



**CERTIFIED PUBLIC ACCOUNTANTS
INTERMEDIATE LEVEL EXAMINATIONS**

I1.1: MANAGERIAL FINANCE

DATE: THURSDAY 29, AUGUST 2024

MARKING GUIDE AND MODEL ANSWERS

SECTION A

QUESTION ONE

Marking scheme

	Sub. Qn	Description	Marks	Total Marks
a	i	Differentiate finance lease with sale and lease back		
		Definition of Finance lease (2 Marks)	2	
		Definition of sale and lease back (2 Marks)	2	
		Award 2 marks for a well Explained Point.		
	ii	Four benefits of choosing sale and lease back as finance option (1 Marks Each, Maximum 4 Point)	4	
iii	Advantages of leasing as sources of both short term and long-term finance (1 Marks Each, Maximum 4 Point)	4		
b		Buy or Lease decision (Buy option)		
		Recognition of Initial Investment (Non-Allocated Mark)		
		Accounting Treatment of Tax saving on TAD	2.5	
		Scrap Value	0.5	
		PV of Cash flow on Buy option	1	
		Buy or Lease decision (Lease option)		
		Record of lease rental	1	
		Accounting Treatment of Tax saving on Lease rental	1	
		PV of Cash flow on lease option	1	
		Comment for correct option to choose	1	
	Total Marks		20	

Model Answer

i) **Difference finance lease with sale and lease back**

Finance Lease

This transfers substantially all the risks and rewards of ownership, other than legal title, to the lessee. It usually involves payment to the lessor over the lease term of the full cost of the asset plus a commercial return on the finance provided by the lessor. Both the leased asset and the corresponding stream of rental liabilities must be shown on the lessee's Balance Sheet

Other features include:

- The lessee is responsible for the upkeep, maintenance etc. of the asset.
- The lease has a primary period, covering the whole or most of the economic life of the asset. The asset will be almost worn out at the end of the primary period, so the lessor will ensure that the cost of the asset and a commercial return on the investment will be recouped within the primary period.
- At the end of the primary period the lessee has the option to continue to lease at a very small rent Alternatively, he can sell the asset and retain about 95% of the proceeds

SALE AND LEASEBACK

This is an arrangement whereby a firm sells an asset, usually land or a building, to a financial institution and simultaneously enters an agreement to lease the property back from the purchaser. The seller receives funds immediately and retains use of the asset but is committed to a series of rental payments over an agreed period. Thus, it is suited to capital rationed companies who are eager to finance expansion programmer before the opportunity is lost. The main disadvantages are the loss of participation in any capital appreciation and the loss of a valuable asset which could have been used as security for future borrowing.

ii) **Benefits of choosing sale and lease back as finance option to Kigali Mult - business Group**

Choosing leaseback as a financing solution involves evaluating several factors to determine its suitability for Kigali Multi -Business Group (KMG). Here are key considerations that would typically influence such a decision:

1. **Financial Flexibility:** Leaseback transactions provide immediate access to capital without the need for traditional borrowing. This preserves KMG's existing credit lines and financial flexibility, which can be crucial for managing operational needs and unforeseen expenses.
2. **Off-Balance Sheet Treatment:** By selling the building and leasing it back, KMG can potentially keep the asset off its balance sheet. This may improve financial ratios and enhance the company's ability to secure additional financing in the future.

3. **Cash Flow Management:** Leaseback arrangements typically involve predictable lease payments, which can be structured to align with KMG's cash flow projections. This helps in managing cash flow effectively, ensuring that the company can meet its financial obligations and invest in growth initiatives.
4. **Strategic Use of Assets:** Selling the building and leasing it back allows KMG to unlock the value tied up in real estate assets. The capital raised can be reinvested into the business to fund expansion, improve operational efficiency, or pursue strategic opportunities.
5. **Tax Considerations:** Depending on the jurisdiction and specific terms of the leaseback agreement, there may be tax advantages associated with lease payments

iii) Discuss the advantages of leasing as sources of both short term and long-term finance

1. The lessee's capital is not tied up in fixed assets, so a cash flow advantage accrues.
2. Liquidity is improved as no down-payment is required.
3. The lessor can obtain capital allowances and pass the benefit to the lessee in the form of lower lease rentals. This is especially important for a company with insufficient taxable profits.
4. The whole of the rental payment is tax deductible.
5. Security is usually the asset concerned. Other assets are free for other forms of borrowing. • Traditional forms of borrowing often impose restrictive covenants.
6. The cost of other forms of borrowing may exceed the cost of leasing.

b) Buy or Lease Option

Buy option

Details	year0	year 1	year 2	year3	year4	year5	year 6
Initial investment	(75,000,000)						
Tax saving on TAD			5,625,000	4,218,750	3,164,063	2,373,047	2,619,141
Scrap Value						15,000,000	
Cashflow	(75,000,000)	-	5,625,000	4,218,750	3,164,063	17,373,047	2,619,141
DF (11%)	1	0.901	0.812	0.731	0.659	0.593	0.539
PV of cashflow	(75,000,000)	-	4,567,500	3,083,906	2,085,117	10,302,217	1,411,717
PV of Cost for Purchase the asset							(53,549,543)

Working 1: of Tax saving on Tax allowable depreciation

Year	cost/RB	Depreciation rate	depreciation	tax rate	tax saving
Y0/1	75,000,000	25%	18,750,000	30%	5,625,000
Y2	56,250,000	25%	14,062,500	30%	4,218,750
Y3	42,187,500	25%	10,546,875	30%	3,164,063
Y4	31,640,625	25%	7,910,156	30%	2,373,047
Y5	23,730,469		8,730,469	30%	2,619,141
Scrap Value	(15,000,000)				
Balancing figure	8,730,469				

Working 2: Cost of Borrowing after tax

$K_d \text{ (after tax)} = K_d \text{ (Before tax)} * (1 - \text{tax})$

$K_d \text{ (after tax)} = 15.7\% * (1 - 30\%) = \mathbf{11\%}$

Lease Option

Details	year0	year 1	year 2	year3	year4	year5	year 6
Initial investment		(20,000,000)	(20,000,000)	(20,000,000)	(20,000,000)	(20,000,000)	
Tax saving on Lease rental (30%)			6,000,000	6,000,000	6,000,000	6,000,000	6,000,000
Cashflow	-	(20,000,000)	(14,000,000)	(14,000,000)	(14,000,000)	(14,000,000)	6,000,000
DF (11%)	1	0.901	0.812	0.731	0.659	0.593	0.539
PV of cashflow	-	(18,020,000)	(11,368,000)	(10,234,000)	(9,226,000)	(8,302,000)	3,234,000
PV of Cost for Lease Option							(53,916,000)

The best Financing method should be the one with the lowest Present Value of Cost after discounting the cashflow with an after-tax Cost of Borrowing **so I will choose buy option**

QUESTION TWO

Marking scheme

	Description	Marks	Total Marks
a	Analysis of the viability of the project		
	Inflation of Sale revenue (0.5 Marks each, Maximum 2.5 Marks)	2.5	
	Inflation of Variable Cost (0.5 Mark each, Maximum 2.5 Marks)	2.5	
	Separation of Accounting Depreciation in Operating expense (1 Mark)	1	
	Profit Before Tax (0.5 Mark each, Maximum 2.5 Marks)	2.5	
	Accounting Treatment of TAX by one year in areas (0.5 Mark each, Maximum 2.5 Marks)	2.5	
	Accounting Treatment of Tax saving by one year in the area (0.5 Mark each, Maximum 2.5 Marks)	2.5	
	Treatment of Working capital (0.5 Marks each, Maximum 3 Marks)	3	
	Treatment of Scrap value (0.5 Mark)	0.5	
	PV of cashflow (2 Marks)	2	
	Comment with Correct NPV	1	
B	Return on Capital employed (Accounting Rate of return)		
	Accounting profit before tax	2.5	
	Average Accounting Profit	0.5	
	ROCE (1 Mark for Computation, 1 Mark for Comment)	2	
	Total Marks		<u>25</u>

NPV Analysis

Year	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Inflated selling price/Unit		47,250	52,369	57,900	69,863	76,560	
Inflated Variable cost		(25,750)	(31,827)	(49,185)	(45,040)	(52,155)	
Contribution Per UNIT		21,500	20,542	8,715	24,823	24,405	
Expected sale Volume (Units)FRW		1,000	1,200	1,500	1,200	1,200	
Total Contribution		21,500,000	24,650,100	13,072,500	29,787,000	29,286,000	
Operating Expenses		(3,500,000)	(3,500,000)	(3,500,000)	(3,500,000)	(3,500,000)	
Profit before tax		18,000,000	21,150,100	9,572,500	26,287,000	25,786,000	
Tax	0		(5,400,000)	(6,345,030)	(2,871,750)	(7,886,100)	(7,735,800)
Profit after Tax		18,000,000	15,750,100	3,227,470	23,415,250	17,899,900	(7,735,800)
Tax saving on TAD			3,750,000	2,812,500	2,109,375	1,582,031	3,246,094
INITIAL Investment	(50,000,000)						
Working Capital	(15,000,000)	(750,000)	(787,500)	(826,875)	(868,219)	18,232,594	
Scrap Value						5,000,000	
Cash flow	(65,000,000)	17,250,000	18,712,600	5,213,095	24,656,406	42,714,525	(4,489,706)

Year	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
DF(15%)	1	0.870	0.756	0.658	0.572	0.497	0.432
PV of Cash flow	(65,000,000)	15,007,500	14,146,726	3,430,217	14,103,464	21,229,119	(1,939,553)
NPV	977,472						

The project has to be accepted because it has a Positive NPV

WORKING ONE

Saling price/Unit (FRW)	45,000	47,500	50,000	57,500	60,000
Inflation on selling price	1.05 ¹	1.05 ²	1.05 ³	1.05 ⁴	1.05 ⁵
FV= PV(1+r) ^n	1.050	1.103	1.158	1.215	1.276
Inflated selling price/Unit	47,250	52,369	57,900	69,863	76,560

WORKING TWO

Variable cost/ Unit (FRW)	25,000	30,000	45,000	40,000	45,000
Inflation on selling price	1.03 ¹	1.03 ²	1.03 ³	1.03 ⁴	1.03 ⁵
FV= PV(1+r) ^n	1.030	1.061	1.093	1.126	1.159
Inflated Variable cost	25,750	31,827	49,185	45,040	52,155

**WORKING
THREE**

Operating Expenses in Nominal terms (FRW)	12,500,000	12,500,000	12,500,000	12,500,000	12,500,000
Depreciation	9,000,000	9,000,000	9,000,000	9,000,000	9,000,000
Operating Expenses excluding accounting depreciation	3,500,000	3,500,000	3,500,000	3,500,000	3,500,000

WORKING FOUR: of Tax saving on Tax allowable depreciation

year	cost/RB	Depreciation rate	depreciation	tax rate	tax saving
Y0/1	50,000,000	0.25	12,500,000	0.30	3,750,000
Y2	37,500,000	0.25	9,375,000	0.30	2,812,500
Y3	28,125,000	0.25	7,031,250	0.30	2,109,375
Y4	21,093,750	0.25	5,273,438	0.30	1,582,031
Y5	15,820,313		10,820,313	0.30	3,246,094
Scrap Value	(5,000,000)				
Balancing figure	10,820,313				

WORKING FIVE: Working Capital required at the start of each year

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Working capital		(15,000,000)	(15,750,000)	(16,537,500)	(17,364,375)	(18,232,594)
For working capital we record incremental change in cash flow	(15,000,000)	(750,000)	(787,500)	(826,875)	(868,219)	18,232,594

b)

For ROCE	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Inflated selling price/Unit		47,250	52,369	57,900	69,863	76,560	
Inflated Variable cost		(25,750)	(31,827)	(49,185)	(45,040)	(52,155)	
Contribution Per UNIT		21,500	20,542	8,715	24,823	24,405	
Expected sale Volume (Units)FRW		1,000	1,200	1,500	1,200	1,200	
Total Contribution		21,500,000	24,650,100	13,072,500	29,787,000	29,286,000	
Operating Expenses		(12,500,000)	(12,500,000)	(12,500,000)	(12,500,000)	(12,500,000)	
Profit before tax		18,000,000	21,150,100	9,572,500	26,287,000	25,786,000	

Average profit **20,159,120**
Estimated initial investment= 50,000,000

$$\text{ROCE} = \frac{20,159,120}{50,000,000} * 100\% = 40\%$$

The project yields a ROCE of 40% which is greater than a target return of 25%, the project has to be undertaken according to ROCE.

QUESTION THREE

Marking scheme

		Description	Marks	Total Marks	
a	WACC				
	I	Cost of equity (0.5 Marks for Formula, 1 Marks for Computation)	1.5		
	Ii	Cost of Redeemable debt (0.5 Mark for different NPV for different Discount rate each, Maximum 1 Marks), IRR Formula 1 Marks, 1 Marks for Computation)	3		
	Iii	Cost of preference share (0.5 Marks formula, 1 Mark for Correct Answer)	1.5		
	Iv	Weighted Average Cost of Capital			
		MV of different source of Finance			
		Weighted Average Cost of Capital		2	
b		The shortfall of WACC in Finance (1 Mark for collect answer, Maximum 3 Marks) any further correct answer is accepted	3		
c		Logic required to apply the weight average Cost of Capital of company in investment appraisal (2 Mark for collect answer, Maximum 4 Marks)	4		
		Total Marks		15	

a. Cost of capital

Information available

Market price per share Cumulative dividend =	FRW 450
Expected Dividend per Share	FRW 50
Growth rate in Dividend	6%

$$K_e = \frac{D_0(1+g)}{MPS_{ex-div}} + g$$

$$K_e = \frac{D_1}{MPS_{ex-div}} + g$$

$$K_e = \frac{50}{400} + 6\% = 18.5\%$$

MPS ex-div = MPS cum-div - Dividend

MPS ex-div = 450 - 50 = **FRW 400**

i. Cost of redeemable debt

Information available

Face value	FRW 1,000
Market value	FRW 900
Interest rate	10%
Premium	10% of Face value 10% * 1,000 = 100
Redemption value	Face Value + premium 1,000 + 100 = 1,100

For Redeemable Debt

We use Internal rate of return by trial and error for different discounting rate

Year	Detail	Cashflow	DF (10%)	PV	DF (5%)	PV
Y 0	Market price	-900	1	-900	1	-900
Y1-5	Interest (100*(1-tax))	70	3.791	265.37	3.352	234.64
Y5	Redemption value	1100	0.621	683.1	0.497	546.7
	NPV			48.47		-118.66

$$IRR = \text{Lower DF} + \text{change in DF} * \left(\frac{NPV @ LDF}{NPV @ LDF - NPV @ HDF} \right)$$

$$IRR = 10\% + (15\% - 10\%) * \left(\frac{48.47}{48.47 - (-118.66)} \right) = \mathbf{11.45\%}$$

ii. Cost of preferred stock

Information available

Nominal Value of Preference share	FRW 1,000
Interest rate for preference dividend	11%
Dividend	Nominal value * interest rate FRW 1,000 * 11% = 110
Market value of preference share	1,200

$$K_{pref} = \frac{D_o}{MP_{pref} S_{ex-div}}$$

$$K_{pref} = \frac{110}{1,200} * 100\% = 9.17\%$$

iii. WEIGHTED AVERAGE COST OF CAPITAL

$$WACC = K_e * \left[\frac{MVE}{MVE + MVD + MV_{pref}} \right] + K_d * \left[\frac{MVD}{MVE + MVD + MV_{pref}} \right] + K_{pref} * \left[\frac{MVPref}{MVE + MVD + MV_{pref}} \right]$$

Market value of Different sources of finance

	FRW	BV	MV	MV of SOURCE OF FINANCE
Ordinary share capital (FRW 100)	15,000,000	100	450	67,500,000
10% redeemable debentures (FRW 1000)	6,000,000	1000	900	5,400,000
11% Preference share (FRW 1000)	2,500,000	1000	1200	3,000,000
				75,900,000

WACC

	MV of SOURCE OF FINANCE	WEIGHTING	Cost of each source of finance	WEIGHTING * Cost of each source of finance
Ordinary share capital (FRW 100)	67,500,000	0.889328063	18.50%	0.164525692
10% redeemable debentures (FRW 1000)	5,400,000	0.071146245	11.45%	0.008146245
11% Preference share (FRW 1000)	3,000,000	0.039525692	9.17%	0.003623188
	75,900,000			0.176295
18%				

B) Briefly describe the shortfall of WACC in Finance

- It is assumed that the company will maintain the same capital structure which is not always the case, although it is probably unrealistic in practice.
- WACC relies on market data, which is not always accurate.
- WACC could be affected by the company's beta value due to beta value change when business risk of finance risk change
- It is assumed that the project to be appraised is of the same risk class as existing project of the company by it is not always

- c) **Briefly discuss the logic required to apply the weighted average Cost of Capital of the company as an appropriate discounting Factor in evaluating the investment That the business is Making.**

Answer:

This will be appropriate if:

1. The investment exposes the investors to the same level of business risk that they currently face
2. The finance for the investment does not alter the financial risk that the business currently faces (does not change its gearing).

SECTION B

QUESTION FOUR

Marking scheme

Qn 4		Description	Marks	Total Marks
a	i	On the assumption that each of the project is divisible		
		Project 1 (2.5 Marks, for each Present value of cash flow 0.5 Marks, and 0.5 for Profitability index)	3	
		Project 2 (1 Marks) for PV of cashflow and 0.5 Marks for Profitability index)	1.5	
		Project 3(2.5 for PV of cashflow 0.5 Mark each, 1 Marks for Working Capital, 0.5 Mark for scrap value, and 0.5 for Profitability index)	4.5	
		Project 4 (2 Marks for PV of cashflow, 0.5 Marks for NPV and 0.5 for Profitability index)	3	
		Ranking the project according to Profitability index	1	
		Allocating Available budget on selected project (0.5 Mark Each)	1	
	ii	On the assumption that none of the project are divisible (2 Mark for correct Combination)	2	
b		Two sources of equity finance available for business financing (0.5 Marks for Outline, 0.5 Marks for Explanation) Maximum 2 Marks	2	
c		Benefits of Investing through the capital market. (0.5 Mark each Maximum 2 Marks)	2	
		Total Marks		<u>20</u>

Model answer

Project 1:						
Details	Year 0	year 1	year 2	year3	year4	year5
Net cash saving		1,300,000	1,365,000	1,433,250	1,504,913	1,580,158
FV= PV(1+r) ^ n						
Initial investment	(4,000,000)					
Cashflow	(4,000,000)	1,300,000	1,365,000	1,433,250	1,504,913	1,580,158
DF (10%)	1	0.909	0.826	0.751	0.683	0.621
PV of cashflow	(4,000,000)	1,181,700	1,127,490	1,076,371	1,027,855	981,278
NPV= 1,394,694						
Profitability index = 0.35						

NPV= PV of cash inflow – PV of Cash outflow

$$\text{Profitability index} = \frac{\text{Total Present value of Cash inflow}}{\text{PV of initial investment}} * 100\%$$

Project 2	Detail	cashflow	DF (10%)	PV
year 0	Initial outlay	(2,500,000)	1	(2,500,000)
year 1-perpetuity	cashflow in perpetuity	300,000	0.1	3,000,000
Net present value				500,000
Profitability index				0.20

NPV= PV of cash inflow – PV of Cash outflow PV of cashflow in perpetuity = $\frac{\text{Cash flow}}{\text{Discount rate}}$

Project 3:					
Details	Year 0	Year 1	Year 2	Year 3	Year 4
Profit after tax		1,600,000	1,850,000	2,780,000	1,950,000
Initial investment	(5,000,000)				
Working capital	(1,000,000)	(100,000)	(110,000)	-	1,210,000
scrap value					500,000
Cashflow	(6,000,000)	1,500,000	1,740,000	2,780,000	3,660,000
DF (10%)	1	0.909	0.826	0.751	0.683
PV of cashflow	(6,000,000)	1,363,500	1,437,240	2,087,780	2,499,780
NPV					1,388,300
PROFITABILITY INDEX					0.23

		Year 0	Year 1	Year 2	Year 3	Year 4
working capital	10%		(1,000,000)	(1,100,000)	(1,210,000)	(1,210,000)
for working capital, we record the incremental change in cashflow		(1,000,000)	(100,000)	(110,000)	-	1,210,000

Project 4:

YEAR	Detail	Cashflow	DF/AF	PV OF CF
YEAR 0	initial investment	(3,500,000)	1	(3,500,000)
Year (1 to 5)	cost saving in five years (annuity)	1,200,000	3.791	4,549,200
NPV				1,049,200
profitability index				0.30

$$\text{Annuity Factor} = \frac{1-(1+r)^{-n}}{r} = \frac{1-(1+10\%)^{-5}}{r 10\%} = 3.791$$

Ranking the project

	Initial investment	NPV	Profitability index	Ranking according to PI
Project 1:	4,000,000	1,394,694	0.35	1
Project 2:	2,500,000	500,000	0.20	4
Project 3:	6,000,000	1,388,300	0.23	3
Project 4:	3,500,000	1,049,200	0.30	2
Total required Investment	16,000,000			

i) On the assumption that each of the project is divisible

	Initial investment	NPV	Available Fund	NVP for choose P	Profitability index	Ranking
Project 1:	4,000,000	1,394,694	4,000,000	1,394,694	0.35	1
Project 4:	3,500,000	1,049,200	3,500,000	1,049,200	0.30	2
Project 3:	6,000,000	1,388,300	(Bal 4,500,000)	1,041,225	0.23	3
	13,500,000		12,000,000	3,485,119		

ii) On the assumption that none of the project are divisible

If the project is not divisible, we use trial and error method by combining the different project corresponding to available balance and we choose the project with the highest NVP with available budget.

Possible Combination	Amount Required	NPV for Combine Project
Project1, project 2	6,500,000	1,894,694
Project1, project 3	10,000,000	2,782,994
Project1, project 2, project 4	10,000,000	2,943,894
Project 2, project 3, project 4	12,000,000	2,937,500
project 2, Project 4	9,500,000	2,437,500

I will choose this combination of **Project1, project 2, project 4** because it has the **highest NPV**

b) Two sources of equity finance available for business financing

Equity finance is divided into the following classes:

1. Ordinary share capital: this is raised from the public from the sale of ordinary shares to the shareholders. This finance is available to limited companies. It is a permanent finance as the owner/shareholder cannot recall this money except under liquidation. It is thus a base on which other finances are raised. Ordinary share capital carries a return that is variable (ordinary dividends). These shares carry voting rights and can influence the company's decision-making process at the AGM. These shares carry the highest risk in the company (high securities – documentary claim to) because of:

- Uncertainty of return
- Cannot ensure refund
- Have residual claims – claim last on profits, claim last on assets.

2. Retained Earnings

• **Revenue Reserves:** These are undistributed earnings. Such reserves are retained for the following reasons:

- To make up for the fall in profits so as to sustain acceptable risks.
- To sustain growth through plough backs. They are cheap source of finance.
- They are used to boost the company's credit rating so they enable further finance to be obtained.
- It lowers the company's gearing ratio – reduces chances of receivership/liquidation.

• **Capital Reserves:** It is raised by selling shares at a premium. (The difference between the market price (less floatation costs) and par value is credited to the capital reserve). Through revaluation of the company's assets. This leads to a fictitious entry which is of the nature of a capital reserve. • By creation of a sinking fund.

c) The benefits of Investing through the capital market.

1. **Savings:** Investing in securities that are listed in the Capital or Stock market encourages investors to accumulate their savings in small amounts over time
2. **Income:** Investment in the stock market provides a source of income. Shares pay dividends when companies declared profits and decide to distribute part of the profits to shareholders. Bonds pay an interest income to the bondholders. Sometimes the income earned from listed securities is higher than interest earned from the money or banking sector.
3. **Wealth or Capital gain:** Whenever the prices of securities listed in the market go up, the value of the investment of the holders of those securities increases. This is called capital gain and is an important way of growing wealth through the stock market. It is important to note that a one –off

investment in the Capital market does not make sense. It is therefore the accumulative investment over time that creates opportunities for growth in wealth through the Capital Market.

4. **Securities as Collateral:** Listed securities are easily acceptable as collateral against loans from financial institutions. Liquidity is the ability to convert shares or bonds into cash by selling within the shortest time possible without losing much value. When one needs funds urgently, listed securities could be very useful because they are more liquid than most other forms of assets.

QUESTION FIVE

Marking scheme

	Description	Marks	Total Marks
a			
i	i) If all account receivable takes two month of credit term		
	Increase in contribution	1	
	Increase in account receivable	1	
	Net increase in working capital	1	
	Return on Capital employed	1	
	Comment for Answer	1	
i	If the existing customers do not change their habits, and only new		
i	customers take a full two-month credit term		
	Increase in Account receivable	1	
	Net increase in working capital	1	
	Return on Capital employed	1	
	Comment for Answer	1	
b	Define the term invoice Discounting	2	
c	Explain four factors for assessing the credit worthiness of his/her potential customer (0.5 Mark for outline, 0.5 for explanation) Maximum four Point	4	
d	Four factors required to formulate working capital management policies (0.5 Mark each point, 4 Point is Maximum)	2	
e	Motives for holding cash by a business enterprise (1 Marks for each, (0.5 Mark for outline, 0.5 for explanation) Maximum 3 Points)	3	
	Total Marks		20

Model Answer

a)

<u>Information Available</u>	
Current annual sale	4,800,000
Contribution to sale ratio	15%
Current credit terms in month	1
Proposed new credit terms in month	2
Number of Month in the years	12
Increase in sale revenue after change of credit policy	25%

i) **If all account receivable takes two month of credit term**

Current annual sale	4,800,000
addition in sale after change in policy	1,200,000
New sale after change of Policy	6,000,000
increase in contribution (Increase in sale * Contribution to sale ratio) 1,200,000 *15%	180,000

<u>Change in working capital required</u>	
New receivable after change of policy = 6,000,000 * 2/12	1,000,000
less: Current receivable before change of policy = 4,800,00 * 1/12	(400,000)
increase in account receivable	600,000
add: increase in inventory	200,000
less: increase in payable	(40,000)
Net increase in working capital	760,000

$$\text{Return on Extra investment} = \frac{\text{Profit from Extra investment}}{\text{Extra investment in Working Capital}} * 100\%$$

$$\text{Return on Extra investment} = \frac{180,000}{760,000} * 100\% = 24\%$$

$$\text{Account Receivable Collection Period} = \frac{\text{Trade Receivable}}{\text{Credit Sale Revenue}} * 12 \text{ month}$$

$$\text{Trade receivable} = \frac{\text{Account receivable Collection Period} * \text{Credit sale}}{12 \text{ Month}}$$

Return on Investment of 24% is greater than Target return of 20%, the relaxation of credit policy has to be accepted.

- ii) **if the existing customers do not change their habits, and only new customers take a full two-month credit term**

NW Account receivable if only new account receivable takes 2 months 1,200,000 * 2/12	200,000
add: increase in inventory	200,000
less: increase in payable	(40,000)
Net increase in working capital	360,000

$$\text{Return on Extra investment} = \frac{\text{Profit from Extra investment}}{\text{Extra investment in Working Capital}} * 100\%$$

$$\text{Return on Extra investment} = \frac{180,000}{360,000} * 100\% = 50\%$$

Return on Investment 50% is greater than Target return of 20%, the relaxation of credit policy has to be accepted.

Alternatively

Credit policy one month	New policy	Previous policy		Incremental
Incremental contribution due to change in Policy	900,000	720,000		180,000
Incremental Cost due to change in Policy				
Opportunity cost debtors	200,000	80,000	120,000	
Opportunity cost on working capital	32,000	-	32,000	152,000
Net incremental benefit/cost				28,000

Comment: Accept the new policy since it has a positive net incremental benefit

Credit policy one month	New policy	Previous policy		Incremental
Contribution	900,000	720,000		180,000
Other working capital	32,000	-	32,000	
Opportunity cost debtors:				
Old debtors	80,000	80,000	-	
New debtors	40,000	-	40,000	72,000
Net incremental benefit/cost				108,000.0

Comment: Accept the new policy since it has a positive net incremental benefit

b) 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 company still collects the debt as agent for the financial institution and is also liable for bad debts. The service tends to be used on an ad hoc basis and is provided by factors for clients who need finance but not the administrative service or protection

c) Evaluating Credit Risk (credit worthiness) of his/her potential customer.

Before extending credit to new customers management will assess the risk of default in payment/non-payment. This will be based upon experience and judgement but in addition, the following sources may be used:

1. Trade References - from other suppliers (at least two).
2. Bank References - may be of limited use as banks are reluctant to supply adverse references.
3. Credit Agency Reports - specialist agencies (e.g. Dun & Bradstreet) will provide detailed reports on the history, creditworthiness, business etc. of individuals and organizations on payment of a fee.
4. Published Information - annual accounts etc.
5. Own Salesmen - useful source but views may not be objective (commission receivable?).
6. Newspapers and Trade Journals.
7. Other Credit Controllers - many trade associations where controllers meet regularly to exchange information about the state of the industry generally and slow/bad payers in particular.

8. Own Information - check old customer files to see if you have ever done business in the past.
9. Trial Period - on a “cash -only” basis.
10. Credit Limit - fix at low level initially and only increase if payment record warrants.
11. Site Visits - an opinion on the operations can be formed by visiting the premises.
12. Credit Scoring - evaluate potential customer using credit scoring or other quantitative techniques. Credit scores are risk indicators - the higher the score, the lower the risk. Scores will be allocated based on the characteristics of the new customer (e.g. age, occupation, length of service, married/single, home owner, size of family, income, commitments etc.). Credit scoring is particularly suited to financial institutions and the amount of credit offered, if any, will depend on whether the credit score is above a predetermined cut-off level. Computerized systems (“expert systems”) are especially useful for this purpose.

d) Determinants of working capital needs

There are several factors which determine the firm’s working capital needs. These factors are comprehensively covered by A Textbook of Business Finance by Manasseh (Pages 403 – 406). They however include:

- i) Nature and size of the business.
- ii) Firm’s manufacturing cycle
- iii) Business fluctuations
- iv) Production policy
- v) Firm’s credit policy
- vi) Availability of credit
- vii) Growth and expansion activities

e) Motives for holding cash by a business enterprise like DISMAS Co ltd

Cash is an idle asset and the company should try to hold the minimum sufficient for its needs.

Three motives are suggested for holding liquid funds (cash, bank deposits, short-term investments):

1. **Transaction Motive** - to meet payments in the ordinary course of business – pay employees, suppliers etc. Depends upon the type of business, seasonality of trade etc.
2. **Precautionary Motive** - to provide for unforeseen events e.g. fire at premises. • Depends upon management’s attitude to risk and availability of credit at short notice.
3. **Speculative Motive** - to keep funds available to take advantage of any unexpected • “bargain” purchases which may arise - e.g. acquisitions, bulk-buying etc.

QUESTION SIX

Marking scheme

Qn		Description	Marks	Total Marks
6				
a		Five factors twill take into account in formulating its dividend Policies (0.5 Mark for Outline each point, 0.5 Marks for Explanation) Maximum 5 point	5	
b	i	Residual dividend theory (stating what the theory says 1, clear assumptions 2 marks each theory)	3	
	ii	MM Dividend Irrelevance Theory (stating what the theory says 1, clear assumptions 2 marks each theory)	3	
	iii	Bird-in-hand theory (stating what the theory says 1, clear assumptions 2 marks each theory)	3	
	iv	Information signaling effect theory (stating what the theory says 1, clear assumptions 2 marks each theory)	3	
	v	Clientele effect theory (stating what the theory says 1, clear assumptions 2 marks each theory)	3	
		Total Marks		20

Model Answer

a) Five practical considerations of Formulating Dividend Policy

There are a number of practical considerations which a company must take into account in setting its particular dividend policy. Chief among these is:

1. Taxation – Income Tax v 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.
2. 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. Drawback is that dividends may vary dramatically from year to year. Also, consider the timing of the cash flows from the investments as these will be required to pay future dividends.
3. 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.

Certain types of company (e.g. small/unquoted) may not have access to external funds and may need to retain.

4. 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.
5. 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.
6. Transaction Costs – Some shareholders may depend on dividends. If earnings are retained, they can create “home-made” dividends by selling some shares (capital). However, this may be inconvenient and costly (brokerage fees etc.).
7. Control – If high dividends are paid the company may subsequently require capital and this may be obtained by issuing shares to new shareholders. This may result in a dilution of control for existing shareholders.
8. Inflation – In periods of high inflation companies may have to retain funds in order to maintain their existing operating capability. On the other hand, shareholders require increased dividends in order to maintain their purchasing power.
9. Information Content – The declared dividend provides information to the market about the company’s current performance and expected future prospects. An increase or a reduction will be reflected in the share price.
10. Existing Debt – Restrictive covenants in existing loan agreements may limit the dividend payout or prohibit the company from arranging further borrowing. Existing debt which may be due for repayment will require funds and may cause a reduction in the level of dividend.
11. Legal Restrictions – Dividends can only be paid out of realized profits. Past losses must first be made good.
12. Perceived Risk – The earnings from retained dividends may be perceived as being a riskier return than actual cash dividends, thereby causing their perceived value to be lower (the “Bird in the Hand Theory”).
13. Stable Dividends – Generally, shareholders require a stable dividend policy and hopefully, steady dividend growth

b) Explanation of dividend theories

i) Residual dividend theory

Under this theory, a firm will pay dividends from residual earnings i.e. earnings remaining after all suitable projects with positive NPV has been financed. After funding these projects, the leftover or residual earning can be distributed to shareholders. This prioritizes maximizing shareholders wealth through investment in profitable project before considering dividend payment.

It assumes that retained earnings are the best source of long-term capital since it is readily available and cheap. This is because no floatation cash are involved in use of retained earnings to finance new investments. Therefore, the first claim on earnings after tax and preference dividends will be a reserve for financing investments. Dividend policy is irrelevant and treated as passive variable. It will not affect the value of the firm. However, investment decisions will.

ii) MM Dividend Irrelevance Theory

The Modigliani-Miller Irrelevance dividend theory suggests that a dividend policy of a company has no impact on its market value in a perfect capital market.

They base on their arguments on the following assumptions:

1. No corporate or personal taxes
2. No transaction cost associated with share flotation
3. A firm has an investment policy which is independent of its dividend policy (a fixed investment policy)
4. Efficient market – all investors have same set of information regarding the future of the firm
5. No uncertainty – all investors make decisions using the same discounting rate at all time i.e. required rate of return (r) = cost of capital (k)

The theory asserts that a firm's dividend policy has no effect on its market value and cost of capital.

They argued that the firm's value is primarily determined by:

1. Ability to generate earnings from investments
2. Level of business and financial risk

According to MM dividend policy is a passive residue determined by the firm's need for investment funds. It does not matter how the earnings are divided between dividend payment to shareholders and retention.

Therefore, optimal dividend policy does not exist. Since when investment decisions of the firms are given, dividend decision is a mere detail without any effect on the value of the firm.

iii) Bird-in-hand theory

Argues that shareholders are risk averse and prefer certainty. Dividends payments are more certain than capital gains which rely on demand and supply forces to determine share prices. Therefore, **one bird in hand (certain dividends) is better than two birds in the bush (uncertain capital gains)**. That means investors prefer current dividend over uncertain future capital gains. Therefore, **a firm paying high dividends (certain) will have higher value since shareholders will require using lower discounting rate.**

iv) Information signaling effect theory

Advanced by Stephen Ross in 1977. He argued that in an inefficient market, management can use dividend policy to signal important information to the market which is only known to them.

This theory can convey important information to investors about the financial health and future prospects of a company. For instance, an increase in dividend can signal confidence in future earning, while a decrease may indicate financial difficulties.

Therefore, dividends are irrelevant if information can be given to the market to all players. Dividend decisions are relevant in an inefficient market and the higher the dividends, the higher the value of the firm. The theory is based on the following four assumptions:

1. The sending of signals by the management should be cost effective.
2. The signals should be correlated to observable events (common trend in the market).
3. No company can imitate its competitors in sending the signals.
4. The managers can only send true signals even if they are bad signals. Sending untrue signals is financially disastrous to the survival of the firm.

v) **Clientele effect theory**

Advance by Richardson Petit in 1977

It stated that different groups of shareholders (clientele) have different preferences for dividends depending on their level of income from other sources. Low-income earners prefer high dividends to meet their daily consumption while high income earners prefer low dividends to avoid payment of more tax. Therefore, when a firm sets a dividend policy, there'll be shifting of investors into and out of the firm until an equilibrium is achieved. Low, income shareholders will shift to firms paying high dividends and high-income shareholders to firms paying low dividends.

At equilibrium, dividend policy will be consistent with clientele of shareholders a firm has. Dividend decision at equilibrium is irrelevant since they cannot cause any shifting of investors.