



**CERTIFIED PUBLIC ACCOUNTANT
INTERMEDIATE LEVEL EXAMINATIONS**

I1.1: MANAGERIAL FINANCE

DATE: THURSDAY 27, FEBRUARY 2025

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. Show all your workings where necessary
6. Marks allocated to each question are shown at the end of the question.

SECTION A

QUESTION ONE

a) Zipline Limited is a start-up company in technology sector and looking to expand its operations by developing new software product. The company has two options: Obtain loans from commercial bank or raise equity by selling shares. The founder has decided to raise FRW 2 billion by selling ordinary shares and utilises FRW100 million from retained earnings, this decision means the ownership is diluted among new shareholders but the company is avoiding taking on debt. Over the next year, the company will be using equity to expand its product line resulting to increased revenue and market share.

Required:

Explain two advantages and three disadvantages of using equity as a source of finance for the company. (5 Marks)

b) Silverback Cargo Freights Ltd is a company based at Remera offering airline transport services in Rwanda. The company is evaluating a cheaper source of finance to fund its operation. The credit manager has identified two modes of finance. Option A is equity finance and option B is 10% debt finance.

The following information relates to the two options and operational results

Details	FRW” Million”
Capital required from either source	100
Operating profit	400
Operating cost	10
Taxe rate	30%

Required:

Using the relevant calculations, **advise Silverback Cargo Fright Ltd on the best option to finance its operation** (4 Marks)

c) An investment company based in Kigali is evaluating an investment opportunity requiring an initial capital outlay of FRW 100 million for a period of five years. The company’s financial analyst has identified two potential investment options and has gathered the following information:

Option I:

The company can invest in a debenture issued by Rwanda Housing Corporation, which offers an annual interest rate of 10%, compounded quarterly.

Option II:

The company can alternatively invest in securities of Old Mutual Fund, which provide an annual return of 12%, compounded semi-annually.

Required:

Advise the investment company on the most profitable option to undertake by using the future value at the end of five years and discuss two other considerations beyond the future value. (6 Marks)

d) SOLEKTRA Rwanda Ltd a company specializing in renewable energy solution, recently completed a successful issue of equity financing through new shares attracting new shareholders.

Discuss five compositions of shareholders that SOLEKTRA will attract in its issuing new shares (5 Marks)

(Total: 20 Marks)

QUESTION TWO

a) Kigali Car Rental Ltd (KCR) is a car rental company that started its operations in 2018, it has recorded a good performance and it is well known in car rental services. Among car rental services offered to a wide range of clients is “Self Drive Service (SDS)” where a given customer rent a car with the company and drive him/herself.

During the year ended 2023, KCR Ltd’s management presented to the board of directors that running costs continue to increase resulting from vehicle repair cost and vehicle service cost as vehicles operating in SDS presented a lot of defects and car mileage increase and caused changing oil of the vehicle engine which is also costly. The Board of Directors assigned tasks to the management to go and assess the option of vehicle (assets) replacement policy to be presented to the next board meeting for approval.

Cars operating under SDS has an estimated life of five years and running costs as well as the resale value are estimated as follow for a single car:

Details	Year1	Year2	Year3	Year4	Year5
Running Costs	15,000,000	20,000,000	25,000,000	30,000,000	35,000,000
Resale Value	35,000,000	32,000,000	27,000,000	22,000,000	18,000,000

Vehicle costs FRW50,000,000 and the KCR Ltd’s cost of capital is 10%.

Required:

- i) **What is equivalent annual cost?** (2 Marks)
- ii) **With proper calculations, prepare a summary presentation to the KCR Ltd’s Board of Directors for approval which indicate how frequently vehicle operating in SDS should be replaced.** (13 Marks)

- b) **Briefly discuss five factors influencing working capital management.** (10 Marks)
(Total: 25 Marks)

QUESTION THREE

Rwanda Food Manufacturing Ltd (RFM), is one of the Rwanda's largest food manufacturing companies located in the Prime Economic Zone and listed on the Rwanda Stock Exchange (RSE), the Chief Finance Officer (CFO), Murenzi, evaluating an investment proposal for a new product named Packed Fast Food (PFF). The packaging materials for PFF are environmentally friendly, avoiding the use of plastics. Customers can purchase PFF, heat it for 2 minutes, and consume it, thereby saving on home cooking costs. This product has shown promising results in recent test marketing trials conducted by RFM Ltd's research and development department. PFF will be produced using a fully automated process, necessitating significant investment in IT equipment. The following details pertaining to this investment proposal have now been compiled:

1. Investment in new equipment will require FRW 1,100,000,000
2. Selling price in year 1 is FRW 8,000 per unit of PFF and going forward is expected to be increased by an inflation rate of 3% per year.
3. Variable operating costs in year one is FRW 3,000 per unit of PFF and going forward is expected to increase due to inflation by 4%.
4. Fixed operating costs in year one is FRW 2,937,500 and because of inflation, it will increase in line with operating cost inflation rate.

The research and development department has prepared the following demand forecast as a result of its test marketing trials. The forecast reflects expected technological change and its effect on the anticipated life-cycle of Product PFF.

Year	1	2	3	8
Demand (units)	60,000	70,000	120,000	45,000

It is expected that all units of Product PFF produced will be sold, in line with the company's policy of keeping no inventory of finished goods. No terminal value or machinery scrap value is expected at the end of four years when production of Product PFF is planned to end. During CFO's investment appraisal of this product, company's cost of capital is at 12% and targeted return on capital employed is 30% per year. This CFO's assessment ignored tax.

Required:

- a) As a CPA student, you have been tasked as CFO to advise whether this project will be undertaken or not using Net Present Value (NPV) (10 Marks)
- b) Calculate Internal Rate of Return for this PFF project (3 Marks)
- c) Calculate the return on capital employed (Accounting Rate of Return) (2 Marks)

(Total: 15 Marks)

SECTION B

QUESTION FOUR

Gasabo Printing Services Ltd (GPS) is a company registered with Rwanda Development Board (RDB) since 2007. It has different business lines and the most profitable and well known are Bill Board Design and Printing Services, Printing and photocopy machine rent to both government and private companies. GPS Ltd is stable and has never paid dividends since COVID 19 pandemic ended after resolution from shareholders not to distribute dividend during COVID 19 pandemic. During the Annual General Meeting (AGM) of the shareholders in 2023, GPS Ltd's Chief Executive Officer (CEO) SEKAMANA presented to the shareholders that the performance of the company after Covid-19 pandemic, was excellent so that the company is expecting to pay a dividend to its shareholders. Before Covid-19 company paid FRW 3,000,000. CEO informed shareholders that dividends are expected to grow at a constant rate of 5% per year. The required rate of return for investors holding GPS Ltd's stock is 10%.

Below is a summary extract of the financial statements audited and certified for the year ended 31st December 2023 presented to the AGM:

Gasabo Printing Service Ltd (GPS)

Statement of Profit/Loss and other Comprehensive income for the year ended 31st December 2023

Details	31-Dec-23	31-Dec-22		
	FRW"000	FRW"000	Movement	% Movement
Revenue	12,867,500	9,987,315	2,880,185	29%
Direct costs	(4,167,835)	(3,121,600)	(1,046,235)	34%
Gross profit	8,699,665	6,865,715	1,833,950	1
Employment costs	(1,257,300)	(1,155,760)	(101,540)	9%
Administrative expenses	(862,800)	(931,400)	68,600	-7%
Other operating costs				
EBIT	6,579,565	4,778,555	1,801,010	38%
Finance costs	(517,300)	(538,700)	21,400	-4%
EBT	6,062,265	4,239,855	1,822,410	43%
Tax @30%	(1,818,680)	(1,271,957)	(546,723)	43%
Net Profit for the year	4,243,586	2,967,899	1,275,687	43%

Gasabo Printing Service Ltd (GPS)

Statement of financial position as at 31st December 2023

Details	31-Dec-23	31-Dec-22		%
	FRW''000	FRW''000	Movement	Movement
Assets				
Non-current assets				
PPE	25,763,900	22,859,760	2,904,140	13%
Total non-current assets	25,763,900	22,859,760	2,904,140	13%
Current assets				
Receivables	2,523,675	1,987,465	536,210	27%
Cash and cash equivalent	6,527,400	6,124,560	402,840	7%
Total current assets	9,051,075	8,112,025	939,050	12%
Total assets	34,814,975	30,971,785	3,843,190	12%
Equity and liabilities				
Equity				
500 Ordinary shares of FRW 20,000,000 each	10,000,000	10,000,000	-	0%
Reserves	3,500,600	2,127,000	1,373,600	65%
Retained earnings	8,771,166	4,527,580	4,243,586	94%
Total equity	22,271,766	16,654,580	5,617,186	34%
Liabilities				
Non-current liabilities				
Shareholder's loan	2,000,000	4,500,000	(2,500,000)	-56%
Bank loan	1,759,300	2,958,460	(1,199,160)	-41%
Total non-current liabilities	3,759,300	7,458,460	(3,699,160)	-50%
Current liabilities				
Supplier payables	6,965,230	5,586,789	1,378,442	25%
Tax payables	1,818,680	1,271,957	546,723	43%
Total current liabilities	8,783,910	6,858,745	1,925,165	28%
Total liabilities	12,543,210	14,317,205	(1,773,996)	-12%
Total equity and liabilities	34,814,975	30,971,785	3,843,190	12%

Required:

- a) Calculate the current share price of GPS Ltd using the dividend. (5 Marks)

b) With appropriate calculation, **interpret the following Ratios**

- i) **Dividend Per Share (DPS)** (1.5 Marks)
- ii) **Dividend Yield (DY)** (1.5 Marks)
- iii) **Earnings Per Share (EPS)** (1.5 Marks)
- iv) **Dividend Cover (DC)** (1.5 Marks)

c) **Describe at least 2 forms of dividends** (4 Marks)

d) Another business line of GPS Ltd is cash management business and one of its strategic operations involves balancing the costs associated with holding cash and the costs of converting Government bonds into cash. During the financial year ended 31st December 2023, the GPS Ltd has an average cash balance requirement of FRW 200,000 per month for its operations. The cost of each cash withdrawal or conversion is FRW 50, and GPS Ltd earns an annual interest rate of 13% on government bond issued by National Bank of Rwanda (BNR).

Required:

Calculate the optimal cash balance of GPS Ltd using Miller - Orr Model. (5 Marks)
(Total: 20 Marks)

QUESTION FIVE

a) Companies and individuals rely on various sources of funds to finance their operations and investments. It is argued that, there are quick and cheaper source finance in attaining the company's success.

Required:

Discuss five advantages of using venture capital as a source of finance (10 Marks)

b) Interest rates are expected to rise, and major investors in Rwamagana Ltd. the company where you work are asking for larger dividend payments. Reviewing Rwamagana Ltd.'s cost of capital is asked by your chief finance officer, who is thinking of suggesting to the board of directors that the firm restructure its capital structure.

Optimal capital Structure	FRW" Million"
Ordinary shares (par value FRW 100)	2,500
Retained earnings	1,250
15% preference shares (par value FRW 80)	800
8%Bank loans	400
14% irredeemable debentures (par value 60)	600
Total equity and debt	5,550

Additional information:

1. Rwamagana Ltd anticipates paying dividends of FRW 12.75 per share this year, with a 2.5% annual growth rate.
2. The market value of ordinary shares is FRW 120 per share, preferences shares are trading at FRW 80 and 14% irredeemable debentures are sold at FRW 70 each
3. return on the market is 12%.
4. The Government Treasury bond issued by the National bank of Rwanda (BNR) is at 2.6%.
5. The company's beta is 1.12
6. The corporate tax rate is 30%.

Required:

Calculate weighted average cost of capital (5 Marks)

c) Discuss five limitations of weighted average cost of capital (5 Marks)

(Total: 20 Marks)

QUESTION SIX

a) Define the term capital rationing and give at least 4 possible ways of solving capital rationing (5 Marks)

b) The Capital Asset Pricing Model (CAPM) is an extension of Portfolio Theory, which is concerned with the risk and return of portfolios and the process by which risk can be reduced by efficient diversification. The CAPM assumes that all investors are efficiently diversified and examines the risk and return of any capital asset. A capital asset can be a portfolio, an individual share or security, a portfolio of projects or investments made by a company or even an individual project.

Required:

Discuss three assumptions, two applications and two limitations of CAPM (7 Marks)

c) Briefly, discuss at least 4 factors to consider in paying dividends (8 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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