CERTIFIED PUBLIC ACCOUNTANT

ADVANCED LEVEL 2 EXAMINATIONS

A2.1: STRATEGIC CORPORATE FINANCE

DATE: WEDNESDAY 27, NOVEMBER 2024

INSTRUCTIONS:

1. Time Allowed: **3 hours 45 minutes** (15 minutes reading and 3 hours 30 minutes writing).
2. This examination has **two** sections**: A & B.**
3. Section **A** has **one Compulsory Question** while section **B** has **three optional questions** to choose any **two.**
4. In summary attempt **three questions.**
5. Marks allocated to each question are shown at the end of the question.
6. Show all your workings where necessary.
7. The question paper should not be taken out of the examination room.

SECTION A

QUESTION ONE

MALAIKA Gorilla (MG) is a listed company in Kigali Stock Exchange, operating in the mining sector (specifically in the extraction and processing of minerals). The Board of Directors is currently considering an urgent course of action after poor performance in the year just ended.

The immediate option at hand is to implement strict cost control measures in chemicals used in mineral processing. This has been identified as the single costliest activity in the company's operations and an area that may not be mechanised in the short run.

In line with the above objective, NYABUGOGO Limited, a company specializing in hazardous chemical production and disposal has been identified as possible acquisition target.

Preliminary due diligence on NYABUGOGO Limited has revealed that the company is still owned by its original founders and that they may be willing to sell all their equity stake in the company at minimum net price of FRW 8,500 Million.

The company has never paid dividends before. However, as a result of interest shown by MG, the Directors have equated annual salaries paid to them as dividends and this amounts to an equivalent of FRW 189 worth of dividends per share.

Though NYABUGOGO Limited is a privately owned company, it is considered as the market leader in the sector, it has state of the art technology in chemical processing and waste management, it employs some of the best chemical engineers in the market and has a huge budget allocated to research and development.

NYABUGOGO Limited is the only company in the sector that has never been penalised by the environmental authority for pollution related offences.

To help in valuation of the possible offer price, the following information has been provided

Item	**MALAIKA Gorilla**	**NYABUGOGO Limited**
	FRW 'Million'	**FRW 'Million'**
Non-current assets – tangible	12,800	4,800
Goodwill	0	2,800
Current assets	4,400	2,600
Total	**17,200**	**10,200**
Ordinary share capital FRW 1,000 par value	10,000	5,200
Long-term loan	7,200	5,000
Total	**17,200**	**10,200**

Item	MALAIKA Gorilla	NYABUGOGO Limited
Turnover	12,500	6,500
Earnings Per Share, EPS (FRW)	55	85
Price Earnings ratio, PE	15:1	Not available
Beta equity	1.8	2.4

The following information has been provided:

1. Sector Price Earnings ratio of chemicals and waste disposal companies is 25:1
2. Corporate tax is 30% payable in the same year as the revenue to which it arises.
3. Risk free rate is 6% and market premium is 4.82%
4. Debt can be assumed to have a beta of zero
5. Should MG acquire NYABUGOGO limited, it is expected that the turnover will grow at 5% per year for unforeseeable future, the above turnover is based on the Million cubic litres that NYABUGOGO may process per year, which is currently at 6.5 Million cubic litres at price of FRW 1,000 per litre.
6. Before tax contribution to sales ratio is 30%
7. Tangible non-current assets of NYABUGOGO may be sold at 20% above the carrying value indicated above. Included in current assets is a receivable which has since gone bankrupt, amounting to FRW 200 Million.

Required:

a) **Calculate the price or a range of prices that MALAIKA Gorilla should offer to purchase equity stake in NYABUGOGO limited.** (20 Marks)

b) The Chief Finance Officer of MG has argued that 5% growth rate in sales revenues is unrealistic and too optimistic given 'green' agenda currently being fronted by major economies. Assuming no growth in sales revenues and a planning time period of 5 years only and that a minimum price suggested by the owners of NYABUGOGO will be offered.

Required:

Calculate sensitivity of the above investment in relation to sales prices, sales volume and discount rate (ignore taxation). Comment on the most sensitive variable and suggest how it should be addressed. (12 Marks)

c) The Chief Finance Officer is convinced this is the wrong way to go about cost control measures and has gone ahead to estimate how wrong the management will be if they go ahead with this project.

The outcomes based on the project's key variables as shown in the table below:

Key variable	NPV in FRW' Millions	Probability
Growth in sales by 5%	11,434	15%
No or zero growth in sales	987	65%
Increase in cost of capital to 4%	(2,402)	20%

Required:

Using the information in the table above, **calculate the risk of the above project and interpret the answer to the Board of Directors.** (8 Marks)

d) CFO has insisted that internal refurbishment planned for early next year should be simulated as much as possible since the current appraisal methods are "always wrong"
Below are the cash flows for the planned repairs that will cost FRW 40 Million and associated probabilities, a discount rate of 12% may be assumed in this section of the question.

Year1	Cash flows in FRW Million	Probabilities
	10	0.30
	15	0.40
	20	0.30
Year2		
	10	0.10
	20	0.20
	30	0.40
	40	0.30
Year 3		
	10	0.30
	20	0.50
	30	0.20

Required:

Analyse the inherent risk in this situation by simulating NPV calculation. Based on your simulation results, determine NPV using the following random numbers:
432367 762478 980745 284639 197283 584902 192039 183746 172837 264835
(10 Marks)
(Total: 50 Marks)

SECTION B

QUESTION TWO

Rwanda Construction Ltd

Rwanda Construction Ltd intends to apply portfolio theory in order to maximize overall returns and improve its investment methods. The company seeks to reduce market volatility risks by spreading its investment portfolio over a range of construction projects, including residential structures, commercial complexes, and infrastructure investments.

The portfolio manager has identified a number of projects operating in different industries across the county as follows:

Companies	Outstanding shares	Market price FRW	Sensitivity to the market
Abbas motors	120,000	643	1.04
Bobby textiles	160,000	438	1.15
Coby computers	200,000	325	0.80
Dawood medical	250,000	471	1.53

The project's expected return is as follows:

Companies	Expected return
Abbas motors	17.55%
Bobby textiles	21.60%
Coby computers	15.57%
Dawood medical	20.71%

The market portfolio return is 17.0% and the risk-free rate is 10%

Remera Import and Export Ltd (RIEL)

Remera Import and Export Ltd is exposed to considerable currency fluctuations because it exports agricultural products to Asia and imports machinery from Europe, the company is susceptible to changes in foreign currency rates. The Rwandan franc's recent volatility in relation to the US dollar and the Euro has hurt corporate margins by driving up import costs and lowering export revenue.

On 31st January 2024 RIEL purchased goods in United States worth USD 120,000 to be paid in two months later on 1st April 2024. Rwandan Franc Futures were available in the money market and could be bought in blocks of FRW 1,000,000 and each contract cost FRW 10,000

The exchange rate was as follows:

Rates	1 USD = FRW
Spot (31st January 2024)	765-768
Forward (1st April 2024)	795-799
Futures	775-777

Apex Rwanda

Apex Rwanda, a major infrastructure development firm, is navigating bond refinancing to manage its debt more effectively. The company aims to take advantage of lower interest rate to refinance its existing bonds reducing overall interest expense and improving cashflows. This strategic move is intended to free up capital for new project and enhance financial stability amidst Rwanda economic landscape.

Apex Rwanda issued a 10 – year bond of 20% FRW 100 Million nominal value five years ago. The bond was issued at 2% discount and issuing cost amounted to FRW 2 Million.

Due to the decline in the treasury bills rate in the recent past, interest rates in money market have been falling presenting favourable opportunity for refinancing.

An expert engaged by the firm to assess the possibility of refinancing debt reports that a new 12%, five years FRW 100 Million at par value bond can be issued at a cost of 5% and a discount of 3%.

The old bond can be redeemed at 10% premium and in addition two months interest penalty will have to be paid on redemption.

All bonds issue expenses including interest penalty are amortized on straight line basis over the life of the bond and are allowable for tax purposes. The companies tax rate is at 30% and after-tax cost of debt is 7%.

Required:

a) Based on the information above on Rwanda Construction, **determine whether the portfolio is efficient, inefficient, or super-efficient and advise on the best action to take.** (5 Marks)
b) **Determine the net gain/loss of using future contract** (8 Marks)
c) **Calculate Net Present Value of the refinancing decision and whether it is worthwhile to replace the bond or not.** (12 Marks)

(Total: 25 Marks)

QUESTION THREE

A Subsidiary

Belt Ltd of Rwanda a subsidiary of a Kenyan Conglomerate urgently requires funding in Rwandan franc to expand its local operation. Given the presence of foreign financial intermediaries in Rwanda, Belt ltd is exploring various funding option including loans and credit facilities from International Banks.

The company aims at leveraging these intermediaries' competitive interest rates and financial expertise to secure necessary capital. However; Belt Ltd must navigate the complexities of cross boarder financial regulation and currency risk management to ensure favourable terms.

Portfolios

Belt Ltd has a number of portfolio investments across the country, the company's management struggles with lack of cohesive strategy and advanced portfolio management tools. The conglomerates of Rwanda are considering the adoption of a comprehensive investment management software and seeking advice from financial consultants. The company struggles with effective management and optimization of its assets, including real estate, agriculture and technology. The complexity of balancing risk – return and resource allocation has led to inefficiencies and missed opportunities.

Financial Distress

Belt Ltd is currently facing significantly financial constrain that threaten its operational stability, it has experience delay in payment to supplies, increase in reliance of short-term debt to meet daily expenses, decline in working capital ratios and increase in account receivable turnover, indicating difficulty in collecting payments from clients and employee's moral deteriorate due to delay in salary. The management are unsure of future of the company.

Corporate Failure

Belt Ltd experience corporate failure due to inefficient utilization of resources, lack of human resource management, inefficient marketing, taxation and regulation policies, financial management resulting in unsustainable debt levels ineffective leadership and lack of strategic direction. Additionally, market competition erodes their market share while failure to innovate left them behind industry trends. Internal conflict and miscommunication also contribute to it.

Target Project

Belt Ltd has an opportunity to redeem its image by undertaking a project which is expected to generate good income. If the project proves successful, the company financial distress will be a history in the past. The investment project is faced with uncertainty and management of the company had agree to base their decision on what if scenario and base case situation.

The following table shows expected cashflows.

Years	Worst case FRW Million	Base case FRW Million	Best case FRW Million
0	100	100	100
1	20	30	40
2	20	30	40
3	20	30	40
4	20	30	40
5	20	30	40
Scrap value	5	20	30

The cost of borrowing fund is 13% and all cashflows are received at the end of the year except capital outlay.

Required:

a) **Explain four benefits of using foreign financial intermediaries to Belt Ltd.** (4 Marks)

b) **Examine five strategies that Belt Ltd could use in managing its portfolio.** (5 Marks)

c) **Discuss three causes and four solutions to the challenges faced by Belt Ltd as evidenced above.** (7 Marks)

d) i) Using scenario analysis, **determine the Expected Net Present Value and advise the Management.** (4 Marks)

ii) **Compute sensitivity changes in capital and scrap value for the investment to be rejected using base case scenarios and interpret your results.** (5 Marks)

(Total: 25 Marks)

QUESTION FOUR

Kabisa Co is a Rwanda based company with overseas subsidiaries within the regional trading block, it has never been involved in any form of hedging as the exchange rates within the block has been stable and predictable requiring little or no management. However; over the past two years there has been unpredictable fluctuation in exchange rates, which has brought unpredictability and exchange risks to the group though Kabisa Co would still like to maximize on any opportunities brought by the situation.

Treasury department of Kabisa Co are excited by the news that interest rates in Kenya are soaring and wishes to take the advantage of this by investing any surplus funds. They argue that it will add value by making short term deposits and converting into local currency whenever it is needed.

However; if Kabisa Co treasury were to make a deposit in Kenya, then they would have to borrow FRW 4,000 Million to fund an urgent working capital requirement for a period of 9 months.

Kabisa treasury has been advised that using a multilateral netting method as hedging will give the best immediate outcome.

The following cash flows are due in three months between Kabisa Co and three of its subsidiary companies. The subsidiary companies are Tamu Co, based in the Kenya, (currency KSH), Jinja Co, based in Uganda (currency USH) and Buju Co, based in Tanzania (currency TSH).

Owed by	**Owed to**	**Amount in Millions**
Kabisa Co	Tamu Co	KSH 8.3
Kabisa Co	Jinja Co	USH 4.5
Buju Co	Jinja Co	USH 9.2
Buju Co	Tamu Co	KSH 5.1
Jinja Co	Tamu Co	KSH 3.2
Jinja Co	Kabisa Co	FRW 6.8
Tamu Co	Buju Co	TSH 400
Tamu Co	Kabisa Co	FRW 7.2

Exchange rates are available to Kabisa Co

	USH/1FRW	**TSH/1FRW**	**KSH/1FRW**
Spot rate	2	15.8	0.12
3 Month forward	3	14.3	0.13

Country	**Interest rates**
	Deposits
Kenya	15%
Rwanda	8%

Required:

a) Using a tabular format, **present the effect of undertaking multilateral netting by Kabisa Co with its three subsidiary companies for the cash flows due in three months.** (12 Marks)

b) **Illustrate how Forward Rate Agreement (FRA) of 12.5% would be beneficial to Kabisa if at the time of borrowing, interest rates were 10 % and 14% give your answers in FRW.** (5 Marks)

c) **Briefly describe the steps involved If Kabisa were to use money market hedging with one of its subsidiaries** (no calculation required). (4 Marks)

d) Using interest rates provided, **estimate exchange rates between the two countries in two years' time.** (4 Marks)

(Total: 25 Marks)

Present value interest factor of an (ordinary) annuity of Frw1 per period at i% for n periods, PVIFA(i,n).																				
Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909	0.901	0.893	0.885	0.877	0.870	0.862	0.855	0.847	0.840	0.833
2	1.970	1.942	1.913	1.886	1.859	1.833	1.808	1.783	1.759	1.736	1.713	1.690	1.668	1.647	1.626	1.605	1.585	1.566	1.547	1.528
3	2.941	2.884	2.829	2.775	2.723	2.673	2.624	2.577	2.531	2.487	2.444	2.402	2.361	2.322	2.283	2.246	2.210	2.174	2.140	2.106
4	3.902	3.808	3.717	3.630	3.546	3.465	3.387	3.312	3.240	3.170	3.102	3.037	2.974	2.914	2.855	2.798	2.743	2.690	2.639	2.589
5	4.853	4.713	4.580	4.452	4.329	4.212	4.100	3.993	3.890	3.791	3.696	3.605	3.517	3.433	3.352	3.274	3.199	3.127	3.058	2.991
6	5.795	5.601	5.417	5.242	5.076	4.917	4.767	4.623	4.486	4.355	4.231	4.111	3.998	3.889	3.784	3.685	3.589	3.498	3.410	3.326
7	6.728	6.472	6.230	6.002	5.786	5.582	5.389	5.206	5.033	4.868	4.712	4.564	4.423	4.288	4.160	4.039	3.922	3.812	3.706	3.605
8	7.652	7.325	7.020	6.733	6.463	6.210	5.971	5.747	5.535	5.335	5.146	4.968	4.799	4.639	4.487	4.344	4.207	4.078	3.954	3.837
9	8.566	8.162	7.786	7.435	7.108	6.802	6.515	6.247	5.995	5.759	5.537	5.328	5.132	4.946	4.772	4.607	4.451	4.303	4.163	4.031
10	9.471	8.983	8.530	8.111	7.722	7.360	7.024	6.710	6.418	6.145	5.889	5.650	5.426	5.216	5.019	4.833	4.659	4.494	4.339	4.192
11	10.368	9.787	9.253	8.760	8.306	7.887	7.499	7.139	6.805	6.495	6.207	5.938	5.687	5.453	5.234	5.029	4.836	4.656	4.486	4.327
12	11.255	10.575	9.954	9.385	8.863	8.384	7.943	7.536	7.161	6.814	6.492	6.194	5.918	5.660	5.421	5.197	4.988	4.793	4.611	4.439
13	12.134	11.348	10.635	9.986	9.394	8.853	8.358	7.904	7.487	7.103	6.750	6.424	6.122	5.842	5.583	5.342	5.118	4.910	4.715	4.533
14	13.004	12.106	11.296	10.563	9.899	9.295	8.745	8.244	7.786	7.367	6.982	6.628	6.302	6.002	5.724	5.468	5.229	5.008	4.802	4.611
15	13.865	12.849	11.938	11.118	10.380	9.712	9.108	8.559	8.061	7.606	7.191	6.811	6.462	6.142	5.847	5.575	5.324	5.092	4.876	4.675
16	14.718	13.578	12.561	11.652	10.838	10.106	9.447	8.851	8.313	7.824	7.379	6.974	6.604	6.265	5.954	5.668	5.405	5.162	4.938	4.730
17	15.562	14.292	13.166	12.166	11.274	10.477	9.763	9.122	8.544	8.022	7.549	7.120	6.729	6.373	6.047	5.749	5.475	5.222	4.990	4.775
18	16.398	14.992	13.754	12.659	11.690	10.828	10.059	9.372	8.756	8.201	7.702	7.250	6.840	6.467	6.128	5.818	5.534	5.273	5.033	4.812
19	17.226	15.678	14.324	13.134	12.085	11.158	10.336	9.604	8.950	8.365	7.839	7.366	6.938	6.550	6.198	5.877	5.584	5.316	5.070	4.843
20	18.046	16.351	14.877	13.590	12.462	11.470	10.594	9.818	9.129	8.514	7.963	7.469	7.025	6.623	6.259	5.929	5.628	5.353	5.101	4.870
25	22.023	19.523	17.413	15.622	14.094	12.783	11.654	10.675	9.823	9.077	8.422	7.843	7.330	6.873	6.464	6.097	5.766	5.467	5.195	4.948
30	25.808	22.396	19.600	17.292	15.372	13.765	12.409	11.258	10.274	9.427	8.694	8.055	7.496	7.003	6.566	6.177	5.829	5.517	5.235	4.979
35	29.409	24.999	21.487	18.665	16.374	14.498	12.948	11.655	10.567	9.644	8.855	8.176	7.586	7.070	6.617	6.215	5.858	5.539	5.251	4.992
40	32.835	27.355	23.115	19.793	17.159	15.046	13.332	11.925	10.757	9.779	8.951	8.244	7.634	7.105	6.642	6.233	5.871	5.548	5.258	4.997
50	39.196	31.424	25.730	21.482	18.256	15.762	13.801	12.233	10.962	9.915	9.042	8.304	7.675	7.133	6.661	6.246	5.880	5.554	5.262	4.999

Present value interest factor of Frw1 per period at i% for n periods, PVIF(i,n).

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909	0.901	0.893	0.885	0.877	0.870	0.862	0.855	0.847	0.840	0.833
2	0.980	0.961	0.943	0.925	0.907	0.890	0.873	0.857	0.842	0.826	0.812	0.797	0.783	0.769	0.756	0.743	0.731	0.718	0.706	0.694
3	0.971	0.942	0.915	0.889	0.864	0.840	0.816	0.794	0.772	0.751	0.731	0.712	0.693	0.675	0.658	0.641	0.624	0.609	0.593	0.579
4	0.961	0.924	0.888	0.855	0.823	0.792	0.763	0.735	0.708	0.683	0.659	0.636	0.613	0.592	0.572	0.552	0.534	0.516	0.499	0.482
5	0.951	0.906	0.863	0.822	0.784	0.747	0.713	0.681	0.650	0.621	0.593	0.567	0.543	0.519	0.497	0.476	0.456	0.437	0.419	0.402
6	0.942	0.888	0.837	0.790	0.746	0.705	0.666	0.630	0.596	0.564	0.535	0.507	0.480	0.456	0.432	0.410	0.390	0.370	0.352	0.335
7	0.933	0.871	0.813	0.760	0.711	0.665	0.623	0.583	0.547	0.513	0.482	0.452	0.425	0.400	0.376	0.354	0.333	0.314	0.296	0.279
8	0.923	0.853	0.789	0.731	0.677	0.627	0.582	0.540	0.502	0.467	0.434	0.404	0.376	0.351	0.327	0.305	0.285	0.266	0.249	0.233
9	0.914	0.837	0.766	0.703	0.645	0.592	0.544	0.500	0.460	0.424	0.391	0.361	0.333	0.308	0.284	0.263	0.243	0.225	0.209	0.194
10	0.905	0.820	0.744	0.676	0.614	0.558	0.508	0.463	0.422	0.386	0.352	0.322	0.295	0.270	0.247	0.227	0.208	0.191	0.176	0.162
11	0.896	0.804	0.722	0.650	0.585	0.527	0.475	0.429	0.388	0.350	0.317	0.287	0.261	0.237	0.215	0.195	0.178	0.162	0.148	0.135
12	0.887	0.788	0.701	0.625	0.557	0.497	0.444	0.397	0.356	0.319	0.286	0.257	0.231	0.208	0.187	0.168	0.152	0.137	0.124	0.112
13	0.879	0.773	0.681	0.601	0.530	0.469	0.415	0.368	0.326	0.290	0.258	0.229	0.204	0.182	0.163	0.145	0.130	0.116	0.104	0.093
14	0.870	0.758	0.661	0.577	0.505	0.442	0.388	0.340	0.299	0.263	0.232	0.205	0.181	0.160	0.141	0.125	0.111	0.099	0.088	0.078
15	0.861	0.743	0.642	0.555	0.481	0.417	0.362	0.315	0.275	0.239	0.209	0.183	0.160	0.140	0.123	0.108	0.095	0.084	0.074	0.065
16	0.853	0.728	0.623	0.534	0.458	0.394	0.339	0.292	0.252	0.218	0.188	0.163	0.141	0.123	0.107	0.093	0.081	0.071	0.062	0.054
17	0.844	0.714	0.605	0.513	0.436	0.371	0.317	0.270	0.231	0.198	0.170	0.146	0.125	0.108	0.093	0.080	0.069	0.060	0.052	0.045
18	0.836	0.700	0.587	0.494	0.416	0.350	0.296	0.250	0.212	0.180	0.153	0.130	0.111	0.095	0.081	0.069	0.059	0.051	0.044	0.038
19	0.828	0.686	0.570	0.475	0.396	0.331	0.277	0.232	0.194	0.164	0.138	0.116	0.098	0.083	0.070	0.060	0.051	0.043	0.037	0.031
20	0.820	0.673	0.554	0.456	0.377	0.312	0.258	0.215	0.178	0.149	0.124	0.104	0.087	0.073	0.061	0.051	0.043	0.037	0.031	0.026
25	0.780	0.610	0.478	0.375	0.295	0.233	0.184	0.146	0.116	0.092	0.074	0.059	0.047	0.038	0.030	0.024	0.020	0.016	0.013	0.010
30	0.742	0.552	0.412	0.308	0.231	0.174	0.131	0.099	0.075	0.057	0.044	0.033	0.026	0.020	0.015	0.012	0.009	0.007	0.005	0.004
35	0.706	0.500	0.355	0.253	0.181	0.130	0.094	0.068	0.049	0.036	0.026	0.019	0.014	0.010	0.008	0.006	0.004	0.003	0.002	0.002
40	0.672	0.453	0.307	0.208	0.142	0.097	0.067	0.046	0.032	0.022	0.015	0.011	0.008	0.005	0.004	0.003	0.002	0.001	0.001	0.001
50	0.608	0.372	0.228	0.141	0.087	0.054	0.034	0.021	0.013	0.009	0.005	0.003	0.002	0.001	0.001	0.001	0.000	0.000	0.000	0.000