CERTIFIED PUBLIC ACCOUNTANT
INTERMEDIATE LEVEL EXAMINATIONS
I1.1: MANAGERIAL FINANCE
DATE: THURSDAY, 29 APRIL 2021

INSTRUCTIONS:

1. **Time Allowed: 3 hours 15 minutes** (15 minutes reading and 3 hours writing).
2. This examination has **two** sections**; A & B.**
3. Section A has **three** Compulsory Questions while B has three questions of which **two** Should be attempted.
4. In summary attempt **Five** questions.
5. Marks allocated to each question are shown at the end of the question.
6. Show all your workings where necessary.

SECTION A

QUESTION ONE

Sodoma Ltd is the company that is engaged in production and sale of Liquors, it has been in the industry since 2012 and has been enjoying the strong demand in the market of Rwanda and the rest of East Africa. However, since January 2020 the company has started facing falling demand in its products due to the COVID-19 Pandemic that has dramatically affected the world economy including Rwanda. The sales of the company have dropped more than 70% in April 2020 due to Lock-down of the whole country and closure of all borders affecting exportation of their products. The Board of Directors have considered diversifying into new product lines and considered it as a good strategy to help the company to mitigate challenges that could potentially affect the economy.

The Head of Research and Development has presented to the Board of Directors the project of production and sale of hand sanitizers, and other alcohol related products used in Hospitals. He has said so after identifying that most of the products used in country are imported and their demand will remain stable during and after Covid-19 pandemic.

You have been called as the Financial Management Expert to help Sodoma Ltd to analyse the viability of the project and you were also given 10-years projected sales, and the costs related to the production of alcohol related products used in hospitals as follows:

	10 years projected sales and costs (Frw Millions)									
	1st year	**2nd year**	**3rd year**	**4th year**	**5th year**	**6th year**	**7th year**	**8th year**	**9th year**	**10th year**
Sales	900	963	1,050	1,113	1,146	1,180	1,216	1,252	1,290	1,329
Variable cost	360	385	420	445	458	472	486	501	516	531
Fixed cost	75	75	75	95	95	95	95	95	95	95

Additional Information:

1. Initial investment in machine is expected to cost Frw 1.5 billion
2. Machine Depreciation is estimated to be 10% straight line and is assumed to be a tax allowable expense
3. Cost of capital of Sodoma Ltd is normally 9% and is assumed to be the same for the project
4. Terminal value at 10^{th} year is assumed to be Frw 1,408 Million

a) Compute:

i. **Accounting Rate of Return (ARR).** (5Marks)

ii. **Discounted payback period.** (7Marks)

iii. **Internal Rate of Return (IRR).** (5Marks)

b) Management is considering whether the proposed project will use one of existing machines that are used in Liquor production or whether it will need to be replaced by new machines. The Market value of the existing machine is Frw 1.8 billion and is assumed to be the same as its book value. However, new the machine will improve efficiency in production per hour and there will be cost savings.

Below are information regarding expected cost savings and sales increases with the new machine.

	10 years projected cost saving and sales increases (Frw Millions)									
	1st year	2nd year	3rd year	4th year	5th year	6th year	7th year	8th year	9th year	10th year
Increase in Sales	135	144	157	134	138	142	182	188	193	199
Cost savings	47	50	55	58	60	61	63	65	67	69
Increase in Depreciation	70	70	70	70	70	70	70	70	70	70

Required:

You are tasked to advise management on the best strategy between buying a new machine or use existing machine to carry out the proposed project by using Net Present Value (NPV) technique of investment appraisal. (8Marks)

(Total 25Marks)

QUESTION TWO

a) Agaciro Hotel Ltd is a hotel ranked as 3-star hotel and located in Bugesera District near Kigali City. Its demand has increased since the last 5 years as the tourism in Rwanda has been expanding owing it to the different International Conferences it has been hosting. In addition, a "Visit Rwanda" campaign intensified interest from different people around the world to visit Rwanda. Recently, the government of Rwanda has decided to build an International Airport in Bugesera District that is expected to host more than 2 million passengers per year. This has created a new challenge to the hotel industry in Rwanda to increase its capacity and improve also service delivery, in response to the perceived boost in demand.

The Directors of Agaciro Hotel ltd are considering whether to pay dividends to shareholders from the profits made in the financial year ended 2019 or retain the whole profit and re-invest it in capital expansion projects so as to achieve at least a 5 star ranking. Alternatively, a company pays out dividends and then finances its expansion by debt.

Required:

You are tasked by the Directors as a Finance Expert to advice management on at least 8 factors determining dividend pay-out. (12Marks)

b) The Board of Directors of Agaciro Hotel Ltd are concerned about the agency problem that basically arises as a result of differing interests in management of the hotel, their centre of concern is on an agency problem between shareholders and the management of Agaciro Hotel Ltd.

Required:

You have been consulted to discuss how Dividend policy can be used to reduce agency problem between management and shareholders. (8 Marks)

(Total 20Marks)

QUESTION THREE

Nyabarongo Energy Ltd is a company engaged in manufacturing and selling of hydro power extracted from Nyabarongo River. Its sole client is EUCL, a company that is licensed by the government to supply electricity throughout the country. Nyabarongo Energy Ltd is 100% financed by equity and it has been in the industry since 2013 after completion of construction of its first plant. Recently, the company has been recording favourable growth in its sales and profitability as result of an efficient use of its plants. The Directors are considering raising more funds to finance expansion of its plants and then, increase its production capacity.

During the Board meeting, one of the directors mentioned about listing on Rwanda Stock Exchange (RSE) as a strategy to raise more equity capital to support its expansion project. The Directors are not sure of how much the value per share will be on the market. One director mentioned in the meeting that a CPA managerial finance student can help them in estimation of a market value of its shares.

You have been contracted to estimate the market value per share of Nyabarongo Energy ltd. Provided are more information you are expected to use in your valuation.

i. Number of shares: 5,000,000
ii. Total Dividends over last 5 years

Years	Profit after tax (Frw Million)	Dividends (Frw Million)
2019	2,572	772
2018	2,473	742
2017	2,378	713
2016	2,287	686
2015	2,199	660

iii. Dividends are expected to grow at a rate equivalent to the average growth rate in last 5 years' dividends.
iv. Cost of equity capital is 10%.
v. You have been as well provided with other information on P/E ratio of companies similar to Nyabarongo Energy ltd.

Company	P/E ratios
MN energy Ltd	24
Ntaruka energy Ltd	28
Kivu energy Ltd	25
Kwigira energy Ltd	27

Required:

a) **Explain P/E ratio valuation method and identify 3 problems with this method.** (3Marks)
b) **Calculate dividend growth rate.** (2Marks)
c) **Determine price per share based on Dividend valuation model.** (4Marks)
d) **Determine price per share based on P/E ratio method of valuation.** (4Marks)
e) **Explain limitations of dividend growth valuation model.** (2Marks)

(Total 15Marks)

SECTION B

QUESTION FOUR

Rurangwa was recently appointed as the Managing Director of Kamonyi Manufacturing Company Ltd (KMC Ltd), and his task was to evaluate the cost of the company's capital. The Capital structure of the company is made up of equity capital, redeemable debenture and preference shares. You have been hired as Finance Assistant and your first assignment is to calculate the cost of capital of KMC Ltd. Information below are provided to you in regards to capital structure of KMC Ltd.

KMC Ltd has recently paid dividends of Frw 124 per share which had a market price of Frw 100 per share and it has been experiencing dividend growth rate of 4% annually since the last 5 years and it is of management's opinion that the growth rate will be constant for the foreseeable future. The company also has issued 9% redeemable debenture of 600 million at the beginning of the year which will be redeemed at par value in 5 years from now. Furthermore, KMC Ltd has 10% preference shares with a market value of Frw 106 per preference share. Tax rate is 30%.

Required:

i. **Discuss difference between systematic and un-systematic risk.** (5Marks)
ii. **Calculate Cost of equity capital.** (5Marks)
iii. **Calculate Cost of debenture.** (6Marks)
iv. **Calculate cost of Preference Shares.** (4Marks)

(Total 20Marks)

QUESTION FIVE

Rwankuba Manufacturing Limited (RML) is a steel manufacturing company. It produces construction materials mainly for export although it also has a domestic market. The company has been experiencing favourable growth in recent years, however since the start of the year of 2020, RML has been experiencing challenging situation mainly due to Covid-19 pandemic that affected demand as the construction activities were stopped as result of lockdowns. This has led to liquidity problems in the company and its working capital management is becoming a topic of concern. You have been hired as a Finance Assistant and your first assignment is to evaluate the liquidity and working capital management of the company to be used by management for improvements.

The following information is provided to you.

Statement of Profit or Loss for the year ended 31 December 2019		
	Frw (million)	Frw (million)
Sales		600
Cost of sales	(200)	(200)
Gross Profit		**400**
Other operating cost	(150)	(150)
Profit before tax		250
Tax @ 30%		(75)
Profit after tax		**175**

Statement of Financial position as at 31 December 2019		
	Frw (Million)	**Frw (Million)**
Property, plant and equipment		1,033
Current assets		
Inventory	13	
Receivables	46	
Cash	17	76
Total assets		**1,109**
Equity & Liabilities		
Ordinary share capital Frw 700 per share		700
Retained earning		167
Total equity		867
Non-current Liabilities		
9% Debentures		200
Current Liabilities		
Trade Payables	18	
other current Liabilities	24	
total current Liabilities		42
Total Equity & Liabilities		1,109

Required:

a) Compute and Comment on;

i. **Receivable and Payable Days** (5Marks)

ii. **Inventory holding period** (2Marks)

iii. **Current and Quick ratios** (4Marks)

b) The Management of Rwankuba Manufacturing Limited has estimated the annual total cash requirement at Frw 5 billion. The Finance Manager estimated the cost of converting marketable securities into cash at Frw 50,000 and an average annual rate of return on marketable securities is assumed to be 10%.

Required: Determine

i. **The optimum amount of cash required each time cash balance reduces to zero (Economic conversion quantity, ECQ).** (3Marks)

ii. **Number of conversions per year.** (2Marks)

iii. **Average cash balance** (2Marks)

iv. **Total cost** (2Marks)

(Total 20 Marks)

QUESTION SIX

a) Rwamwiza is a portfolio manager at Kivu Asset Management Limited, an investment company that engages in management of portfolios of different high net worth individuals. You have been hired as an Investment Assistant in the company and the Portfolio Manager wants you to calculate the expected return and risk of his portfolio. You are given the following information regarding the portfolio:

Asset A		Asset B	
Return (%)	Probability (%)	Return (%)	Probability (%)
10	5	9	10
12	25	12	15
15	40	13	50
13	25	15	15
14	5	17	10

Required:

i. **Compute Expected Return and Risk (standard deviation) for each asset.** (6 Marks)

ii. **He has mentioned that two assets are combined into portfolio in the proportions of 60% in asset A and 40% in asset B. Calculate Risk (standard Deviation) of the portfolio if coefficient of correlation is 0.6.** (4 Marks)

iii. **What is the benefit of combining two assets into a portfolio?** (2 Marks)

b) Rwanda like any other country in the world has experienced an economic downturn due to Covid-19 pandemic. The Government of Rwanda established different measures to control the economy and boost both demand and supply. Among the many measures, the Central Bank put in place a reduction in reserve requirements from 5% to 4% in early April 2020, requiring banks to restructure outstanding loans of borrowers facing temporary cash flow challenges arising from Covid-19 pandemic as well as reducing Central bank rate from 5% to 4.5%.

The Ministry of Finance and Economic Planning (MINECOFIN) also put in place an Economic Recovery Fund in June 2020 to revive business activities and safeguard employment in the awake of Covid-19 pandemic.

You are required to discuss the implications of the Economic Recovery Fund as a source of finance to companies and how it will help in reduction of unemployment. (8Marks)

(Total 20Marks)

BLANK PAGE