
CERTIFIED PUBLIC ACCOUNTANT

ADVANCED LEVEL 2 EXAMINATIONS

A2.1: STRATEGIC CORPORATE FINANCE

DATE: FRIDAY, 27 AUGUST 2021

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.

SECTION A

QUESTION ONE

Ishimwe, a former civil servant was laid off from his job as a result of restructuring in the institution he was serving some years ago. He made a decision to invest all his benefits in the shares of LMN Ltd, a company quoted on the stock exchange. The dividend payments from this investment make up a significant position of Mr. Ishimwe's income. He was so surprised to learn that LMN Ltd dropped its year 2020 dividend to Frw 1.25 per share from Frw1.75 per share which it had paid in the previous two years. Mr. Ishimwe has approached you for advice and you have gathered the information given below regarding the financial condition of LMN Ltd. and the finance sector as a whole.

LMN Ltd.'s Financial Position as at 31 December

	2018	2019	2020
	Frw."000"	Frw."000"	Frw."000"
Non-current assets			
Land and buildings	25,230	27,600	25,000
Machinery	33,800	36,400	30,600
Other non-current assets	<u>14,920</u>	<u>18,200</u>	<u>16,400</u>
Total Non-current assets	73,950	82,200	72,000
Cash	15,250	14,400	8,000
Accounts receivable	80,320	87,800	134,400
Inventory	98,600	158,800	254,000
Total current assets	<u>194,170</u>	<u>261,000</u>	<u>396,400</u>
Total assets	<u>268,120</u>	<u>343,200</u>	<u>468,400</u>
Current liabilities			
Accounts payable	34,220	73,760	135,848
Accruals	15,700	34,000	67,000
Total current liabilities	49,920	107,760	202,848
Long-term debt	60,850	60,850	81,720
Ordinary share capital	115,000	115,000	115,000
Retained earnings	42,350	59,590	68,832
	268,120	343,200	468,400

LMN Ltd.'s statement of profit and loss and other comprehensive income for the year ending 31 December

	2018	2019	2020
	Frw."000"	Frw."000"	Frw."000"
Sales (all on credit)	827,000	858,000	890,000
Cost of sales	(661,600)	(710,000)	(712,000)
Gross profit	165,400	148,000	178,000

General administrative and selling expenses	(63,600)	(47,264)	(51,200)
Other operating expenses	(25,400)	(31,800)	(38,200)
Earnings before interest and tax (EBIT)	76,400	68,936	88,600
Interest expense	(12,800)	(26,800)	(63,600)
Net income before taxes	63,600	42,136	25,000
Taxes	(19080)	(126401)	(7500)
Net income	44520	29495	17500

Number of shares issued	4,600,000	4,600,000	4,600,000
Per share data:			
Earnings per share (EPS)	Frw. 8.30	Frw. 5.50	Frw. 3.26
Dividend per share	Frw. 1.75	Frw. 1.75	Frw. 1.25
Market price (average)	Frw.48.90	Frw.25.50	Frw.13.25

Industry Financial Ratios (2020)

Quick ratio	1.0:1
Current ratio	2.7:1
Inventory turnover	7 times
Average collection period	32 days
Fixed asset turnover	13.0 times
Total assets turnover	2.6 times
Net income to net worth	1.8%
Net profit margin on sales	3.5%
Price-Earnings (P/E) ratio	6
Debt/Equity ratio	50%

Notes:

1. Industry ratios have been roughly constant for the past four years.
2. Inventory turnover, total assets turnover and fixed assets turnover are based on the year-end balance sheet figures.
3. Number of days used were 360 days in computation of industry ratios.

MUHIRE CANE MILLERS LTD (MCM Ltd)

MCM Ltd. is a company engaged in the pressing and processing of sugar cane juice into refined sugar. For some time, the company has been considering the replacement of its three existing machines.

The production manager has learnt from a professional newsletter on sugar of the availability of a new and larger machine whose capacity is such that it can produce the same level of output per annum currently produced by the three machines. Furthermore, the new machine would cut down on the wastage of juice during processing. If the old machines are not replaced, an extraordinary overhaul would be immediately necessary in order to maintain them in operational condition. This overhaul would cost Frw 5,000,000 in total.

The following additional information is available:

1. The old machines were purchased 5 years ago and are being depreciated over 15 years on a straight-line basis, with an estimated final scrap value of Frw 600,000 each. The current second-hand market value of each of the machines is Frw 1,000,000.
2. The annual operating costs for each of the existing machines are:

	Frw	Frw
Raw sugar cane		60,000,000
Labor (one operator)		1,350,000
Variable costs		925,000
Maintenance (excluding overhaul expenditure)		2,000,000
Fixed costs:		
Depreciation	75,000	
Fixed factory overhead costs	<u>2,700,000</u>	2,775,000

3. The new machine has an estimated life of ten years and its initial cost will comprise:

	Frw
Purchase price (value in 10 years Frw. 4,500,000)	87,000,000
Labor (one operator)	<u>13,000,000</u>
	<u>100,000,000</u>

4. The estimated annual operating costs, if all the current output is processed on the new machine are:

	Frw	Frw
Raw sugar cane		162,000,000
Labor (one operator)		3,900,000
Variable costs		2,275,000
Maintenance		4,500,000
Fixed costs:		
Depreciation	9,550,000	
Fixed factory overhead costs	<u>7,800,000</u>	17,350,000

5. The company's cost of capital is 10 %

6. For a project to be implemented, it must pass both the profitability test, as indicated by its internal rate of return, and the financial viability test, in that it must pay back within a maximum period of five years.

NB: Ignore taxation

MUGISHA COMPANY LTD (MC Ltd)

MC Ltd. is a company based in Rwanda that exports to Burundi. The company has exported Frw 412,000 worth of goods to its Burundi customers. The money is received in four months. The Financial Manager of MC Ltd is concerned about the volatility of interest rates. He

would like to use various alternatives to hedge against foreign exchange risk. The following money market rates are prevailing in the market:

Currency	Deposit	Loan
Bif	7%	9%
Frw	5%	8%

Exchange rates in London are as follows:

Bif/Frw	Spot	1.5865 – 1.5905
4 months	Forward	1.6100 – 1.6140

Required:

As a finance consultant, you have been approached by the LMN management and asked to prepare a detailed report on the financial condition of LMN Ltd and the financial sector as a whole:

(a) **Compute the financial ratios for LMN Ltd for the past three years corresponding to industry ratios presented above.** (20 Marks)

(b) **Analytically summarize the ratios computed above based on:**

(i) **Trends in the firm's ratios** (6 Marks)

(ii) **Comparison with industry averages.** (3 Marks)

(The summary should focus on the liquidity, profitability and turnover ratios).

As a finance specialist, MCM Ltd relies on your expert advice and has approached you on matters of interpretation and application.

(c) (i) **Calculate the Internal Rate of return (IRR) of the proposed replacement decision using discount rates of 10% and 20%** (12 Marks)

(ii) **Advise the management on the proposal based on the answer you obtained in(c)(i) above** (1 Mark)

(d) Briefly explain to the Financial Manager of MC Ltd:

i) **How Mugisha Company ltd can hedge itself against exchange risk by using a money market hedge** (5 Marks)

ii) **Whether it would have been better to take a forward cover instead of a money market hedge.** (3 Marks)

(Total :50 Marks)

SECTION B

QUESTION TWO

Duterimbere Ltd is a company established in Rwanda producing a range of fast-moving consumer goods to medium enterprises. The Corporate Finance Director of Duterimbere Ltd. wishes to find the company's optimal capital structure. The company's ungeared equity beta (asset beta) is 0.85. The risk-free rate is 6% per annum and the market return is 14% per annum. Corporate taxation is at the rate of 30% per year.

The cost of debt varies according to the level of gearing of the company as follows:

Percentage debt	Pretax cost of debt
10	6.5%
20	7.1%
30	7.8%
40	8.5%
50	10%
60	12%
70	15%

Required:

- (a) **Estimate the company's optimal weighted average cost of capital and optimal capital structure from the above information.** (12 Marks)
- (b) **Discuss the advantages and limitations of weighted average cost of capital (WACC) as a discount rate for use in the appraisal of capital investment projects** (6 Marks)

Muhoza Ltd. is 2 years old. The annual turnover and annual profit of the business are Frw. 250,000 and Frw. 19,000 respectively. Muhoza operates with a bank overdraft of up to Frw. 25,000. The firm's working capital is sufficient to steadily expand the business. Then CEO of Muhoza got a contract to supply interior design products to Dukore Furniture Ltd. The order is Frw. 40,000 a month for two years. Payment would be made 90 days after delivery. The first month business runs smoothly. The suppliers started delivering as agreed. By the fourth month Muhoza Ltd could not pay all the suppliers on time. Some of them stopped delivering and were threatening to take action. The bank overdrafts had increased and Muhoza's bank refused to pay cheques.

Required:

Given the concerns expressed in the business mentioned above, the CEO of Muhoza Ltd has requested you to prepare a report that:

- (c) **Explains the symptoms, causes, and remedies that show the company that is overtrading.** (7 Marks)

(Total 25 : Marks)

QUESTION THREE

Mahoro Ltd has an investment capital worth Frw. 2,000,000. The company wishes to diversify its business by investing in two securities, X and Y in the following proportions; Frw. 400,000 in security X and Frw. 1,600,000 in security Y.

The returns on these two securities depend on the state of the economy as shown below:

State of Economy	Probability	Returns on Security X	Returns on Security Y
Boom	0.4	18%	24%
Normal	0.5	14%	22%
Recession	0.1	12%	21%

Required:

- a) Evaluate the proposed investment using the:
 - i) **Expected portfolio return** (3 Marks)
 - ii) **Correlation coefficient between security X and Security Y** (8 Marks)
 - iii) **Portfolio risk of the securities** (2 Marks)
 - iv) **Reduction in risk due to portfolio diversification** (1 Mark)
 - b) “The CAPM, as widely known, is a cornerstone of modern financial market analysis, studied like a rosary by analysts and executives at business school. Most financial directors use it to assess everything from the viability of a new project to their cost of capital. Most stock market analysts consider it an essential tool” Harry Markowitz
 - c) **Discuss the applications and limitations of Capital Asset Pricing Model (CAPM) as an investment appraisal technique.** (8 Marks)
 - d) **Explain the advantages of integration of international financial markets.** (3 Marks)
- (Total : 25 Marks)**

QUESTION FOUR

AB Company ltd involved in the manufacture of soft drinks and has been in this business for more than five years. GTC consult is one of the leading consultant companies in Rwanda with strong expertise in acquisitions. GTC’s extensive market knowledge and commercial expertise offers them a platform to be conducted by various clients across the country for advisory services. AB Company is considering the hire of a consultant to help acquire YZ Ltd. It is in this regard that that AB Company consulted GTC on how to acquire YZ ltd. A deal was concluded about acquiring YZ Ltd.

All the Information about the two companies is provided below:

	AB Ltd	YZ Ltd
Expected earnings per share	Frw 120	Frw 50
Expected dividend per share	Frw 80	Frw 20
Number of shares	200,000	120,000
Current market price Current market price per share	Frw 1,800	Frw 500

The estimates about YZ Ltd indicate expected steady growth of earnings and dividend to the tune of 6% per annum. However, under the new management the growth rate is likely to go up to 8% per annum without additional investment.

Required:

a) Calculate the effects of acquisition on:

- i. **The cost of acquisition for AB ltd if Frw. 600 is paid for each share of YZ Ltd.**
(1 Mark)
- ii. **The net cost of acquisition if the agreed exchange ratio is one share of AB ltd for every three shares of YZ ltd, in lieu of cash acquisition as per (i) above** (7 Marks)
- iii. **The gain from acquisition of YZ Ltd by AB ltd** (3 Marks)
- iv. **If the expected growth rate continues to be 6% per annum, how will the new share price as well as cost be different?** (3 Marks)

b) **Discuss the advantages and disadvantages of Management Buy In as applied in Mergers and Acquisition** (7 Marks)

c) **Write brief notes to your Supervisor on the differences between international money market and capital market** (4 Marks)

(Total : 25 Marks)

End of question paper

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

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