CERTIFIED PUBLIC ACCOUNTANT

INTERMEDIATE LEVEL EXAMINATIONS

I1.1: MANAGERIAL FINANCE

DATE: THURSDAY 28, AUGUST 2025

INSTRUCTIONS:

1. Time Allowed: **3hours 15minutes** (15minutes 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.
7. The question paper should not be taken out of the examination room.

SECTION A

QUESTION ONE

GASHUMBA Ltd, a privately owned company involves in food processing by adding value and long-term conservation, has made a good profit in the past five year and is considering to expand its production to cover a big market share. The Directors are considering raising more funds to finance the expansion of its plants and increase the production capacity.
During the Board meeting, one of the directors mentioned about listing on Rwanda stock exchange as a strategy to raise more equity capital to support an expansion project and provide a stable dividend to shareholders as well as attracting potential investors. The directors are not sure of how much the value per share will be on the market.

The following information was extracted from the books of account of GASHUMBA Ltd

Statement of financial position as at 31 December 2024

	FRW '000'
Non-current assets	
Property Plant and Equipment	400,000
Goodwill	20,000
Current Assets	
Inventory	100,000
Account Receivables	100,000
Cash and Cash Equivalents	40,000
Total Assets	**660,000**
Equity and Liabilities	
Ordinary share FRW 100	380,000
Reserves	40,000
Non-current Liabilities	
10% Debenture	100,000
Current Liabilities	
Account Payables	108,000
Accrued expenses	32,000
Total Equity and Liabilities	**660,000**

Statement of Profit or Loss for the year ended 31 December 2024

	FRW '000'
Sales	800,000
Cost of sales	(400,000)
Gross profit	**400,000**
Administrative Expenses	(145,000)
Selling and distribution expenses	(80,000)
Profit Before Interest and Tax	**175,000**

	FRW '000'
Finance costs	(10,000)
Profit Before Tax	**165,000**
Tax @ 30%	(49,500)
Profit After Tax	**115,500**

Additional Information:

1. One of the Debtors who owes FRW 10 million declared bankrupt.
2. Goodwill was internally generated.
3. Property, plant and equipment were valued at FRW 450 million by an independent valuer hired by the company to determine the actual value of the company's assets before going public.
4. Assume the average price earnings ratio of a similar quoted Company in the same industry as GASHUMBA Ltd is 8.
5. The following are historical dividends paid from 2020 to 2024, and dividends are expected to grow at a rate equivalent to the average growth in the last 5 years 'dividends.

Year	2020	2021	2022	2023	2024
Dividend Per share (FRW)	10	10	12	13	15

6. Cost of equity capital is 20%

Required:

a) Determine the value of the share of GASHUMBA Ltd using:

i) Asset based model (4 Marks)

ii) Price Earnings ratio (3 Marks)

iii) Dividend valuation model (3 Marks)

b) **Briefly discuss three dividend polices to the Board Members of GASHUMBA Ltd to attract potential investors**. (6 Marks)

c) Compute and interpret the following ratios of GASHUMBA Ltd for the year ended 31 December 2024.

i) Dividend Cover ratio (2 Marks)

ii) Dividend Payout ratio (2 Marks)

(Total: 20 Marks)

QUESTION TWO

GASHUGI Investment Company located in Kigali special economic zone, involves in the production of ceramic materials, such as tiles used in the finishing of different houses in Rwanda. Over the past two years, it has spent FRW 5,000,000 in research and development of two potential projects. One is making Metal Roofing that can be used in the construction of affordable houses, a project launched by Rwanda Housing Authority to address the housing Units Demand in Kigali. Another project is investing into a new business area of modern agriculture of rice.

Project A

This project will require an initial investment by acquiring new machine costing FRW 250 million with an expected useful life of 5 Years, and at the end will be sold at FRW 25 million.

The following are the expected annual demands in terms of quantities:

Year	**1**	**2**	**3**	**4**	**5**
Annual Demand (m^2)	19,000	23,000	35,000	40,000	51,000

The Selling price for one square meter of Metal Roofing is expected to be FRW 5,000 in year one with expected annual inflation rate of 3% per year in subsequent years and the variable cost of production is expected to be FRW 1,500 per square meter of Metal Roofing in year one with expected annual inflation rate of 4% in subsequent years.
Working capital of FRW 50 million will be required at the start of the project with an expected annual increase of 5% per annum in subsequent years.

The company can be able to claim capital allowance on a 25% reducing balance.

Project B

This project is a diversification into a new business area of modern agriculture of rice in Rugeramigozi valley, where an investment of FRW 250 million for acquiring tractors to be used. **Net** cash benefits of FRW 80 million are expected in year one with subsequent annual increase of 9% in FOUR years.

GASHUGI Investment Company has a real cost of capital of 5.7% and pays tax at 30% one year in arrears. The general inflation rate is 6%.

Current operation
GASHUGI Investment Company expects to replace the current old machine used in the manufacturing of tiles with an identical machine. The Purchase cost was FRW 25 million and the machine has the following running costs and resale values over its three-year useful life in nominal terms.

	Year 1 (FRW)	**Year 2 (FRW)**	**Year 3 (FRW)**
Running cost	3,500,000	8,000,000	12,500,000
Resale value	7,500,000	5,000000	2,500,000

Required:

a) Using Net present value analysis, **analyze whether the proposed investments in Two Projects are viable and comment on the results.** (16 Marks)
b) If GASHUGI investment company has a limited capital of FRW 400 million, **recommend the project that can be undertaken by using the profitability index:**
i) Assume that each project is divisible. (3 Marks)
ii) Assume that none of the projects are divisible. (1 Mark)

c) By using the cost of capital computed above, **you are required to assess how frequently this machine should be replaced.** (5 Marks)

(Total: 25 Marks)

QUESTION THREE

MG Events Ltd is a company incorporated in Rwanda in 2020. They have expertise in event Planning and wedding management, with the motto of "having unforgettable events with us ". the company started to get very well known in Rwanda and it is competing with other event management companies.

The company is growing fast and exponentially. Recently, it has been registered on Rwanda Stock Exchange as a way to boost its capital to expand to the international market, where they invite different investors to provide funds through either Venture capital or by subscription of shares through Initial Public Offering (IPO). They believe that, regarding their financial performance, it would be a potential investment opportunity.

Mr. GAHEZA, a finance director of MG events Ltd, took out FRW 15 million for his personal use and reported it as expenses related to a recent seminar that occurred and forged the documents to record this transaction as genuine in the books of account. This was found in a recent audit assignment by an external auditor hired by shareholders to look for their compliance with the rules of the finance unit. During the audit, they also found out that the chief operation officer takes the initiative to expand into new, short-term, high-risk markets. However, this will expose an unjustified risk to shareholders, who are most concerned with long-term growth

Required:

a) Discuss FIVE benefits of investing through the capital market Authority in Rwanda. (5 Marks)

b) Enumerate and explain FIVE stages of investment by venture capitalists. (5 Marks)

c) With respect to the agency problems between MG Events Ltd Management and its shareholders, **elaborate FIVE potential causes and advise how this can be resolved.** (5 Marks)

(Total: 15 Marks)

SECTION B

QUESTION FOUR

UBUMWE Ltd wants to make a new investment in the tourism industry. The funds required to finance new project have to be raised in proportion to the current capital structure of the company. The finance manager wants to evaluate if the new project is viable, but is not aware of the required rate of return to be used for this project.

The following is an extracted statement of financial position of UBUMWE Ltd at 31 December 2024

Details	FRW
Non-Current asset	25,350,000
Current asset	9,750,000
Total Asset	**35,100,000**
Ordinary Share Capital @ FRW 100	13,000,000
Reserves	3,700,000
15% preference share @ FRW 100	9,500,000
	26,200,000
Non-Current Liabilities	
10% Loan Notes @ FRW 100	7,000,000
Current Liabilities	1,900,000
Total Liabilities	**8,900,000**
Total Equity and Liabilities	**35,100,000**

The ordinary share is currently quoted at FRW 300 per share ex dividend. The dividend of FRW 50 per share is payable during next year. The expected growth rate of the dividend is 6% per annum. The preference shares which are irredeemable are quoted at FRW 130 and the dividend has recently been paid. 10% Loan notes are currently quoted at FRW 90 and is redeemable at premium of 13% after 5 years. UBUMWE Ltd pay corporate income tax at 30%.

Required:

a) Using data provided above, **Calculate:**

i) The cost of Equity (2 Marks)

ii) The cost of preference (2 Marks)

iii) The cost of redeemable loan notes (6 Marks)

iv) The company's weighted average cost of capital (WACC), using the respective market values as factors to be used in evaluating this project. (4 Marks)

b) Discuss the circumstances under which the current weighted average cost of capital can be used in investment appraisal. (6 Marks)

(Total: 20 Marks)

QUESTION FIVE

KTM Rwanda is a company incorporated in Rwanda under the license to construct and sell residential properties and plots on behalf of its clients around Kigali and nearby cities. It has been in business for a certain period of time and the finance department wants to prepare a cash flow forecast for the first four months of 2025 for better management of its cash flows and to avoid any liquidity problem.

The expected sales of residential properties are as follows:

	Nov-2024	Dec-2024	January 2025	February 2025	March 2025	April 2025
Houses sold	8	6	10	12	7	5

The terms of sales are as follows:

1. The average selling price per house is FRW 35 million
2. 75% of sales are for cash
3. 25% of sales are on credit
4. Credit sales are collected in two months of sales
5. The construction material cost is 40% of total sales in each month, all are on credit and are paid one month later.
6. Salaries of employees of FRW 1,500,000 per house are paid every month
7. The insurance cost of FRW 500,000 per house is paid each month
8. Installment Taxes of FRW 25,000,000 will be paid in March and June 2025
9. A new Vehicle used for site visits will be bought in January 2025 and it will cost FRW 55,000,000 which is expected to be paid in April 2025. The old vehicle will be sold for FRW 15,000,000. The buyer undertaking to pay in February 2025.
10. There is no opening balance at start of January 2025

KTM Rwanda company purchases construction material from the East African region with an annual demand of 10,000 sacks of cement per annum used in making concrete. The cost of placing an order from the manufacturer is FRW 100,000. The cost of a sack of cement to manufacturers was FRW 10,000 and its cost 5% of cost of sacks for keeping in the warehouse per annum. The manufacturer has offered a discount of 5% to KTM Rwanda for any orders of 3,000 sacks of cement or more at once.

Required:

a) Prepare KTM Rwanda Cash flow forecast for the period of January to April 2025 (10 Marks)

b) Based on the data provided above:

i) Compute the quantity to be ordered to minimize inventory cost. (2 Marks)

ii) Determine the total holding cost and ordering cost if KTM Rwanda order stock level that minimize the Total cost. (2 Marks)

iii) Determine the total inventory cost. (1 Mark)

iv) **Explain whether or not the company should take up the discount.** (2 Marks)

c) **Define the term overtrading and its FOUR symptoms.** (3 Marks)

(Total: 20 Marks)

QUESTION SIX

Mr NTWALI is an investment manager in ITERAMBERE Ltd, a company involved in the management of investor funds. Recently, they raised FRW 500 million to be invested in two assets in order to diversify the risks and maximize returns to the investors.

Before investing, he wants to determine the risk and return from the two investments

Investment in asset A: FRW 300 million

Investment in asset B: FRW 200 million

Return of asset A (%)	**Return of asset B (%)**	**Probability (%)**
10	9	35
18	12	45
15	20	20

The current required rate of return is 10%

Required:

a) From the information above, **show which asset should ITERAMBERE Ltd invest in based on the expected return and risk of each investment.** (7 Marks)

b) Compute the Expected Portfolio Return if two assets are combined in a portfolio. (2 Marks)

c) Analyze whether these two assets are correlated if combined in the same portfolio. (4 Marks)

d) Calculate the Portfolio risk and comment on your answer. (2 Marks)

e) Differentiate between Systematic and Unsystematic risk in relation to Portfolio theory. (2 Marks)

f) Enumerate at least SIX assumptions of the Capital Asset Pricing Model under portfolio analysis (3 Marks)

(Total: 20 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

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