

CERTIFIED PUBLIC ACCOUNTANT INTERMEDIATE LEVEL EXAMINATIONS

11.1: MANAGERIAL FINANCE

WEDNESDAY: 07 JUNE 2017

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(3) Questions to attempt any two(2).**
- 4. In summary attempt five(5) questions.**
- 5. Marks allocated to each question are shown at the end of the question.**
- 6. Show all your workings.**
- 7. All iCPAR Examination rules and regulations apply.**

SECTION (A)

Attempt all questions in this section

QUESTION ONE

NSHIMYE Quality Ltd (NQL) deals in importation and sale of cell phones but is considering introduction of three new product lines. In a bid to boost its total sales and increasing its competitive edge over other players in the industry, the directors of NQL have reduced their initial list of projects to four from which the three will be finally selected. The expected cash inflow for the four projects for the next four years is as follows:

Years	2018	2019	2020	2021
Project	Frw"000"	Frw"000"	Frw"000"	Frw"000"
P	(160,000)	130,000	125,000	125,000
Q	(130,000)	120,000	125,000	145,000
R	(140,000)	(150,000)	160,000	170,000
S	(150,000)	110,000	130,000	140,000

None of the four projects can be delayed and are all divisible. The minimum return expected by shareholders of NQL is 10% per annum for all the subsequent years and the capital available is limited to Frw 300 million.

REQUIRED:

- Compute the Net present value (NPV) and the profitability index for the above projects P, Q, R and S. (12 Marks)
 - Which projects should NQL undertake with the limited cash constraint of Frw 300 million. (4 Marks)
 - Assuming that the projects were indivisible, and the cash constraint is still Frw 300 million, determine the projects to be selected. (5 Marks)
 - Explain the terms:
 - Capital rationing (3 Marks)
 - Working capital management (1 Mark)
- (Total 25 Marks)

QUESTION TWO.

Ngaruye (R) Ltd (NRL) has two securities in its capital structure. The company is trying to determine their cost of capital. They have hired you as an expert to help them determine the cost of these securities and they have provided you with the details of the securities as below:

- 10% irredeemable debenture with a market value of Frw100 cum interest (Cum-Int).
- 15% redeemable debenture with a market value of Frw 95 ex-interest (Ex-Int) redeemable at the end of 5 years from now with interest payable semi-annually. The security will be redeemed at par. Assume it is now 31 December 2016.

REQUIRED:

- (a) Explain to the management of NRL the importance of cost of capital. (5 Marks)
- (b) Calculate the cost of each security. (15Marks)

(Total 20 Marks)

QUESTION THREE.

Dukundane Investment Ltd (DIL) deals in real estates. It owns five estates within Rwanda with 20 houses in each estate. DIL rents out each house at Frw 2 million per annum with a 30 days' accounts receivables turnover policy. The statement of financial position as at 31 December-2016, showed that 20% of the tenants had failed to comply with the above policy and 5% of them had secretly vacated the premises. At the interim board meeting, the financial controller advised management to adopt a policy of factoring of trade receivables in order to reduce the length of the operating cycle.

REQUIRED:

- (a) Explain the following key concepts as used in managerial finance:
- (i) Factoring of trade receivables (2 Marks)
- (ii) Operating cycle (3 Marks)
- (b) Explain the advantages and disadvantages of factoring trade receivables. (10 Marks)

(Total 15 Marks)

SECTION (B)

Attempt two questions in this section

QUESTION FOUR

After the presidential directive to beautify Kigali City, the City Authority demolished dilapidated structures and kiosks along the various roads, which left many small business owners with nowhere to settle. Two brothers Gatanazi and Gatera became victims but later reorganized themselves and started private market business. Through support from the friends of their late father and from farming and other business projects, they managed to raise Frw 50 million. They constructed their first private market along Nyamirambo Street in Kigali on a 2 acre piece of land inherited from the late father. In order to construct more stalls in the market, they have approached the bank for a Frw 50 million loan for eight years at 15% interest. The loan will be repaid in eight equal year end installment.

REQUIRED:

- (a) Prepare the loan amortization schedule. (10 Marks)
- (b) Assuming the bank declines to grant the loan, describe both long and short term sources of finance available to these brothers in order to construct more stalls in the market. (10 Marks)

(Total 20 Marks)

QUESTION FIVE.

Banda (R) Ltd (BRL) plans to get listed on Rwanda stock market. One of the requirements for any company seeking listing on a stock market is to determine its value which will be used in the initial public offer (IPO). A financial expert advised the company's management to use both assets and earnings based methods in order to arrive at a fair value. The details about the company are given below:

Statement of Financial Position as at 31 December, 2016

	Frw '000'
Noncurrent assets	
Property plant and equipment	200,000
Good will	10,000
Current assets	
Inventory	50,000
Receivables	50,000
Bank	20,000
Non-current assets held for sale	40,000
Total assets	<u>370,000</u>
Equity and liabilities	
Share capital @ 10,000	190,000
Reserves	20,000
Noncurrent liabilities	
10% of debentures	100,000
Current liabilities	
Payables	54,000
Deffered tax	6,000
Total equity and liabilities	<u>370,000</u>

Statement of comprehensive income for the year ended 31 December, 2016:

	Frw '000'
Sales	400,000
Cost of sales	(200,000)
Gross profit	200,000
Administrative expenses	(95,000)
Selling distribution expenses	(87,000)
Profit before interest tax	18,000
Finance cost	(10,000)
Profit after interest but before tax	8,000
Tax	(2,400)
Profit after tax	<u>5,600</u>

Assume the price earnings ratio (P.E) is 50

The finance director of BRL has advised management that they need to hire an actuary or valuer to revalue the assets of the company before determination of its value is done. He further said that valuing a company

using historical costs, may not give a fair value. The company hired a valuer and the following are revalued amounts of the assets.

- (i) Property Plant and Equipment Frw 300,000,000
- (ii) Good will; the valuer failed to determine its market value
- (iii) 10% of the receivables cannot be collected.

REQUIRED:

- (a) Determine the value of BRL using;
 - (i) Asset based method **(10 Marks)**
 - (ii) Price earnings ratio (P.E) **(5 Marks)**
 - (b) Explain the limitations of the valuation methods used above. **(5 Marks)**
- (Total 20 Marks)**

QUESTION SIX

Ntarugera is considering investing in shares in two companies P and Q, in order to diversify the risks and maximize returns. Before he does so he wants to determine the risk and returns from the two investments. He has sought for expert help from you. The details of the probabilities and possible returns are given to you as shown below:

Probability	Possible returns	
	Shares in P (%)	Shares in Q (%)
0.20	20	10
0.30	-5	40
0.10	30	-2
0.40	10	12

REQUIRED:

- (a) Compute the mean and standard deviations for the shares in each company. **(10 Marks)**
 - (b) Assess the level of risk diversification using the correction coefficient between the two investments. **(5 Marks)**
 - (c) State the assumptions of Capital Asset Pricing Model (CAPM). **(5 Marks)**
- (Total 20 Marks)**

End of question paper

Financial tables

Present value interest factor of Frw 1 per period at r% for n periods $(1 + r)^{-n}$

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
Period	13%	14%	15%	16%	17%	18%	19%	20%	21%	22%	23%	24%
1	0.885	0.877	0.870	0.862	0.855	0.847	0.840	0.833	0.826	0.820	0.813	0.806
2	0.783	0.769	0.756	0.743	0.731	0.718	0.706	0.694	0.683	0.672	0.661	0.650
3	0.693	0.675	0.658	0.641	0.624	0.609	0.593	0.579	0.564	0.551	0.537	0.524
4	0.613	0.592	0.572	0.552	0.534	0.516	0.499	0.482	0.467	0.451	0.437	0.423
5	0.543	0.519	0.497	0.476	0.456	0.437	0.419	0.402	0.386	0.370	0.355	0.341
6	0.480	0.456	0.432	0.410	0.390	0.370	0.352	0.335	0.319	0.303	0.289	0.275
7	0.425	0.400	0.376	0.354	0.333	0.314	0.296	0.279	0.263	0.249	0.235	0.222
8	0.376	0.351	0.327	0.305	0.285	0.266	0.249	0.233	0.218	0.204	0.191	0.179
9	0.333	0.308	0.284	0.263	0.243	0.225	0.209	0.194	0.180	0.167	0.155	0.144
10	0.295	0.270	0.247	0.227	0.208	0.191	0.176	0.162	0.149	0.137	0.126	0.116
11	0.261	0.237	0.215	0.195	0.178	0.162	0.148	0.135	0.123	0.112	0.103	0.094
12	0.231	0.208	0.187	0.168	0.152	0.137	0.124	0.112	0.102	0.092	0.083	0.076
13	0.204	0.182	0.163	0.145	0.130	0.116	0.104	0.093	0.084	0.075	0.068	0.061
14	0.181	0.160	0.141	0.125	0.111	0.099	0.088	0.078	0.069	0.062	0.055	0.049
15	0.160	0.140	0.123	0.108	0.095	0.084	0.074	0.065	0.057	0.051	0.045	0.040
16	0.141	0.123	0.107	0.093	0.081	0.071	0.062	0.054	0.047	0.042	0.036	0.032
17	0.125	0.108	0.093	0.080	0.069	0.060	0.052	0.045	0.039	0.034	0.030	0.026
18	0.111	0.095	0.081	0.069	0.059	0.051	0.044	0.038	0.032	0.028	0.024	0.021
19	0.098	0.083	0.070	0.060	0.051	0.043	0.037	0.031	0.027	0.023	0.020	0.017
20	0.087	0.073	0.061	0.051	0.043	0.037	0.031	0.026	0.022	0.019	0.016	0.014

Present value interest factor of an (ordinary) annuity of Frw 1 per period at r% for n periods $\left(\frac{1 - (1 + r)^{-n}}{r} \right)$

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
Period	13%	14%	15%	16%	17%	18%	19%	20%	21%	22%	23%	24%
1	0.885	0.877	0.870	0.862	0.855	0.847	0.840	0.833	0.826	0.820	0.813	0.806
2	1.668	1.647	1.626	1.605	1.585	1.566	1.547	1.528	1.509	1.492	1.474	1.457
3	2.361	2.322	2.283	2.246	2.210	2.174	2.140	2.106	2.074	2.042	2.011	1.981
4	2.974	2.914	2.855	2.798	2.743	2.690	2.639	2.589	2.540	2.494	2.448	2.404
5	3.517	3.433	3.352	3.274	3.199	3.127	3.058	2.991	2.926	2.864	2.803	2.745
6	3.998	3.889	3.784	3.685	3.589	3.498	3.410	3.326	3.245	3.167	3.092	3.020
7	4.423	4.288	4.160	4.039	3.922	3.812	3.706	3.605	3.508	3.416	3.327	3.242
8	4.799	4.639	4.487	4.344	4.207	4.078	3.954	3.837	3.726	3.619	3.518	3.421
9	5.132	4.946	4.772	4.607	4.451	4.303	4.163	4.031	3.905	3.786	3.673	3.566
10	5.426	5.216	5.019	4.833	4.659	4.494	4.339	4.192	4.054	3.923	3.799	3.682
11	5.687	5.453	5.234	5.029	4.836	4.656	4.486	4.327	4.177	4.035	3.902	3.776
12	5.918	5.660	5.421	5.197	4.988	4.793	4.611	4.439	4.278	4.127	3.985	3.851
13	6.122	5.842	5.583	5.342	5.118	4.910	4.715	4.533	4.362	4.203	4.053	3.912
14	6.302	6.002	5.724	5.468	5.229	5.008	4.802	4.611	4.432	4.265	4.108	3.962
15	6.462	6.142	5.847	5.575	5.324	5.092	4.876	4.675	4.489	4.315	4.153	4.001
16	6.604	6.265	5.954	5.668	5.405	5.162	4.938	4.730	4.536	4.357	4.189	4.033
17	6.729	6.373	6.047	5.749	5.475	5.222	4.990	4.775	4.576	4.391	4.219	4.059
18	6.840	6.467	6.128	5.818	5.534	5.273	5.033	4.812	4.608	4.419	4.243	4.080
19	6.938	6.550	6.198	5.877	5.584	5.316	5.070	4.843	4.635	4.442	4.263	4.097
20	7.025	6.623	6.259	5.929	5.628	5.353	5.101	4.870	4.657	4.460	4.279	4.110

