

**CERTIFIED PUBLIC ACCOUNTANT
INTERMEDIATE LEVEL EXAMINATIONS**

I1.1: MANAGERIAL FINANCE

DATE: THURSDAY, 31 MARCH 2022

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

Panga Ltd is a public limited company listed on the Rwanda Stock Exchange. Analysts suggest that the company is one of the few highly geared companies on the bourse. Panga Ltd's management is exploring new projects to execute its expansionary strategy. The company's investment department has presented five possible capital investments that are believed to be feasible by the Chief Investment Officer (CIO), but the company's Chief Finance Officer has indicated that the company only has access to FRW 730 million. In the report submitted by the CIO, it was clarified that the projects are not divisible, and it is impossible to postpone them until a future period. Table 1 demonstrates the five projects cashflows:

Table 1: Cash flows for Panga Ltd's proposed projects

	Expected net cash inflows (including salvage value)					
Year	1	2	3	4	5	
Project	FRW '000'	FRW '000'	FRW '000'	FRW '000'	FRW '000'	Initial Outflow (FRW "000")
A	85,000	85,000	85,000	85,000	85,000	261,000
B	90,000	94,000	85,000			195,000
C	62,000	62,000	89,000	97,000		190,000
D	88,000	88,000	88,000	88,000		195,000
E	55,000	65,000	75,000	99,000	55,000	195,000

It has been indicated by the CIO that all the projects' risk is not different from the company's existing capital investments. Panga Ltd's policy is to invest any surplus funds in the money market with an annual return of 9%. It is assumed that the money market is an efficient market. Panga Ltd's cost of capital is 12% per year.

Required:

- (a) Use the information provided above to answer the following questions:
- i. Calculate the expected net present value for each project. (5 Marks)
Note: Please round to three decimal places.
 - ii. Compute the expected profitability index associated with each of the five projects and rank the projects according to investment appraisal techniques computed in (i) and (ii). (13 Marks)
 - iii. Briefly explain why rankings in (ii) differ for the two investment techniques. (1 Mark)
- (b) State three basic assumptions of the Capital Asset Pricing Model. (3 Marks)
- (c) Briefly describe three factors affecting a company's capital structure. (3 Marks)

(Total: 25 Marks)

QUESTION TWO

Nsanzabimana Rwanda Limited (NR Ltd), a public company headquartered in Musanze, deals in the sale of household goods. NR Ltd operates 100 shops and supermarkets across Rwanda. The company's capital structure is composed of FRW 350 million and FRW 150 million in debt and common stock respectively. The tax rate is 30%. NR Ltd's financial analysts estimate that the company's cost of debt is 7% and its cost of equity as 12%.

NR Ltd's board has agreed with management's proposal to acquire Gororwa Rwanda Limited (GR Ltd) a retail chain that has been deemed promising. GR Ltd is a direct competitor to NR Ltd with 45 retail shops across Rwanda but has no publicly tradable common stock. GR Ltd's current year's earnings before interest and taxes (EBIT) is FRW 80 million and it is expected that its EBIT will grow by 10% a year for the next five years. Increases in net working capital and capital spending are both expected to be 20% of EBIT. Depreciation will be 8% of EBIT. The perpetual growth rate in cash flow after five years is estimated to be 4%. Neither company has excess cash and both companies have the same business risks.

Required:

- (a) If NR Ltd acquires GR Ltd:
 - i. Calculate NR Ltd's weighted average cost of capital. (2 Marks)
 - ii. Compute GR Ltd's net cash flows for each of the five years. (12 Marks)
 - iii. Determine GR Ltd's terminal value at year five. (0.5 Marks)
 - iv. Determine GR Ltd's total value to be paid by NR Ltd. (0.5 Marks)
- (b) State THREE factors that determine the cost of debt for a company. (3 Marks)
- (c) Briefly describe TWO assumptions of weighted average cost of capital when used as a discounting rate for new projects. (2 Marks)

Note: Round your answers to two decimal places.

(Total: 20 Marks)

QUESTION THREE

Rugano Rwanda Limited (RR Ltd) is a company located in Rusizi. The company's executives tend to have disagreements with shareholders and the board of directors. These problems mostly emanate from the management's tendency to take decisions aimed at short-term profitability and elevated compensation. For instance, recently management took a decision to expand into new, high-risk markets. Further, the company's management has been proposing that the board approves investments in emerging technologies such as bitcoin among others. However, this poses an unjustified risk to shareholders, who are most concerned with the long-term growth of earnings and share price appreciation.

Required:

- (a) With respect to the problems between shareholders and RR Ltd's management:
 - i. State FOUR potential causes of the problems between RR Ltd's management and its shareholders. (4 Marks)
 - ii. Advise how the problems in (i) can be reduced. (3 Marks)
- (b) Briefly describe the following emerging technologies:
 - i. Blockchain. (2 Marks)

- ii. Cryptocurrency.** (2 Marks)
iii. Fintech. (2 Marks)
iv. Disintermediation. (2 Marks)
(Total: 15 Marks)

SECTION B

QUESTION FOUR

Curanga Pakalast Entertainment (CPE) is one of the leading event organizer companies in Rwanda promoting entertainment in the country. Due to COVID-19, the entertainment industry has been severely affected and companies in the industry are considering funding using venture capital. The company is considering buying a machine that would boost its capacity at a cost of FRW 5,700,000 to be depreciated over five years by the straight-line method and will be worthless at the end of this period. Since there are many similar companies which have the machine, CPE has an option of leasing it with year-end payments of FRW 2,200,000. If CPE wanted, it could issue corporate bonds at an interest rate of 12%. CPE pays corporate tax at a rate of 30%.

Required:

- (a) **Advise the management of CPE if it should buy or lease the machine.**
Note: Round your answers to two decimal places. (10 Marks)
- (b) **Differentiate between Sale and Leaseback and Leveraged Leases.** (2 Marks)
- (c) With reference to venture capital:
- i. **Explain three common characteristics of venture capitalists.** (3 Marks)
 - ii. **Briefly describe five stages of venture capital funding.** (5 Marks)
- (Total: 20 Marks)**

QUESTION FIVE

Ambara Shop Limited (AS Ltd) is a famous shop located in Bugesera and it specializes in shoes. The company is considering making changes to its credit policy and to better manage its cash cycle.

Credit agency subscription:

Ms Juru Sharon, the company's Finance Manager, has advised that the company should offer credit to its customers during the upcoming sunny season as customers will be making travels for leisure across the country and abroad. Ms Juru estimates that AS Ltd will sell 1,000 shoes and that it will cost AS Ltd FRW 8,000 on average to produce a shoe. A report submitted by Ms Juru indicates that only 94% of the customers will be able to make their payments. Ms Juru has advised management of AS Ltd that it should subscribe to a credit agency to identify the remaining 6% of customers. In her analysis, this service will initially cost AS Ltd a fee of FRW 2,000 with an additional charge of FRW 350 per individual sale of shoes.

AS Ltd's cash cycle management

Ms Juru has presented data in table 2 as a basis for optimizing the company's cash-conversion cycle:

Table 2: Ms Juru's report

	2019	2020	Mean	Per day during 2021
Time (year end, as flow for year)	FRW 'million'	FRW 'million'	FRW 'million'	FRW
Raw materials inventory	31	33	32	-
Creditors	21	23	22	-
Work-in-progress inventory	19	20	19.5	-
Finished goods inventory	18	19	18.5	-
Debtors	29	41	35	-
Sales (annual)	240	260	-	554,642
Raw material usage (annual)	190	205	-	406,717
Cost of goods sold (annual)	220	235	-	500,400

Required:

(a) Refer to credit agency subscription information and answer the following questions:

- i. State FIVE factors affecting a company's credit policy. (5 Marks)
- ii. Advise AS Ltd's management if it should subscribe to the agency. (5 Marks)

(b) Refer to the data in table 2 and answer the following questions:

- i. List TWO activities that increase cash and TWO activities that decrease cash. (4 Marks)
- ii. Calculate AS Ltd's cash-conversion cycle. (6 Marks)

(Total: 20 Marks)

QUESTION SIX

(a) Shora Rwanda Limited (SR Ltd) is considering stocks A and B. Table 3 indicates the return on both assets in three different economic waves. The chance that each state of the economy is likely to happen is equal.

Table 3: Stocks A and B:

State of Economy	Return on Stock A	Return on Stock B
Bear	0.128	-0.047
Normal	0.146	0.133
Bull	0.084	0.296

Required:

Calculate the covariance and correlation between the two stocks and interpret your results. *Note: Round your answers to four decimal places.* (13 Marks)

(b) A company's dividend policy dictates the amount of dividends paid out by the company to its shareholders and the frequency with which the dividends are paid out. There are several theories on dividends. One of them is Walter's Model by Prof. James E Walter.

Required:

- i. Briefly describe the Walter's Dividend Model.** (2 Marks)
- ii. Describe THREE assumptions of the Walter's Dividend Model.** (3 Marks)
- iii. State TWO criticisms of the Walter's Dividend Model.** (2 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