Trade Payable at end July	**306,010**

	FRW "000"
Overdraft at the start July	240,250
Cash received from customers	(288,350)
Cash Paid to supplier	130,690
Interest payment	70,000
Cash flow balance at end of July	146,500
Cash needed to support Operation	**299,090**

(C) Discuss Five techniques that BURERA Ltd could use in managing trade receivables

BURERA Ltd need to use the following techniques in managing trade receivables:

-Assessing credit worthiness of client before granting loans, this will help BURERA Ltd to reduce the risk of having bad debts, this can be by reviewing financial information published by clients and looking on credit rating agencies and probability of being downgraded.

-BURERA Ltd needs to create **receivable aging reports** and this help in follow up clients who are delays for payment, this can be by monitoring du days for planning calls, visiting clients to know financial that can have.

-**Offering early settlement discount**: creating early settlement discounts encourage clients to pay when they order goods and the discount will net with fees used while you are in recovery process.

-**BURERA Ltd need to upgrade credits term,** this will involves creating credit term that encourage credit to pay as early as possible.

-Using of **factoring:** BURERA Ltd need to use service of factoring (Professional instituting in receivable recovering) but cost benefit analysis should be taken into account. -Invoice Discounting: This is similar to factoring but only the finance service is used. Invoices are discounted (like Bills Receivable) and immediate payment, less a charge, is received.

- The follow-up procedures for slow payment: this will help BURERA Ltd to reduce long loan outstanding and improve overall receivables status.

(d) Factors that BURERA Ltd to be considered in determining the optimum level of cash to be held by company:

- Availability of finance: BURERA Ltd need to know how easily to get short term finance

-Availability of short-term investments and this will help BURERA Ltd to invest excess cash

-Other holding cash motives for BURERA Ltd like transaction motives, speculative or precautional motives

-Payment plan that BURERA Ltd has, this will be highlighted in cash budget

-It also depends on the strategic investment guideline of BURERA Ltd that dictate to have a certain minimum cash level.

QUESTION THREE

Marking Guide

	Marks
(a) Award 1 Mark on the final cash flow for each year maximum 5	5
Award 1 Mark on the Capital depreciation Allowance for each year	5
(b) Initial total investment calculation	1
(c) Award 0.5 mark on functions mention and 0.5 marks on explanation	4
	15

Model Answers

A.	"000"	"000"	"000"	"000"	"000"
Incremental Income	450,000	450,000	450,000	450,000	450,000
Incremental cost	325,000	325,000	325,000	325,000	325,000
Net Income	**125,000**	**125,000**	**125,000**	**125,000**	**125,000**
Tax (30%)	37,500	37,500	37,500	37,500	37,500
After Tax income	87,500	87,500	87,500	87,500	87,500
Tax saving (W1)	29,250	49,725	34,808	24,365	17,056
Net cash Flow	**116,750**	**137,225**	**122,308**	**111,865**	**104,556**

W1 Tax saving

Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
	FRW "000"	FRW "000"	FRW "000"	FRW "000"	FRW "000"
Cost of Asset	**650,000**				
Allowable depreciation Rate	0.5 or 50%				
Allowable cost for depreciation	325,000	552,500	386,750	270,725	189,508
Tax rate	0.3	0.3	0.3	0.3	0.3
Depreciation Allowance	97,500	165,750	116,025	81,218	56,852
Tax Saving (30%)	29,250	49,725	34,808	24,365	17,056

B

	RWF "000"
Initial Investment	650,000
Installation cost	25,000
Working capital	100,000
Total Initial Investment	**775,000**

C

BUGARAMA Ltd management must be aware that we have are four important managerial finance functions. These are:

a) Investment decisions: These decisions (also referred to as capital budgeting decisions) relates to the allocation offunds among investment projects.

b) Financing decisions: Financing decision refers to the decision on the sources of funds to finance investment projects.

c) Division of earnings decision (Dividend decision): The finance manager must decide whether the firm should distribute all profits to the shareholders, retain them, or distribute a portion and retain a portion.

d) Liquidity decision: The firm's liquidity refers to its ability to meet its current obligations as and when they fall due.

QUESTION FOUR

Marking Guide

	Marks
(a) Five reasons and explanation (1 mark for each reason)	5
(b) Mention two reasons (1 mark each reason)	2
Explanation (1.5 mark each reason)	3
(C) Mention two reasons (1 mark each reason)	2
Explanation (1 mark each reason)	2
(C) Mention three reasons (1 mark each reason)	3
Explanation (1 mark each reason)	3
	20

Model Answers

a) The following explain why The Arbitrage Pricing Theory (APT) is much more robust than the capital asset pricing model:

-The APT makes no assumptions about the empirical distribution of asset returns. CAPM assumes normal distribution.

-The APT makes no strong assumption about individuals' utility functions (at least nothing stronger than greed and risk aversion).

-The APT allows the equilibrium returns of asset to be dependent on many factors, not just one (the beta).

The APT yields a statement about the relative pricing of any subset of assets; hence one need not measure the entire universe of assets in order to test the theory.

There is no special role for the market portfolio in the APT, whereas the CAPM requires that the

market portfolio be efficient.

-The APT is easily extended to a multi-period framework.

b) Reasons why all clients of BEN Consult Ltd, want to held portfolio that that is located on capital market line.

- Capital market line is the line that depicting the highest return, so every rational investor needs highest return at given level of risk in portfolio.

-Portfolio that is in Capital market line shows the efficiency portfolio, remember efficiency portfolio also maximize return while minimizing risk (highest risk return tradeoff)

-Capital market line that include portfolio of risk-free asset and risks asset helps clients to achieve diversification in the portfolio because correlation between risk asset and risk-free asset is less than one.

-Capital market line combine risk free asset and risk asset will help the clients to buy and sell at risk free asset.

c) Reasons why investment in Rwandan government T-bond/T-bills is considered to be risk free investment.

- Probability of defaults for in government of Rwanda is zero, from the time government of Rwanda started borrowing through sell of bond/bills, no default has occurred.

-The ability of the government to print currency to service domestic (internal) Rwandan dominated instruments.

- The ability of Rwandan government as taxing institution to generate enough revenue to service domestic securities (T-bond/T-bills).

-Full faith and credit of Government Rwanda backs them and guarantees the investor to return their interest and principal when securities mature.

-Investment in government T-bond/T-bills has return that is certainly predictable than other investment asset class.

(d) Source of government finance available

- The client of BEN Consult Ltd must aware that, government of Rwanda has **grants** policy where government can give a grant when you work and met the criteria to receive grants. For example, government of Rwanda has grants in agriculture, in health and etc.

-Government of Rwanda also provide **tax incentive** in for those who affected by government by providing some tax benefits like holidays, delays tax payment and etc

-Government of Rwanda also has **national aid scheme** for investors who seek help and qualify (met criteria) for help.

-Government of Rwanda also provide **subsidies** to the investor who is investing in preferential sectors that will help socio and economic development.

QUESTION FIVE

Marking Guide

	Marks
(a) Equity financing	1
Dividend paid	2
Dividend payout Ratio	1
(b) Defining each element (1 mark for each)	2
(C) Defining the Concept	1
Explanation how Risk averse investor advocate bird in Hand	1
Explanation how it affects company value	2
(d) Four factors (0.5 marks)	2
Explanation factor (0.5 mark each reason)	2
(e) Three critics (1 mark for each)	3
explanation three critics (1 mark for each)	3
	20

Model Answers

(a) Equity financing =60%*40Bn=24Bn

Dividend paid=30Bn -24Bn=6Bn

Dividend payout Ratio=6bn/30Bn=20%

Using the residual dividend policy, with a targeted capital structure of 40% debt and 60% equity, 60% of FRW 40 billion Project is FRW 24billion to finance capital expenditure and the remaining FRW billions can be used to pay dividend.

(b)

-Stable dividend policy involves paying the same amount of dividend regardless of the earning of the company has generated.

-Constant dividend payout ratio policy involves paying the fixed percentage of earning, it means that dividend amount increases or decreased as earning increases or decreases.

(c)

-According to Bird in hand theory argues that shareholders are risk averse and prefer certainty. Dividend's payments are more certain than capital gains which rely on demand and supply forces to determine share prices.

-Therefore, risk averse investor advocate "one bird in hand" (certain dividends) is better than two birds in the bush (uncertain capital gains). Finally, RWERU Ltd must pay dividends (certain) will have higher value since shareholders will require to use lower discounting rate.

-According to this theory when company retained dividend of the shareholders can decrease that value of the company because, shareholders will demand high return which increases discount rate and reduce the overall value to the company and vice versa.

d)

-Taxation: Income Tax versus Capital Gains Tax. If shareholders pay high marginal rates of Income Tax, they may prefer low dividends. If subject to low tax rate or zero tax, they may prefer high dividends.

-Investment Opportunities: "Residual Theory" retain sufficient funds until all profitable investments (those with a positive NPV) have been funded. Balance to be paid as dividends.

-Availability of Finance: If the company is highly geared it may have little option but to retain. Retentions will build up the equity base, thus reducing gearing and assisting future borrowing.

-Liquidity: Profits do not equal cash. Adequate cash must be available to pay dividends. Also, for growth companies, sufficient liquidity must be available for reinvestment in fixed assets.

- Cost of New Finance: The costs associated with raising new equity/debt can be quite high. If debt is raised interest rates may be high at that particular point in time.

-Transaction Costs: this involves other cost that company incurs in order to raise capital, brokerage fees to for floatation of other shares.

-Information Content: The declared dividend provides information to the market about thecompany's current performance and expected future prospects. An increase or a reductionwill be reflected in the share price.

(e) In this theory, MM have made the following assumptions which are not applicable in the real-world scenarios:

-MM said that, this theory to work, the world without tax: This is a practical limitation of using this theory because, tax is challenges in the real world.

-MM said that, this theory to work, the world without transaction cost: This is a practical limitation of using this theory because, transaction cost is challenges in the real world.

-MM said that, this theory to work, all investors have the same information (perfect information): This is a practical limitation of using this theory because there is information asymmetry in the real world.

QUESTION SIX

Marking Guide

	Marks
(a) Calculation of Cost of preferential share	1
Calculation of Cost of Bank loan	1
Calculation of Current dividend	1
Dividend Growth rate	2
Calculation of Cost of Equity	2
Calculation of Market value of firm	1
Calculation of Weight of cost of capital components	1
Calculation of Weighted average cost of capital	1
(b) Three factors (1 mark for each)	3
(c) Two reasons (1.5 mark for each)	3
(c) Two reasons (2 arks for each)	4
	20

Model Answers

(a)-Cost of preferential share; (5%*FRW100/RW80) =5/80=**6.25%**

-Cost of Bank loan   ((7%*(100%-30%))=7%*70%=**4.9%**

Cost of Equity:

- Current Dividend (Cum div price-Ex div price) = FRW380-FRW350=30
- Calculate growth (ROE*Retention),
- Retention= (1-Divident payout Ratio) = (1-40%) =60%
- Dividend Growth rate = ROE*Retention= 12%*60%=7.2%
- Cost of Equity= Do(1+g)/Po
- Cost of Equity= 30(1+7.2%)/350=9.18% (remember to use Ex-div price)
- Market value of firm=Value debt+ value of equity+ value of preference shares=((12milion *350)+(4million*80)+150million))=4,670 million

- Weight Equity=4,200/4,670) =90%, Preference share=320/4,670=6.8%, bank loan= 150/4,670=3.2%
- Weighted average cost of capital (WACC) = 90%*9.18%+(6.8%*6.25%) +(3.2%*4.9%) =8.844%

(b) -A company deviate from the optimum capital structure to take advantages on short term market opportunity

-To take advantages on the cheapness of debt financing

-To take advantages on the tax incentives in given sector or asset class

-The company deviate from the optimum capital structure to exploit market opportunities not only domestic market but also for international market.

(c)The key assumptions underlying Modigliani and Millerirrelevant argument are: perfect markets (no transaction cost), no taxes, no information asymmetry, individual borrowing and lending at free rate, no cost on financial distress.

-Without any tax and those cost mentioned above, weightedaverage cost of capital (WACC) IS completely unaffected by level of debt (Leverage).

- This is theory is like dividing the value of the Pie into different pieces but does not affect the size of the pie (When the new cost of debt is raised at cheaper rate, the cost of equity will increase because financial risk or leverage is increasing to the firm and net each other and cost of capital remain the same)

(d) Traditional approach assumes costless bankruptcy and financial distress. However, bankruptcy costs include administrative costs, legal cost and accounting costs as well as loss value for company happen in distressed environment. Financial distress include also opportunity lose due to customers buying elsewhere, for fear that warranties will not be honored and also there is agency costs.

-The present value of those expected costs reduces slightly the benefits of tax interest shield, so company must take attention on balancing benefit and the cost, so the company must make decision.

-Optimum capital structure must take account those costs before continuing use of more debt, as debt increases in capital structure, financial risks increases until costs of financial distress overweight interest tax shield.

END OF MARKING GUIDE AND MODEL ANSWER