ICPAR

**CERTIFIED PUBLIC ACCOUNTANT** 

**ADVANCED LEVEL 2 EXAMINATIONS** 

**A2.1: STRATEGIC CORPORATE FINANCE** 

DATE: WEDNSDAY, 30 NOVEMBER 2022

MARKING GUIDE AND MODEL ANSWER

#### RNOV2022ICPAI**SECTION (A** RNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022IC

#### RNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022IC RNOV2022ICPAR**QUESTION ONE** 2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022IC

MARKING GUIDE ARNOV 2022ICPARNOV 2022ICPARNO	Marks
Sub-question A) V2022ICPARNOV202ICPARNOV2	V2022ICP
Operating Cash flows 21CPARNOV20221CPARNOV	V2022IGP
Investment, a RNO V 2022 ICPARNO V 2	$\frac{1}{1202}0.5$
Realizable value V2022ICPARNOV202ICPARNOV202ICPARN	/202 <b>0.5</b> P
Workings of capital (maximum 1.5 marks for workings and 0.5 for posting) 2022ICPARN	V2022I2P
Discount, rate, NOV20221CPARNO	$\frac{1}{1202}0.5$
Present Values OV2022ICPARNOV202ICPARNO	V202 <b>:0.5</b> P
Base case Present value PARNOV2022ICPARNOV202ICPARNO	V2022IGP
Base case Present value-based decision PARNOV20221CPAR	72020.5
Issue costs calculation ICPARNOV2022ICPARNOV202ICPARN	/202 <b>:0.5</b> P
Tax shield on subsidized loan	$0.5^{\circ}$
Tax shield on bank loan arnov20221cparnov2	<del>/2022ICP</del> /2022ICP
Interest costs nov2022 icparnov2022 icparnov2022 icparnov2022 icparnov2022 icparnov2022 icparnov2022 icparnov2020 icparnov	V2022I <b>Q</b> P
Tax relief	V2022IGP
Discount factor 0 v20221CPARNO	/2022ICP /2022Idp
Present values NOV2022ICPARNOV202ICPARN	V2022IQP
Net Present value	/2022IGP
Subsidy benefit 0 v20221CPARNO	/202 <b>0.5</b>
Adjusted APV OV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV	V2022ICP
Issue costs calculation ICPARNOV2022ICPARNOV202ICPA	$0.5^{\circ}$
Tax shield on subsidized loan OV20221CPARN	/202 <b>0.5</b>
Tax shield on bank loan PARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV	/202 <b>0.5</b> P
Subsidy benefit 0V2022ICPARNOV202ICPARNOV202ICPAR	$0.5^{\circ}$
Total benefits nov20221CPARNOV	/2022ICP /2022IdP
APV022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV	V2022IQP
Correct decision	/2022IGP
Maximum marks 2022 ICPARNO V 2022 IC	/20221CP
Sub question B ) V2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV	, LULLIUI
Calculation of debts	V2023I.5P
Calculation of equity 21CPARNOV2022ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202	/ <del>2022ICP</del> /202 <b>3 ,5</b> P
	V2022IQP
After tax cost of debt	/2022IGP
WACC calculation 0221CPARNOV20	/ <del>2022ICP</del> /2022I <b>2</b> P
Uses of WACC, Award 1 mark for a well explained, and 0.5 for only stated point, maximum 2 marks	V2022ICP V2022I <b>2</b> P

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RNOV2022ICPAK<mark>A2.1</mark>V2022ICPAKNOV2022ICPAKNOV2022ICPAKNOV2022ICPAKNOV2022ICPAKNOV2022ICPA<mark>RNOV2022ICPARNO</mark>V2022ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV

MARKING GUIDE 21CPARNOV2022ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV2	Marks
Limitations of WACC, Award 1 mark for a well explained, and 0.5 for only stated PARNO COINT, maximum 2 marks	0V2022IC 0V2022IQ 0V2022IC
Maximum marks 2022 ICPARNOV 20	V2022 <b>12</b>
Subquestion C V 2022 ICPA R NOV 2022 ICPA R NO	W2022IC
Acid-Test ratio (Award 0.5 mark for correct formula and 0.5 mark for correct ratio ARNO solution and 1 mark for correct interpretation). 2022 CPARNOV 2022 CPARNO	V2022IQ V2022IQ
Interval measure (Award 0.5 mark for correct formula and 0.5 mark for correct ratio solution and 1 mark for correct interpretation).	0V20221C1 0V20221 <b>2</b> 1 0V20221C1
Equity multiplier (Award 0.5 mark for correct formula and 0.5 mark for correct ratio solution and 1 mark for correct interpretation).	0V2022ICF 0V2022I <b>2</b> F
Long-term debt ratio (Award 0.5 mark for correct formula and 0.5 mark for correct ARNO ratio solution and 1 mark for correct interpretation). CPARNOV2022ICPARNOV2	V2022ICF V2022ICF
Accounts Receivable days (Award 0.5 mark for correct formula and 0.5 mark for correct ratio solution and 1 mark for correct interpretation).	0V2022ICP 0V2022I <b>Q</b> P 0V2022ICP
Return on assets (Award 0.5 mark for correct formula and 0.5 mark for correct ratio solution and 1 mark for correct interpretation).	0V2022ICF 0V2022ICF
Du Pont Identity 20221CPARNOV2	V2022ICI V2022ICI
Net Profit margin (Award 1 mark for correct formula and 1 mark for correct ratio PARNO solution). PARNO V2022ICPARNO V2022	0V2022ICI 0V2022I <b>2</b> 1
Asset turnover (Award 1 mark for correct formula and 1 mark for correct ratio solution).	V 20221CF )V 20221 <b>2</b> F )V 20221CF
Equity multiplier-It is marked already CPARNOV2022ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV2	V2022Id
Dupont identity (Award 1 mark for the formula, 1 mark for correct answer and 1 mark for interpretation)	V2022ICI V2022I <b>3</b>
Maximum marks <sub>20221</sub> CparnOv20221CparnOv202	V2022 <b>20</b>
Total marks: NO V2022ICPARNO V202ICPARNO V202ICPARNO V202ICPARNO V202ICPARNO V202IC	V2022 <b>50</b>

ARNOV2022IC

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CPARNOV2022ICPARNOV2022IC

## RNOV2022ICPAI**ModebAnswer**nov2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022IC

#### RNOV2022ICPA**(à) VISIYO Cò**NOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022IC RNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV202

RNOV2022ICPA<u>rnov</u>

u <b>Year</b> 0221CPARNOV20221CPARNOV20221C	IORNOV202	21CPARNOV	2 <b>2</b> 221CPARN	<b>3</b> /2022ICPA	R <b>4</b> 10V2022I
RNOV20221CPARNOV20221CPARNOV20221C RNOV20221CPARNOV20221CPARNOV20221C	FRW V202	FRW	FRW ARN	FRW ICPA OV 2022ICPA	<b>FRW</b>
NOV2022ICPARNOV2022ICPARNOV2022IC	'million'	2'million'	'million'	'million'	'million'
Post-tax operating cash flows 0V202210	PARNOV202	21CPA <b>37.5</b> V	2022IC <b>45.7</b> N	OV202 <b>53.4</b> A	RNOV <b>59</b> .91
Investment ARNOV2022ICPARNOV2022IC	-240	ZICPARNOV ZICPARNOV	2022ICPARN 2022ICPARN	OV 2022ICPA OV 2022ICPA	RNOV20221 RNOV20221
Realizable value V2022ICPARNOV2022IC	PARNOV202	2ICPARNOV	2022ICPARN	OV2022ICPA	RNOV2( <b>64</b> 1
Working capital (W1)	PARNOV <u>2</u> )2	-0.63	-0.53	-0.49	8.65
Cash flows ARNO V2022ICPARNO V2022IC	PARN-247)	2ICP36.87	2022 45.17	OV2( <b>52.91</b> A	RN 132.55

RNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022IC

RNOV2022ICPA<mark>RA. I</mark>V2022ICPARNOV202

(Year)022ICPARNOV2022ICPARNOV2022IC	HORNOV202	21CPARNOV	2 <b>2</b> 22ICPARN	0 <b>3</b> /2022ICPA	R <b>4</b> IOV2022]
CNOV2022ICPARNO V2022ICPARNO V2022IC	FRW	FRW	FRW	FRW	FRW
knov2022ICPARNOV2022ICPARNOV2022IC	million'	'million'	'million'	'million'	'million'
Discount factor 12% (W2) RNOV202210	PARNOV202	2ICP 0.893	2022 0.797	OV2( <b>0.712</b> A	RN00.636
Present value NOV20221CPARNOV20221C	PARN-247	32.92	2022ICP 36	OV2 37.67	84.3
Base case net present value VV202210	PARN- <b>56.1</b> )	2ICPARNOV	2022ICPARN	OV2022ICPA	RNOV2022

Base case net present value is approximately (FRW<sub>2</sub>56.1 million) and on this basis, the investment should be rejected. V2022ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPA

## Workings PARNOV20

PAR 1. Working capital 2022ICPA

Year 022ICPARNO	V2022IQPARNOV	2022ICPARNOV2	022ICPA <b>2</b> NOV20	221CPAR <b>3</b> 1OV2022	ICPARNOV2022I
RNOV2022ICPARNO	FRW	FRW ARNOV2	FRW RNOV20	FRW NOV2022	FRW OV20221
RNOV2022ICPARNO	'millions'	'millions'	'millions'	'millions'	'millions'
Working capital	V2022ICPARNOV	/2022ICPARNO <b>√</b> 2	0221CPARN( <b>7.63</b> 0)	221CPARNO <b>8:16</b> 2	ICPARNOV8.651
Required/(releas ed)	V2022ICPARNOV V2022ICPARN <b>O</b> V	2022ICPARNOV2 2022ICPARI <b>0.63</b> 2	0221CPARNOV20 0221CPARN <b>0.53</b> )	221CPARNOV 2022 221CPARNO <b>0.49</b> 2	ICPARNOV20221 ICPARNOV-8.65

#### 2. Discount rate

Using asset beta OV2022ICPARNO

Formula ERi =  $Rf+\beta i(ERm-Rf)$ 

Where.

ERi = Expected return of investment

 $Rf = Risk-free rate^{2022ICPA}$ 

 $\beta i = Beta of the investment$ 

ERm = Expected return of the market

All-equity financed discount rate = 4% + (11% - 4%) 1.14 = 11.98% =approximately 12%

#### 3. Issue costs

FRW120 million/0.97 = FRW 123,711,340

Issue costs = 3% x FRW123,711,340= FRW 3,711,340 or FRW 123,711,340- FRW 120,000,000 There will be no issue costs for the bank loan.

#### 4. Tax shield on subsidized loan

Use PV of an annuity (PVA) years 1 to 4 at 8% (normal borrowing rate) NOV20221CPARNOV PVIFA(8%,4year) =  $3.312 \text{ FRW}120\text{m/s} \cdot 0.031 \text{ x} \cdot 30\% \text{ x} \cdot 3.312 = \text{FRW} \cdot 3.696,192^{-21CPARNOV}$ 

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#### Note to markers:

Full credit should be given if tax shield is discounted at the government interest rate of 3.1% rather at the normal borrowing rate of 8%. ICPARNOV2022ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202IC

## 5. Tax shield on bank loan RNOV2022ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202

PAIAnnual repayment = (FRW 120m/PVA 8% Yr 1 = 4) = (FRW 120m/3·312) = FRW 36,231,884 = 10

Year 0221CPARNOV2	1221CPARNOV	2022ICPARNOV20	221CPAR 20V20221	CPARN3 V 2022I	CPARNQ V2022
RNOV2022ICPARNOV2	1221CPARNOV 1221CPARNOV	202 <b>FRW '000'</b>	FRW '000'	FRW '000'	FRW '000'
Opening balance 0 V2	22ICPARNOV	2022 <b>120,000</b> )V20	22ICP <b>.93,368</b> 2022I	CPA <b>64,605</b> 0221	CPA <b>i33,541</b> 0221
Interest at 8%	22ICPARNOV	<sup>2022</sup> 9,600 OV20	7,469	5,168	2,683
Repayment	1221CPARNOV	36,232	36,232	36,232	36,232
Closing balance 0 V2	22ICPARNOV	20221 <b>93,368</b> 0V20	221CP. <b>64,605</b> 20221	CPA <b>:33,541</b> 022I	CPARN <b>(8)</b> /20221

Year 0221CPARNOV2022 CPA	RNOV2022ICPARNOV20	221CPARNOV202	DICPARNOV202	2ICPARNOV202
NOV2022ICPARNOV2022 CPA	RNOV2022 <b>FRW</b> c' <b>000'</b> 20	22 <b>FRW\'000'</b> 02	FRW (000)2	21CFRW('000'2
Interest cost ARNO V2022 CPA	RNOV20221 <b>9,600.00</b> V20	22107,469.45 202	5,168.45	2102,683.38
Tax relief at 30%	2,880.00	2,240.83	1,550.54	805.01
Discount factor 8%/2022 CPA	RNOV20221C1 <b>0.926</b> )V20	221CP <b>0.857</b> V202	ICPA0.794/202	2ICPA 0.735 2022
Present value RNOV2022 CPA	RNOV20221 <b>2,666.88</b> /20	22101,920.40202	ICP <b>1,231.13</b> 202	2ICPA <b>591.69</b> 2022
Net present value	6,410.09	22ICPARNOV202	ZICPARNOV 202.	ZICPARNOV202

## 4 6. Subsidy benefit 2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV20

Benefit = FRW120million x (0.08 - 0.031) x 70% x 3.312 = FRW13.632.192

### 7. Financing side effects PARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV

RNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARN	FKYY UUU
Issue costs (W3) OV2022ICPARNOV2022ICPARNOV2022ICPARN	$_{ m IOV}$ -3,711 $_{ m PAR}$
Tax shield on subsidized loan (W4) 2022ICPARNOV2022ICPARN	
R Tax shield on bank loan (W5)RNOV2022ICPARNOV2022ICPARN	10V <b>26,410</b> PAR
Subsidy benefit (W6) 0221CPARNOV20221CPARNOV20221CPARN	13,632 <sup>PAR</sup>
Total benefit of financing side effects	20,027

Adjusted NPV = Base NPV + Total benefit of financing side effects =20.027+(56.1) = (36.073) Milion

The adjusted present value of the project is around FRW (36.073) million and so the project should be rejected.

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Capital Structure  Debt to Total Capitalization  Advantage    Debt to Total Capitalization	ARNOV2022ICPA ARNOV2022ICPA	ARNOV2022ICPA AR 40,480,000	ARNOV20%10 ARNOV246210
RNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICP	ARNOV20221CP	40,480,000 RNO 2022101	9.34% ARNOV20221
Equity to Total Capitalization 1,200,000	ARNOV2022ICPA Arnov2 <b>320</b> cpa	384,000,000	90.46%
R <b>Total</b>	ARNOV2022ICP	424,480,000	ARNOV2022I
RNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICP	ARNOV2022ICP	ARNOV2022ICPA	ARNOV2022I
Cost of Equity OV2022ICPARNOV2022ICPARNOV2022ICP	ARNOV2022ICPA	ARNOV2022ICPA	ARNOV2022I
RNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICP Risk Free Rate	ARNOV2022ICP	ARNOV2022ICP	9.00%
REquity Risk Premium 21CPARNOV20221CPARNOV20221CP	ARNOV2022ICFA	ARNOV 2022ICPA	8.00%
Levered Beta NOV2022ICPARNOV2022ICPARNOV2022ICP	ARNOV2022ICP	ARNOV2022ICPA	ARNOV0.841
ANOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICP	RNOV2022ICP	ARNOV2022ICP	RNOV2022I
<b>Cost of Equity</b> Rf+βi(ERm-Rf)=9%+0.84(8%)	ARNOV2022ICP	ARNOV2022ICP	15.72%
Market Premium = Market return - risk free rate	ARNOV2022ICP/	ARNOV2022ICP	ARNOV2022I
RNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICP	ARNOV2022ICP	ARNOV2022ICP	ARNOV2022I
Cost of Debt NOV2022ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICP	ARNOV2022ICP	ARNOV2022ICP	ARNOV2022I
Before trac Cost of Debt	ARNOV2022ICP	ARNOV2022ICPA	15%
r <b>Tax Rate</b> cparnov20221cparnov20221cparnov20221cp	ARNO V 2022I CPA ARNO V 2022I CPA	ARNOV 2022ICPA Arnov 2022ICPA	ARNO (30%)
After Tax Cost of Debt (15%*0.7) 21CPARNOV20221CP	ARNOV2022ICPA	ARNOV2022ICPA	10.50%
RNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICP	ARNOV2022ICP	ARNOV2022ICPA	ARNOV2022I
RNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICP	ARNOV2022ICP	ARNOV2022ICP	ARNOV2022I
WACC= *15.72%*90.46%)+(10.5%*9.54%)			15.22%

#### Uses of WACC:

- The Weighted Average Cost of Capital serves as the discount rate for calculating the Net Present Value (NPV) of a business;
- It is also used to evaluate investment opportunities, as it is considered to represent the firm's opportunity cost. Thus, it is used as a hurdle rate by companies; ICPARNOV2022ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202
- A company will commonly use its WACC as a <u>hurdle rate</u> for evaluating mergers and acquisitions (<u>M&A</u>), as well as for financial modelling of internal investments. If an investment opportunity has a lower Internal Rate of Return (<u>IRR</u>) than its WACC, it should buy back its own shares or pay out a dividend instead of investing in the project;
- It is said that the 'same opportunity never knocks twice'. For taking advantage, the right decisions have to be taken at the right time. Since the single rate is used for all new projects, the decisions can arrive at a faster pace and the new opportunity can be grabbed and taken benefit of.

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#### Limitations of using WACC: OV2022ICPARNOV

- The cost of equity and cost of debt is required to determine for calculating the WACC which is difficult to estimate for private companies due to lack of publicly available information. For public companies, there are various methods for calculating the cost of equity. There is no single formula that can be used in every company but assuming the cost of equity is difficult for calculating WACC;
- The WACC carries an assumption that the debt-to-equity ratio will remain constant. For the forecasting value of a company, it is assumed that the WACC will remain constant and the debt-to-equity ratio will also remain constant. But it is impossible because the debt-to-equity ratio changes and so will the WACC;
- The WACC can be lowered by increasing debts which will create problems. If the debt is added no beyond the optimal capital structure it will increase the present value of the cost of financial distress. PARNOV2022ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARN

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SN	Ratio RNOV2022ICPARN	Formula RNOV2022ICPARNOV202	Computations	Answer	
<del>rnov2</del> Rnov2 R <b>i</b> ov2	Acid-Test Ratio	(Current assets - 0221CPARNOV202 Inventory)/Current liabilities V202	(4800- 2 (1300)/3000 21CP	<del>arnov2022</del> 1 Arnov20221 Arnov <b>1</b> 0 <b>17</b> 1	
KNOV2 KNOV2 KNOV2 U <b>h</b> OV2	0221CPARNOV20221CPARNO 0221CPARNOV20221CPARNO 1nterval Measure <sub>PARNO</sub> 0221CPARNOV20221CPARNO	Current assets-inventory /Average daily operating costs	((4,800- 1300/(2,200/36 5))	ARNOV2022I Arnov2022I Arnov2022I Arnov <b>581</b> I	
RNOV2 RNOV2 RNOV2	<b>Equity Multiplier</b>	Total assets/Total equity	(8,700/4,200) CP	ARNOV20221 ARNOV20221 ARNOV2.07	
Nov2	Long-term debt ratio	Long-term debt/(Total Asset) 202	((1500/(8,700)	O.17	
RNOV2 RNOV2 RNOV2 RNOV2 RNOV2	Days <sup>2</sup> RNO vales ICPA in receivables 2022ICPARNO vales ICPA in 2022ICPARNO vales ICPARNO vales ICPAR	365 days/Receivables turnover or Receivable/Sales*365 days	365/(3200/170 0) or (1700/3200)*3 65	ARNOV2022I ARNOV2022I ARNOV2022I ARNOV2022I ARNOV <b>194</b> I	
RNOV2 R <b>vi</b> dv2	Return on assets	Net income/Total assets	(322/8,700)	3.70%	
RNOV2 RNOV2 VII	Du Pont Identity PARNOV2022ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV	Net Profit Margin*Asset Turnover*Equity Multiplier	(0.1006*0.367 8*2.0714)%	7.66%	
RNOV2	)22ICPARNO V2022ICPARNO )22ICPARNO V2022ICPARNO )22ICPARNO V2022ICPARNO	Net Profit Margin = Net RNOV202 Income*100 / Revenue ARNOV202	2 CPARNOV2022ICP 2 (+322/3,200) <sup>ICP</sup>	ARNOV20221 ARN10.06%	
RNOV2 RNOV2 RNOV2	)22ICPARNO V2022ICPARNO )22ICPARNO V2022ICPARNO )22ICPARNO V2022ICPARNO	Asset Turnover = Sales*100 /Average Total Assets	2 CPARNOV 2022ICP 2 (+3200/8700) CP	RNOV20221 R 36.78%	
RNOV2 RNOV2 RNOV2 RNOV2	022ICPARNO V2022ICPARNO 022ICPARNO V2022ICPARNO 022ICPARNO V2022ICPARNO 022ICPARNO V2022ICPARNO	Equity Multiplier = Average Total Assets*100 / Average Shareholder's Equity	2 CPARNOV2022ICP 2 CPARNOV2022ICP 2 (8,700/4,200) CP	ARNOV20221 ARNOV20221 ARNOV20221 AF <b>207.14%</b>	

A2.1 2022ICPARNO V 2022ICPARNO

- **i.Acid-Test ratio:** The acid test (quick) ratio is an indicator of a company's short-term liquidity position and measures a company's ability to meet its short-term obligations with its most liquid assets. The quick ratio is considered a more conservative measure than the current ratio, which includes all current assets as coverage for current liabilities. A quick ratio of 1.17 indicates that the company has FRW 1.17 of liquid assets available to cover each FRW 1 of its current liabilities. Ideally the standard of quick ratio is 1:1, therefore TURINDANE Co is performing above the average by 0.17.
- **ii.Interval measure:** Total costs for the year, excluding depreciation and interest, were FRW 2,200 million. The average daily cost was FRW2,200 million/365 = FRW 6.03 Million per day. The interval measure is thus FRW 3,500 million/FRW 6.03 =581 days. Based on this, TURINDANE Co could hang on for 19 months or so.
- iii.Equity multiplier: The equity multiplier is a risk indicator that measures the portion of a company's assets that is financed by stockholder's equity rather than by debt. It is calculated by dividing a company's total asset value by its total shareholders' equity. Generally, a high equity multiplier indicates that a company has a higher level of debt. Investors judge a company's equity multiplier in the context of its industry and its peers, which is absent in this case.
- **iv.Long-term debt ratio:** The long-term debt-to-total-assets ratio is a measurement representing the percentage of a corporation's assets financed with long-term debt, which encompasses loans or other debt obligations lasting more than one year. This ratio provides a general measure of the long-term financial position of a company, including its ability to meet its financial obligations for outstanding loans. A ratio of 0.17 indicates that the company has 17% of long-term debt for each FRW 1 it has in assets.
- **v.Accounts receivable days:** This is a measure of the average number of days that it takes a company to collect payment for a sale. A high number suggests that a company is experiencing delays in receiving payments. That can cause a cash flow problem. A ratio of 194 days generally appears to be higher than the 45 days generally considered acceptable. TURINDANE Co should ensure the recovery process is strengthened.
- vi.Return on assets: Return on assets (ROA) is an indicator of how profitable a company is relative to its total assets. ROA gives a manager, investor, or analyst an idea as to how efficient a company's management is at using its assets to generate earnings. The company earns a profit of 3.7% per FRW 1 invested.
- vii.Du Pont Identity: The DuPont identity is an expression that shows a company's return on equity (ROE) can be represented as a product of three other ratios: the profit margin, the total asset turnover, and the equity multiplier. DuPont identity tells us that ROE is affected by three things:
  - 1. Operating efficiency, which is measured by profit margin;
  - 2. Asset use efficiency, which is measured by total asset turnover; and
  - 3. Financial leverage, which is measured by the equity multiplier.

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## RNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICI ${f SECTIONB}$ arnov2022ICParnov2022ICPARnov2022ICPARnov2022ICPARNOV2022IC

## RNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022IC<u>PARNOV2022ICP</u>ARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022IC RNOV2022ICPAR**QUESTION**ARNOV2022ICPARNOV202

MARKING GUIDE 21CPARNOV2022ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPA	Marks
Sub-question A)v20221CPARNOv20221CPARNOv20221CPARNOv20221CPARNOv20221CPARNOv20221CPARNOv20221CPARNOv20221CPARNOv20221CPARNOv20221CPARNOv20221CPARNOv20221CPARNOv20221CPARNOv20221CPARNOV20	NOV2022I
sales (award 1 mark for each year) 22ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPAR	NOV202 <b>1</b> 1
Total costs (award 1 mark for each year)	NOV20221 NOV202
Net cash flow (award 1 mark for each year) Nov20221CPARNOV20221CPARNOV20221CPAR	NOV202 <b>1</b> 1
Net benefit of the new policy over the current policy PARNOV2022ICPARNOV2022ICPAR	NOV20.51
PV of net cash flow 0221CPARNOV20221CPARNO	NOV20221 NOV202 <b>1</b> 1
Cost of switching 2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPAR	NOV202 <b>1</b> 1
Net benefit of switching	NOV20221
Correct Decision v20221cparnov20221cparnov20221cparnov20221cparnov20221cpar	NOV2 <b>0.5</b> 1
Maximum marks <sup>2022</sup> ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPAR	NOV202 <b>7</b> I
Sub-question B	NOV2022I
i. Arbitrage opportunity calculation 21CPARNOV2022ICPARNOV202ICPARNO	NOV202 <b>3</b> 1
i. Correct decision 20221CPARNOV20221CPARNOV20221CPARNOV20221CPARNOV20221CPAR	<sup>NOV202</sup> 1
ii. APT against CAPM comparison 221CPARNOV20221CPARNOV20221CPARNOV20221CPA	$_{ m NOV202}$
ii. Assumptions of APT (award 1 mark to each well explained assumption) V20221CPAI	NOV202 <b>5</b> 1
Maximum marks	
Sub-question ${f C}$ ) v20221cparnov20221cparnov20221cparnov20221cparnov20221cpar	NOV2022I
Arguments for CSR (award 1 mark to a well explained point, maximum 3.5 marks)	NOV2 <b>3?5</b> 1
Arguments against CSR (award 1 mark to a well explained point, maximum 3.5 marks)	NOV23.51
Maximum marks20221CPARNOV20221CPARNOV20221CPARNOV20221CPARNOV20221CPA	NOV202 <b>7</b> 1
Total Marks	NOV2 <b>25</b>

#### RNOV20221CPAI**Model)Answer**nov20221CParnov20221CParnov20221CParnov20221CParnov20221CParnov20221CParnov20221CParnov

RNOV2022ICPAI RNOV2022ICPAI	(a)Details PARNO V202210	PAR Formula PAR	Current	RNONew22ICE	ARNOV2022ICI ARNOV2022ICI	Notes 221
RNOV2022ICPAI	RNOV2022ICPARNOV2022IC	CPARNOV2022ICPAR	No Policy CP	ARN <b>Policy</b> 21CF	ARNOV2022ICI	PARNOV2022I
RNOV2022ICPAI RNOV2022ICPAI	Price per Kg	CPARNOV2022ICPAR	250	250	ARNO V 2022ICI ARNO V 2022ICI	PARNO V 20221 PARNO V 20221
RNOV2022ICPAI	Cost per Kg RNO V2022IO	CPARNOV2022ICPAR	NOV14021CP/	ARNO <b>140</b> 221CE	ARNOV2022ICI	PARNOV2022I
RNOV2022ICPAI	Quantity sold NO V2022IO	CPARNOV2022ICPAR	NO 1,500 CP	RN1,600 <sup>21C1</sup>	ARNOV2022ICI	PARNOV2022I
RNOV 2022ICPAI RNOV 2022ICPAI	Rate of return	CPARNOV2022ICPAR	NOV2022ICP/ NOV2022ICP/	ARNOV2022ICE	2.5%	PARNO V 20221 PARNO V 20221
RNOV2022ICPAI	Sales022ICPARNOV2022IC	Price *Quantity	N 375,000 P	R 400,000 C	ARNOV2022ICI	Note 120221
RNOV 2022ICPAI RNOV 2022ICPAI	Total CostPARNOV202210	Cost *Quantity	210,000	224,000	ARNOV 2022ICI ARNOV 2022ICI	Note 220221
RNOV2022ICPAI	RNOV2022ICPARNOV2022IC	CPARNOV2022ICPAR	NOV2022ICP	ARNOV2022ICE	ARNOV2022ICI	PARNOV2022I
RNOV2022ICPAJ Rnov2022ICPAJ	Net Cash flow	PA Sales-Cost PAR	N 165,000	ARM <b>76,000</b> ICE ARNOV2022ICE	ARNOV2022ICI ARNOV2022ICI	Note 3 <sup>20221</sup>

RNOV2022ICPA<mark>RACI</mark>V2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2021CPARNO RNOV2022ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202

R(a)DetailsPARNOV2022IO	CPAR Formula CPAR	NCurrent P	RN(New2ICI	ARNOV2022IC	PAR Notes 221
RNOV2022ICPARNOV2022IC	CPARNOV2022ICPAR	Policy	Policy	ARNOV2022IC	PARNOV20221
Net Cash flow NOV202210	CPARNOV2022ICPAR	NOV2022ICP	ARNOV2022ICI	AR11,000 <sub>21C</sub>	PARNote 4221
PV of Net Cash Flow	CPARNOV2022ICPAR CPARNOV2022ICPAR	NOV2022ICP NOV2022ICP	ARNOV2022ICI Arnov2022ICI	440,000	Note 5
Cost of Switching	CPARNO V 2022I CPAR	NOV2022ICP	ARNOV2022ICI	ARNOV2022IC	PARNOV2022
Incremental costs v202210	CPARNOV2022ICPAR	NOV2022ICP	ARNOV2022ICI	AR 14,000 2IC	ARNote 622
Incremental costs due	CPARNOV2022ICPAR	NOV2022ICP	ARNOV2022ICI	375,000	Note 7
to 100V20221CPARNOV202210	CPARNOV2022ICPAR	NOV2022ICPA	ARNOV 2022ICE ARNOV 2022ICE	ARNOV 2022IC	PARNOV2022 PARNOV2022
delay0221ClinRNOVcash	CPARNOV2022ICPAR	NOV2022ICP	ARNOV2022ICI	ARNOV2022IC	PARNOV2022
collection PARNO V2022IO	CPARNOV2022ICPAR	NOV2022ICP	ARNOV2022ICI	ARNOV2022IC	PARNOV2022
Total Cost of	CPARNOV2022ICPAR	NOV2022ICP	ARNOV2022ICI	389,000	Note 8
Switching PARNOV 2022 IO	CPARNOV2022ICPAR	NOV2022ICP	ARNOV2022ICI	ARNOV2022IC	PARNOV2022
Net benefit of	CPARNOV2022ICPAR CPARNOV2022ICPAR	NOV2022ICP NOV2022ICP	ARNOV2022ICE Arnov2022ICE	51,000	Note 9:
switching PARNOV2022IO	CPARNOV2022ICPAR	NOV2022ICP	ARNOV2022ICI	ARNOV2022IC	PARNOV2022

#### **Decision: Switch should be made**

Note1: Cashflow of the old policy is given by the old quantity (1500) times the price while the cashflow under the new policy the quantity should be adjusted from 1500 kg to 1600 kg.

Note 2: Total costs under the old policy is given by the old quantity (1500 Kg) times the cost of kg while the total cost under the new policy the quantity should be adjusted from 1,500 kg to 1,600 kg

Note 3: The net cash flow/benefit under both policy will be given by the difference between total sales and total costs

Note 4: This is the net benefit that will be generated once the new policy is adopted. This is given by the difference between net cashflows from new and old policy wich is FRW 165,000 and FRW 176,000 respectively

Note 5: This is given by net benefit between the old and new policy discounted at 2.5%. Notice that we have treated the monthly cashflow as a perpetuity because the same benefit will be realized each month forever.

Note 6: This is the incremental costs that will arise as a result of increased quantity from Kg1,500 to Kg 1,600 at a cost of FRW 140 per Kg

**Note 7:** This will be the incremental cost that will arise as a result of delay of cash collection which is now after 30 days if the new policy is adopted.

Note 8: This total cost of switching from the old to the new policy will be given by the total of incremental costs from both delay in cash collection and incremental cost

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Note 9: The total net benefit of switching from the current to the proposed credit policy will be given by the difference between the PV of benefits expected from adopting the new credit policy and total switching costs

#### b) APT

## (i) Arbitrage Opportunities

The slope between A and B is (10% - 5%) = 5%

whereas the slope between B and C is

$$\frac{(20\% - 10\%)}{(3-2)} = 10\%$$

If the beta of stock C was increased to 4, the slope between B and C would be 5%, as required in equilibrium. So **yes**, there are arbitrage opportunities because they do not all lie on the same line. Clearly, if the beta of stock C was increased to 4, then they would all lie on the same line.

## (ii) Differences and assumptions

The APT is an alternate equilibrium pricing model that is built on different assumptions than the CAPM. Specifically, the APT does not assume that investors make decisions according to the mean-variance rule, and investors do not have to be risk averse.

## The assumptions of the APT are:

- Capital market is characterized by perfect competition, and individual investors cannot influence the prices; 022ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICP
- All investors have the same expectations regarding the future in terms of mean, variance and covariance terms. Rates of return depend on some common factors and some noise, which is firmspecific;
- A very large number of assets exist in the economy;
- Short sales are allowed, and the proceeds are available to the short sellers:
- Investors prefer more wealth to less.

#### c) Arguments for and against CSR:

#### Arguments in favour of CSR include that it: V2022ICPARNOV2022

- Creates positive Public Relations for Bigogwe Supermarket Ltd, or, as a minimum avoids bad P.R.:
- Helps attract new and repeat custom which can improve Bigogwe Supermarket Ltd's financial metrics:
- Improves staff recruitment, motivation and retention at Bigogwe Supermarket Ltd;
- Helps keep Bigogwe Supermarket Ltd within the law and helps avoid fines and penalties. However, there are many writers who vigorously oppose the notion that private

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# RNOV2022ICPAI**organisations should embrace social responsibility. Some of the main arguments against CSR** PARNOV2022ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV20

- RNOV2022ICPA Market capitalism is the most equitable form of society that has ever appeared;
- RNOV2022ICPAI. The ethics of doing business are not those of wider society; V2022ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202I
- Governments are responsible for the well-being of society;
- RNOV2022ICPAR An organization's maximum requirement is to remain within the law, no more than this is PARNOV RNOV2022ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202IC

# rnov20221cpai**Question.Three** 21cparnov20221cparnov20221cparnov20221cparnov20221cparnov20221cparnov20221cpar

MARKING GUIDE ZICPARNOV ZUZZICPARNOV ZUZZICP	Marks
Sub Question A V2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPA	RNOV202
Calculation of E(st)(award 0.5 mark for each year, maximum 1.5 mark) NOV2022ICPA	RNO1/.5022
Calculation of NPV	RNOV2022
calculation of cashflows in FRW (award 0.5 mark for each year, maximum 2 marks)	RNOV <b>2</b> :02:
Corect posting of discounting factor <sup>21CPARNOV2022ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV2</sup>	RNO0.5)22
calculation of PVs (award 0.5 mark for each year, maximum 2 marks)	202
Calculation of NPV0221CPARNOV20221CPARNOV20221CPARNOV20221CPARNOV20221CPA	RNOV <b>2</b> 022
Correct decision V2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPA	RNOV202.
Maximum Marks 1022 ICPARNO V 2022 IC	RNOV202
Sub:Question B V2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPA	RNOV202
Cost of importation 0221CPARNOV20221CPARNOV20221CPARNOV20221CPARNOV20221CPA	RNO0.5)2
Calculation of profit	RNOV202
Exchange rate with increase NOV2022ICPARNOV202ICPARNOV202ICPA	RNO <b>0.5</b> )2
Cost of importation with increase 0221CPARNOV2022ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV20	RNO0.502
Calculation of profit with increase	RNOV202
Calculation of cost of importation 022ICPARNOV202ICPARNOV202IC	RNO <b>0.5</b> )2
Calculation of sales price ARNOV2022ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202I	$0.5^{\circ}$
Break even exchange rate arnov20221CPARNOV2021CPARNOV2021CPARNOV2021CPARNOV2021CPARNOV2021CPARNOV2021CPARNOV2021CP	0.5
Maximum Marks <sup>2</sup> 0221CPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPA	RNO\ <b>5</b> 202
i. Award mark for each of the two correct descriptions and 1 mark for each correct example ,maximum 4 marks	RNOV202 RNOV <b>2</b> 02
ii. Award 2 marks for a correct explanation of political risk and 2 marks for each pacorrect explained way of Managing political risk maximum 8 marks PARNOV2022ICPA	RNOV202 RNOV202 RNOV202
Maximum Marks <sup>2</sup> 0221CPARNOV20221CPARNOV20221CPARNOV20221CPARNOV20221CPA	RNO 12 <sup>02</sup>
NO V 2022 I CPARNO V 2022 ICPARNO V 2022 ICPARNO V 2022 ICPARNO V 2022 ICPARNO V 2022 ICPA Total Marks: NO V 2022 ICPARNO V 2022 ICPARNO V 2022 ICPARNO V 2022 ICPARNO V 2022 ICPA	25

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#### 21CPA | **Model Answer** Nov20221CPARNOV20221CPARNOV20221CPARNOV20221CPARNOV20221CPARNOV20221CPAR

# 2022ICPA (a) RUNIGA Investments PARNOV2022ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPAR

Time	Free Rate Rwanda(	Free Rate Europe	Spot Rate	E(ST) = [(1 + FRW) / (1 +
$(t)_{202}$	PICPARN FRW)	0V20221 <b>(Eur)</b> \0V2022	$_{\rm ICPA}$ (So) $_{ m V201}$	REur)]t S0 NOV2022
RNO <b>V</b> 202	21CPARN <b>7.40%</b> 21CPARN	OV2022I <b>2.10%</b> NOV2022	ICP <b>A1,170</b> V202	21CPARNO\ <b>1230.7346</b> RNO\202211
INO2202	IICPARN 7.40% <sup>2</sup> ICPARN	2.10%	ICPA <b>,170</b> <sup>V202</sup>	21CPARNO 1294.6219 RNO V 2022 II
IRNO \$202	TCPARN 7.40% TCPARN	V2022 2.10% V2022	1,170	21CPARNO 1361.8256 NOV20221

Time (t)	Cash flows	Sale Value	$\mathbf{E}(\mathbf{ST})^{022}$	FRW Cash flows	<b>DF</b> (10%)	PARN <b>pv</b> 20221
NOV20221 2NOV20221	EURO	FRW 2221CI	FRW/€	FRW	RNOV2022IC RNOV2022IC	PAR FRW
RNOV2022I	CPAI <b>000'</b> V2022	ICPAR <b>'000'</b> 2022ICI	ARNOV2022	( <b>000</b> knov2022icpa	RNOV2022IC	PARN <b>000'2</b> 022I
RNOV2020I	-21,000	ICPARNOV2022ICI	1,170.00	-24,570,000	RNOV2022IC	-24,570,000
RNOV20221	4,300	ICPARNO V 2022 ICI ICPARNO V 2022 ICI	1,230.73	5,292,139	0.909	4,810,554
RNOV202 <b>2</b> 1	CPA <b>5,200</b> 2022	ICPARNOV2022ICI	AR1,294.62	6,732,024 022 ICPA	RN( <b>0.827</b> 2IC	PA15,567,3841
NOV20231	6,300	13,500	1,361.83	26,964,234	0.751	20,250,140
NPV	CPARNOV2022	I <del>CPARNO V 2022ICI</del> ICPARNO V 2022ICI	PARNOV2022	CPARNOV2022ICPA	RNOV2022IC	6,058,078

## Decision: Invest in this project as it has a positive NPV

#### (b)RUNIGA

RNOV2022	ZICPARNO V 2022ICPARNO V 2022ICPARNO V 2022ICPARNO V 2022ICPARNO V 2022ICPA <b>Amounts</b> i
RNOV2022	Quantity sold ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARN45,000IC
RNOV2022	Sales price $^{0221}$ CPARNOV2022ICPARNOV202ICPARNO
KNO V 2022 RNO V 2022	Cost of production in BIF 221 CPARNOV 2022 ICPARNOV 2022 ICPARNOV 2022 ICPARNOV 350
RNO V 2022 RNO V 2022	Exchange rateicparnov2022icparnov2022icparnov2022icparnov2022icparnov1.97io
RNOV2022	Cost of production in FRW (350/1.97) 2022ICPARNOV2022ICPARNOV2022ICPAR 177.66510
RNOV2022	Profit (45000*(260-177.665) PARNOV2022ICPARNOV2022ICPARNOV2022ICPA3,705,075
RNOV2022	Exchange rate increase 12%
RNO V 2022 RNO V 2022	Exchange rate with increase 1.97*(1+12%)
RNOV2022	Cost of production in FRW H with increase #350/2.2060221CPARNOV20221CPARN 158.6310
RNOV2022	Profit - with increase (45000*(260-158.63) PARNOV2022ICPARNOV2022I 4,561,675.13
RNOV2022	2ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022I
RNOV2022	PICPARNOV2022ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV2
Ri <mark>v</mark> ov2022	SICIANINO VZUZZICIANINO VZUZZICIANINO VZUZZICIANINO VZUZZICIANINO VZUZZICIANINO V
RNOV2022	Cost of production in BIF221CPARNOV20221CPARNOV20221CPARNOV20221CPARNOV35010
RNOV2022	${ m Sales~price}$ 0221CPARNOV20221CPARNOV20221CPARNOV20221CPARNOV20221CPARNOV $260$ 10

## 21CPAI**(c) International transactions and finance** nov20221CPARNOV20221CPARNOV 21CP**4: PPP:**20221CPARNOV20221CPARNOV20221CPARNOV20221CPARNOV20221CPARNOV

The basic idea behind *absolute purchasing power parity* is that a commodity costs the same regardless of what currency is used to purchase it or where it is selling. For instance, if a loaf of bread costs Ugx 5,000 in Uganda, and the exchange rate is Ugx 3.5 per FRW, then a loaf of bread

RNOV2022ICPARNOV2022 Break-even exchange rate (BIF/FRW) 22ICPARNOV2022ICPARNOV2022ICPARN1.3462 ICPARNOV

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costs Ugx 5,000/3.5 = FRW 1,428 in Rwanda. In other words, absolute PPP says that FRW1 will buy you the same number of, say, beans anywhere in the world. (This concept is sometimes referred to as the law of one price.).

On the contrary, Relative Purchasing Power Parity is an economic theory which predicts a relationship between the inflation rates of two countries over a specified period and the movement in the exchange rate between their two currencies over the same period. It is a dynamic version of the absolute purchasing power parity theory. Suppose the Ugx-FRW. Suppose that FRW exchange rate is currently S0 = Ugx 3.50. Further suppose that the inflation rate in Britain is predicted to be 10% over the coming year, and (for the moment) the inflation rate in Rwanda is predicted to be zero. The exchange rate in a year will be  $Ugx 3.50 \times 1.1 = Ugx 3.85$ .

#### ii.Political risk:

## **Description of Politic risk**

Politic risk refers to changes in value that arise as a consequence of political actions. Political risk is the risk an investment's returns could suffer as a result of political changes or instability in a country. Instability affecting investment returns could stem from a change in government, legislative bodies, other foreign policymakers or military control. Political risk is also known as "geopolitical risk," and becomes more of a factor as the time horizon of investment gets longer. They are considered a type of jurisdiction risk.

Managing Political risk ICPARNOV2

Political risk can be hedged in several ways, particularly when confiscation or nationalization is a concern:

- The use of local financing, perhaps from the government of the foreign country in question, reduces the possible loss because the company can refuse to pay the debt in the event of unfavorable political activities;
- Structuring the operation in such a way that it requires significant parent company involvement to function is another way to reduce political risk;
- Companies that operate internationally, known as multinational businesses, can purchase political risk insurance to remove or mitigate certain political risks. This allows management and investors to concentrate on the business fundamentals while knowing losses from political risks are avoided or limited. Typical actions covered include war and terrorism;
- Avoid it in the first place: research the riskiness of a country, either by paying for reports from consultants that specialize in making these assessments or doing research yourself using the many free sources available on the internet. Then you will have the more informed option to not set up operations in countries considered political risk hot spots.

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#### RNOV2022ICPAI**QUESTION FOUR**022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022IC

MARKING GUIDE 21CPARNOV20221CPARNOV20221CPARNOV20221CPARNOV20221C	ARMarks
Sub Question A V2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022IC	ARNOV20
i. Cash payment )v20221CPARNOV2021CPARNOV20221CPARNOV2021CPARNOV2021CPARNOV2021CPARNOV2021CPARNOV2021C	$0.5_{0}$
Market value of the target RNOV2022ICPARNOV202ICPAR	ARN <b>(0.5</b> 20
PV of the incremental cash flow	PARNOV20
Value of the target2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022IC	PARNO <b>V</b> 20
% of the firm given up CPARNOV2022ICPARNOV202ICPAR	ARN 0.5
Market value of the acquirer NOV2022ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202I	ARNO 1520
Equity cost ARNO V2022ICPARNO V	ARNO¥20
ii. NPV cash value of the target V20221CPARNOV20221CPA	0.5
Cost of acquisition 0221CPARNOV2022ICPARNOV202ICPA	ARN 0.520
NOV 0221 PARNO V 2022ICPARNO V	ARNOV20
Value of the target2022ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPAR	ARN <b>0.5</b> 20
Equity cost	ARN 0.5
NPV (stock arnov2022) cparnov2022 i cparnov2	PARNOV20
iii.Correct decision 022ICPARNOV202	PARNO¥20
Maximum Marks 2022 ICPARNOV 20	ARNO V 20 PARNO <b>10</b> 20
Sub Question B V2022ICPARNOV202ICPARNOV	PARNOV20
Assets from NTARAMA	ARNOV20
Assets from IGIKWE21CPARNOV20221CPARNOV20221CPARNOV20221CPARNOV20221C	PARNO <b>I</b> /20
Purchase price of IGIKWE RNOV2022ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202IC	ARNOV20
Goodwill created v2022ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202I	PARNO V20
Total assets from both companies 0221CPARNOV20221CPARNOV20221CPARNOV2022ICPARNOV202ICP	ARNOV20
Maximum Marks <sub>2022</sub> ICPARNOV2022ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPA	PARNO V 20
$\textbf{Sub Question C} \lor 2022 \texttt{ICPARNOV2022} I$	ARNOV20
Financial leverege, a well explained earn 2 marks	PARNOV20
Risks associated with financial leverege (award 2 marks for each well explained in point, maximum 6 marks) ARNOV2022ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV202ICPARNOV2	PARNOV20 PARNOV20
MM no tax theory, a well explained theory earns 2 marks	200
Maximum Marks <sup>2</sup> 0221CPARNOV2022ICPARNOV202ICPARNOV2	ARNO V20
Total Marks	ARN(2520

RNOV20221CPARNOV20221CPARNOV20221CPARNOV20221CPARNOV20221CPARNOV20221CPARNOV20221CPARNOV20221CPARNOV20221CPARNO

RNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICP<mark>Page 15 of 17</mark> PARNOV2022IC RNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV20

CPARNOV2022IC

#### **Model Answer**

## (a)Transaction 1:

Qn	Particulars	FRW '000'
RHOV	Cash payment 0221CPARNOV2021CPARNOV20221CPARNOV2021CPARNOV2021CPARNOV2021CPARNOV2021CPARNOV2021CPARNOV	35,000
RNOV	2.Stock payment: ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022	2ICPARNOV20
RNOV	<sup>2</sup> Market value of the target V2022ICPARNOV2022ICPARNOV2022ICPARNOV2022	210 <b>45,000</b> V20
RNOV	<sup>2</sup> PV of the incremental cash flows (1,500,000/12%) <sup>RNOV2022ICPARNOV2022</sup>	12,500
RNOV	Value of the target	57,500
RNOV	% of the acquiring firm given up PARNOV20221CPARNOV20221CPARNOV2022	36%
RNOV	2 Market value of the acquirer 0221CPARNOV20221CPARNOV20221CPARNOV2022	75,000
RNOV	<sup>2</sup> Equity Cost (57,500+75,000)*36% RNOV2022ICPARNOV2022ICPARNOV2022	210 <b>47,700</b> V20
RNOV	/2022ICPARNOV2022ICPARNÓV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022	2ICPARNOV20
RNOV	720221CPARNOV20221CPARNOV20221CPARNOV20221CPARNOV20221CPARNOV2022 72 NPV by using cash; APNOV20221CPAP	ZICPARNOV20
ri <del>v</del> u v patoa	/20221CPARNOV20221	57,500
RNOV	2 Cost of acquisition PARNOV2022ICPARNOV202ICPARNOV	1C35,000 V20
RNOV	<sup>2</sup> NPV by using cash ARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022	22,500 V20
RNOV	NPV by using stock:	PICPARNOV20
RNOV	/2012 CPA NOWS STOCKARNOV2022 ICPARNOV2022 ICPARNOV202 IC	57,500
RNOV	2022101111110 V202101111110 V2021011111110 V2021011111110 V2021	area area of a second
KNOV	/2. <b>Equity.Cost</b> v20221cparnov20221cparnov20221cparnov20221cparnov2022 /2. <b>NPV:stock</b> :v20221cparnov20221cparnov20221cparnov20221cparnov2022	21047,700 / 20
DATOX	/2\npv\stock\v20221CPARNO\v2022	9,800

iii) Advice/Decision: Acquire with cash because the NPV is greater with the stock payment offer

#### (b) V20 Transaction 2:

For the merger to make economic sense, NTARAMA Ltd must feel the acquisition will increase value by at least the amount of the premium over the market value, so:

M10 120221C1 MM10 120221C1 MM10 120221C1 MM10 120221C1 MM10	EDW
RNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNOV2022ICPARNO	0V2022I <b>FRW</b> 10V
RASSETS from NTARAMA (41,000*100) ARNOV2022ICPARNOV2022ICPARNO	V202 <b>4,100,000</b> V
Assets from IGIKWE (9,300*220) 22ICPARNOV2022ICPARNOV2022ICPARNO	2,070,000
Purchase price of IGIKWE 9300*(220+100)	7.976.000
Goodwill created (2,976,000 -2,046,000)	030 000
Total assets of both companies(4,100,000+2,976,000)PARNOV2022ICPARNO	v202 <b>7,076,000</b>

#### (c) Financial leverage

#### (i) Financial leverage

Financial leverage is the use of borrowed money (debt) to finance the purchase of assets with the expectation that the income or capital gain from the new asset will exceed the cost of borrowing. In most cases, the provider of the debt will put a limit on how much risk it is ready to take and indicate a limit on the extent of the leverage it will allow. In the case of asset-backed lending, the financial provider uses the assets as collateral until the borrower repays the loan. In the case of a cash flow loan, the general creditworthiness of the company is used to back the loan.

#### Risks of Financial Leverage:

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- Although financial leverage may result in enhanced earnings for a company, it may also result in disproportionate losses. Losses may occur when the interest expense payments for the asset overwhelm the borrower because the returns from the asset are not sufficient. This may occur when the asset declines in value or interest rates rise to unmanageable levels.
- Volatility of Stock Price: Increased amounts of financial leverage may result in large swings in company profits. As a result, the company's stock price will rise and fall more frequently, and it will hinder the proper accounting of stock options owned by the company employees. Increased stock prices will mean that the company will pay higher interest to the shareholders.
- Bankruptcy: In a business where there are low barriers to entry, revenues and profits are more likely to fluctuate than in a business with high barriers to entry. The fluctuations in revenues may easily push a company into bankruptcy since it will be unable to meet its rising debt obligations and pay its operating expenses. With looming unpaid debts, creditors may file a case at the bankruptcy court to have the business assets auctioned in order to retrieve their owed debts.
- Reduced Access to More Debts: When lending out money to companies, financial providers assess the firm's level of financial leverage. For companies with a high debt-to-equity ratio, lenders are less likely to advance additional funds since there is a higher risk of default. However, if the lenders agree to advance funds to a highly-leveraged firm, it will lend out at a higher interest rate that is sufficient to compensate for the higher risk of default.

#### (ii) MM Theory

Modigliani and Miller (MM or M&M) have an argument that a firm cannot change the total value of its outstanding securities by changing the proportions of its capital structure. In other words, the value of the firm is always the same under different capital structures. In still other words, no capital structure is any better or worse than any other capital structure for the firm's stockholders.

#### END OF MODEL ANSWER AND MARKING GUIDE

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