



**CIFA PART II SECTION 3
CORPORATE FINANCE**

WEDNESDAY: 22 May 2019.

Time Allowed: 3 hours.

Answer ALL questions. Marks allocated to each question are shown at the end of the question. Show ALL your workings.

QUESTION ONE

(a) Finance managers of organisations make financial decisions such as investment decisions, financing decisions, dividend decisions as well as liquidity decisions.

In light of the above statement, explain three ways in which financial decisions could impact on firm's value. (6 marks)

(b) Company A seeks to acquire company B. Relevant data for the two companies is provided below:

	Company A	Company B
Pre-merger share price	Sh.80	Sh.48
Number of outstanding ordinary shares	30 million	20 million

As a result of the acquisition, the cost reduction synergy arising is Sh.180 million.

The deal is completed through a share transaction with an exchange ratio of 0.7

Required:

Calculate the gain of the merger to the following:

(i) To the target. (3 marks)

(ii) To the acquirer. (2 marks)

(c) Vibe Sounds Limited has tasked you to determine its optimal capital structure. The company's capital structure consists of debt and equity. In order to estimate the cost of debt, the company has produced the following table:

Debt-to-total asset ratio	Equity-to-total asset ratio	Bond rating	Before tax cost of debt (%)
0.10	0.90	AA	7.0
0.20	0.80	A	7.2
0.30	0.70	A	8.0
0.40	0.60	BB	8.8
0.50	0.50	B	9.6

Additional information:

- The corporate tax rate is 30%.
- The risk-free rate is 5% and the market risk premium is 6%.
- The firm's unlevered beta is 1.0.

Required:

(i) The firm's optimal capital structure. (7 marks)

(ii) The company's weighted average cost of capital (WACC) based on the optimal capital structure in (c) (i) above. (2 marks)

(Total: 20 marks)

QUESTION TWO

- (a) Examine two features of leveraged restructuring. (2 marks)
- (b) Assess four motivations for mergers and acquisitions in the global markets. (4 marks)
- (c) Fastline Printers Limited is considering investing in one of three mutually exclusive projects, X, Y and Z. The firm's cost of capital is 15% and the risk-free rate is 10%. The firm has gathered the basic cash flow and risk index data for each project, as shown in the following table:

	X	Project Y	Z
Initial investment (Sh.)	15,000	11,000	19,000
Year		Cash inflows (Sh.)	
1	6,000	6,000	4,000
2	6,000	4,000	6,000
3	6,000	5,000	8,000
4	6,000	2,000	12,000
Risk index	1.80	1.00	0.60

Required:

- (i) The net present value (NPV) of each project. Comment on the most preferable project. (3 marks)
- (ii) The risk-adjusted discount rate (RADR) for each project. (3 marks)
- (iii) The risk-adjusted NPV for each project. Comment on the most preferable project. (3 marks)
- (iv) Compare your findings in (c) (i) and (c) (iii) above and advise on which project the firm should accept. (1 mark)
- (d) Millenium Airlines is contemplating investment in a new passenger aircraft, code name Millenia. The airline chief financial officer has gathered the following estimates:
- The cost of developing the Millenia is forecast at Sh.900 million, and this investment can be depreciated in 6 equal annual instalments.
 - Production of the plane is expected to take place at a steady annual rate over the following 6 years.
 - The average price of Millenia is expected to be Sh.15.5 million.
 - The fixed costs are forecasted at Sh.175 million per year.
 - The variable costs are forecasted at Sh.8.5 million per unit.
 - The corporate tax rate is 30% and the cost of capital is 10%.

Required:

Using the net present value (NPV) approach, determine the number of planes that Millenia Airline should sell in order to break-even. (4 marks)

(Total: 20 marks)

QUESTION THREE

- (a) Global Industry Corporation has an equity capital of 12%, total equity of Sh.12 million, total debt of Sh.8 million and recorded sales of Sh.30 million last year.

Two scenarios relating to the company are provided below:

Scenario 1

The company has a target assets-to-sales ratio of 0.667, a target net profit margin of 0.04, a target debt-to-equity ratio of 0.667, and a target earnings retention ratio of 0.75.

Scenario 2

The company has established for next year a target assets-to-sales ratio of 0.62, a target net profit margin of 0.05 and a target debt-to-equity ratio of 0.80. The company wishes to pay an annual dividend of Sh.0.3 million and raise Sh.1 million in equity capital next year.

Required:

- (i) The sustainable growth rate for Scenario 1. (2 marks)
- (ii) The sustainable growth rate for Scenario 2. (2 marks)
- (iii) Comment on the difference between the sustainable growth rates for the two scenarios in (a) (i) and (a) (ii) above. (2 marks)

- (b) In relation to financial distress, argue three cases why firms could prefer to use formal bankruptcies to restructure. (3 marks)
- (c) ABE Ltd. and BOO Ltd. are firms operating in the same industry and are considered to be in the same risk profile.

Each firm generates operating profit of Sh.25 million each year. The earnings are expected to remain constant each year in perpetuity.

The capital structures of both firms are given as follows:

	ABE Ltd. Sh. "million"	BOO Ltd. Sh. "million"
Equity (market value)	175	150
4% Debt (Trading at par)	-	100
	<u>175</u>	<u>250</u>

Additional information:

1. Both firms adopt a 100% payout ratio as their dividend policy.
2. Corporate tax rate applicable is 30%.

Required:

- (i) Determine the weighted average cost of capital (WACC) for the two firms. (2 marks)
 - (ii) Advise Musa Mutembei who holds 5% of BOO Ltd.'s shares on the arbitrage opportunities available to him. (4 marks)
- (d) Enkare Company Ltd. is considering undertaking an expansion programme that will increase the firm's turnover significantly.

The firm is contemplating raising Sh.30 million from external sources to finance this investment activity.

Two alternative financing options available to the firm are given as follows:

Option I

Issue new ordinary shares at par of Sh.20 each to raise the full amount.

Option II

Issue new ordinary shares at par of Sh.20 each to raise Sh.20 million and the remainder to be raised through the issue of new 14% debentures at par.

Corporation tax rate applicable is 30% and the firm's existing capital structure prior to raising the additional funds was as follows:

	Sh. "000"
Ordinary share capital (Sh.20 each)	80,000
Reserves	10,000
12% Debt	<u>10,000</u>
	<u>100,000</u>

Required:

Compute the earnings before interest and tax (EBIT) and earnings per share (EPS) at the point of indifference in the firm's earnings under financing plan I and financing plan II above. (5 marks)

(Total: 20 marks)

QUESTION FOUR

- (a) As the chief finance officer, CFO of Baobab Limited, you have received a letter from a major shareholder who needs information about the company's dividend policy. The shareholder is specifically wondering about the amount of dividend the company is likely to pay next year. You have not yet collected all the information about the expected dividend payment, but you do know the following:

1. The company follows a residual dividend policy.
 2. The total capital budget for next year is likely to be one of three amounts depending on the results of capital budgeting studies that are currently underway. The capital expenditure amounts are Sh.2 million, Sh.3 million and Sh.4 million respectively.
 3. The forecasted level of potential retained earnings next year is Sh.2 million.
 4. The target or optimal capital structure is a debt ratio of 40%.
- You have decided to respond by sending the shareholder the best information available to you through a letter.

Required:

- (i) Explain the term "residual dividend policy". (2 marks)
- (ii) Compute the amount of dividend and the dividend payment ratio for each of the three capital expenditure amounts. (5 marks)
- (iii) Compare the amount of dividends computed in (a) (ii) above associated with each of the three capital expenditure amounts. (1 mark)

(b) The following information was extracted from the books of Ravella Publishing Limited as at 31 December 2018:

1.	Total assets	Sh.10,000,000.
2.	Earnings before interest and tax (EBIT)	Sh.2,000,000.
3.	Preference dividends	Sh.200,000.
4.	Corporation tax rate	30%.

In an effort to determine the optimal capital structure, the firm has assembled the following data:

Capital structure debt ratio (%)	Cost of debt, r_d (%)	Number of ordinary shares	Required rate of return, r_s (%)
0	0	200,000	12
15	8	170,000	13
30	9	140,000	14
45	12	110,000	16
60	15	80,000	20

Required:

- (i) Calculate the earnings per share (EPS) for each level of indebtedness. (5 marks)
- (ii) Price per share for each level of indebtedness using the results obtained in (b) (i) above. (5 marks)
- (iii) Advise the management on the optimal capital structure. Justify your choice. (2 marks)
- (Total: 20 marks)**

QUESTION FIVE

- (a) (i) Highlight three determinants of a firm's liquidity position. (3 marks)
- (ii) Given below are financial data extracts of Watamu Company Ltd. for the financial years ended 31 December:

	2017 Sh. "million"	2018 Sh. "million"
Sales	240	245
Inventory of finished goods	10	12
Stock of raw materials	15	20
Stock of work-in-progress	5	8
Cost of sales	94	95
Cost of production	60	90
Debtors	13	15
Creditors	14	16

Additional information:

- The annual usage of raw materials for the year 2018 are estimated at Sh.235 million.
- Assume all sales are on credit basis and 360 days in a year.

Required:

Compute the working capital operating cycle of the firm for the year 2018. (6 marks)

(b) Explain the following financial contracts as used in Islamic Finance:

- (i) Musharaka. (1 mark)
- (ii) Mudaraba. (1 mark)
- (iii) Murabaha. (1 mark)
- (iv) Ijara. (1 mark)

- (c) Alpha Company, a small machine shop, is contemplating acquiring a new machine that costs Sh.80,000. The machine can be leased or purchased. The firm is in the 30% tax bracket, and its after-tax cost of debt is 9%. The terms of the lease and purchase plans are as follows:

Lease:

The firm would obtain a 5-year lease requiring annual end-of-year lease payments of Sh.19,800. All maintenance costs would be paid by the lessor, and insurance and other costs would be borne by the lessee. The lessee will exercise its option to purchase the asset for Sh.24,000 at termination of the lease.

Purchase:

The firm would finance the purchase of the machine with a 14%, 5-year loan requiring end-of-year instalment payments of Sh.23,302. The machine would be depreciated under modified accelerated cost recovery system (MACRS) using a 5-year recovery period as follows:

Recovery year	Percentage by recovery year (%)
1	20
2	32
3	19
4	12
5	12

The firm will pay Sh.2,000 per year for a service contract that covers all maintenance costs, insurance and other costs will be borne by the firm. The firm plans to keep the equipment and use it beyond its 5-year recovery period.

Required:

- (i) The after-tax cash outflows under each alternative. (4 marks)
- (ii) The present value of each after tax cash outflow, using the after-tax cost of debt. (2 marks)
- (iii) Advise the management on which alternative is viable based on your results in (c) (ii) above. (1 mark)

(Total: 20 marks)

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Present Value of 1 Received at the End of n Periods:

$$PVIF_{r,n} = 1/(1+r)^n = (1+r)^{-n}$$

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	12%	14%	15%	16%	18%	20%	24%	28%	32%	36%
1	.9901	.9804	.9709	.9615	.9524	.9434	.9346	.9259	.9174	.9091	.8929	.8772	.8696	.8621	.8475	.8333	.8065	.7813	.7576	.7353
2	.9803	.9612	.9426	.9246	.9070	.8900	.8734	.8573	.8417	.8264	.7972	.7695	.7561	.7432	.7182	.6944	.6504	.6104	.5739	.5407
3	.9706	.9423	.9151	.8890	.8638	.8396	.8163	.7938	.7722	.7513	.7118	.6750	.6575	.6407	.6086	.5787	.5245	.4768	.4348	.3975
4	.9610	.9238	.8885	.8548	.8227	.7921	.7629	.7350	.7084	.6830	.6355	.5921	.5718	.5523	.5158	.4823	.4230	.3725	.3294	.2923
5	.9515	.9057	.8626	.8219	.7835	.7473	.7130	.6806	.6499	.6209	.5674	.5194	.4972	.4761	.4371	.4019	.3411	.2910	.2495	.2149
6	.9420	.8880	.8375	.7903	.7462	.7050	.6663	.6302	.5963	.5645	.5066	.4556	.4323	.4104	.3704	.3349	.2751	.2274	.1890	.1580
7	.9327	.8706	.8131	.7599	.7107	.6651	.6227	.5835	.5470	.5132	.4523	.3996	.3759	.3538	.3139	.2791	.2218	.1776	.1432	.1162
8	.9235	.8535	.7894	.7307	.6768	.6274	.5820	.5403	.5019	.4665	.4039	.3506	.3269	.3050	.2660	.2326	.1789	.1388	.1085	.0854
9	.9143	.8368	.7664	.7026	.6446	.5919	.5439	.5002	.4604	.4241	.3606	.3075	.2843	.2630	.2255	.1938	.1443	.1084	.0822	.0628
10	.9053	.8203	.7441	.6756	.6139	.5584	.5083	.4632	.4224	.3855	.3220	.2697	.2472	.2267	.1911	.1615	.1164	.0847	.0623	.0462
11	.8963	.8043	.7224	.6496	.5847	.5268	.4751	.4289	.3875	.3505	.2875	.2366	.2149	.1954	.1619	.1346	.0938	.0662	.0472	.0340
12	.8874	.7885	.7014	.6246	.5568	.4970	.4440	.3971	.3555	.3186	.2567	.2076	.1869	.1685	.1372	.1122	.0757	.0517	.0357	.0250
13	.8787	.7730	.6810	.6006	.5303	.4688	.4150	.3677	.3262	.2897	.2292	.1821	.1625	.1452	.1163	.0935	.0610	.0404	.0271	.0184
14	.8700	.7579	.6611	.5775	.5051	.4423	.3878	.3405	.2992	.2633	.2046	.1597	.1413	.1252	.0985	.0779	.0492	.0316	.0205	.0135
15	.8613	.7430	.6419	.5553	.4810	.4173	.3624	.3152	.2745	.2394	.1827	.1401	.1229	.1079	.0835	.0649	.0397	.0247	.0155	.0099
16	.8528	.7284	.6232	.5339	.4581	.3936	.3387	.2919	.2519	.2176	.1631	.1229	.1069	.0930	.0708	.0541	.0320	.0193	.0118	.0073
17	.8444	.7142	.6050	.5134	.4363	.3714	.3166	.2703	.2311	.1978	.1456	.1078	.0929	.0802	.0600	.0451	.0258	.0150	.0089	.0054
18	.8360	.7002	.5874	.4936	.4155	.3503	.2959	.2502	.2120	.1799	.1300	.0946	.0808	.0691	.0508	.0376	.0208	.0118	.0068	.0039
19	.8277	.6864	.5703	.4746	.3957	.3305	.2765	.2317	.1945	.1635	.1161	.0829	.0703	.0596	.0431	.0313	.0168	.0092	.0051	.0029
20	.8195	.6730	.5537	.4564	.3769	.3118	.2584	.2145	.1784	.1486	.1037	.0728	.0611	.0514	.0365	.0261	.0135	.0072	.0039	.0021
25	.7798	.6095	.4776	.3751	.2953	.2330	.1842	.1460	.1160	.0923	.0588	.0378	.0304	.0245	.0160	.0105	.0046	.0021	.0010	.0005
30	.7419	.5521	.4120	.3083	.2314	.1741	.1314	.0994	.0754	.0573	.0334	.0196	.0151	.0116	.0070	.0042	.0016	.0006	.0002	.0001
40	.6717	.4529	.3066	.2083	.1420	.0972	.0668	.0460	.0318	.0221	.0107	.0053	.0037	.0026	.0013	.0007	.0002	.0001		
50	.6080	.3715	.2281	.1407	.0872	.0543	.0339	.0213	.0134	.0085	.0035	.0014	.0009	.0006	.0003	.0001				
60	.5504	.3048	.1697	.0951	.0535	.0303	.0173	.0099	.0057	.0033	.0011	.0004	.0002	.0001						

* The factor is zero to four decimal places

Present Value of an Annuity of 1 Per Period for n Periods:

$$PVIF_{r,n} = \sum_{t=1}^n \frac{1}{(1+r)^t} = \frac{1 - \frac{1}{(1+r)^n}}{r}$$

number of payments	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	12%	14%	15%	16%	18%	20%	24%	28%	32%
1	0.9901	0.9804	0.9709	0.9615	0.9524	0.9434	0.9346	0.9259	0.9174	0.9091	0.8929	0.8772	0.8696	0.8621	0.8475	0.8333	0.8065	0.7813	0.7576
2	1.9704	1.9416	1.9135	1.8861	1.8594	1.8334	1.8080	1.7833	1.7591	1.7355	1.6901	1.6467	1.6257	1.6052	1.5656	1.5278	1.4568	1.3916	1.3315
3	2.9410	2.8839	2.8286	2.7751	2.7232	2.6730	2.6243	2.5771	2.5313	2.4869	2.4018	2.3216	2.2832	2.2459	2.1743	2.1065	1.9813	1.8684	1.7663
4	3.9020	3.8077	3.7171	3.6299	3.5460	3.4651	3.3872	3.3121	3.2397	3.1699	3.0373	2.9137	2.8550	2.7982	2.6901	2.5887	2.4043	2.2410	2.0957
5	4.8534	4.7135	4.5797	4.4518	4.3295	4.2124	4.1002	3.9927	3.8897	3.7908	3.6048	3.4331	3.3522	3.2743	3.1272	2.9906	2.7454	2.5320	2.3452
6	5.7955	5.6014	5.4172	5.2421	5.0757	4.9173	4.7665	4.6229	4.4859	4.3553	4.1114	3.8887	3.7845	3.6847	3.4976	3.3255	3.0205	2.7594	2.5342
7	6.7282	6.4720	6.2303	6.0021	5.7864	5.5824	5.3893	5.2064	5.0330	4.8684	4.5638	4.2883	4.1604	4.0386	3.8115	3.6046	3.2423	2.9370	2.6775
8	7.6517	7.3255	7.0197	6.7327	6.4632	6.2098	5.9713	5.7466	5.5348	5.3349	4.9676	4.6389	4.4873	4.3436	4.0776	3.8372	3.4212	3.0758	2.7860
9	8.5660	8.1622	7.7861	7.4353	7.1078	6.8017	6.5152	6.2469	5.9952	5.7590	5.3282	4.9464	4.7716	4.6065	4.3030	4.0310	3.5655	3.1842	2.8681
10	9.4713	8.9826	8.5302	8.1109	7.7217	7.3601	7.0236	6.7101	6.4177	6.1446	5.6502	5.2161	5.0188	4.8332	4.4941	4.1925	3.6819	3.2689	2.9304
11	10.3676	9.7868	9.2526	8.7605	8.3064	7.8869	7.4987	7.1390	6.8052	6.4951	5.9377	5.4527	5.2337	5.0286	4.6560	4.3271	3.7757	3.3351	2.9776
12	11.2551	10.5753	9.9540	9.3851	8.8633	8.3838	7.9427	7.5361	7.1607	6.8137	6.1944	5.6603	5.4206	5.1971	4.7932	4.4392	3.8514	3.3868	3.0133
13	12.1337	11.3484	10.6350	9.9856	9.3936	8.8527	8.3577	7.9038	7.4869	7.1034	6.4235	5.8424	5.5831	5.3423	4.9095	4.5327	3.9124	3.4272	3.0404
14	13.0037	12.1062	11.2961	10.5631	9.8986	9.2950	8.7455	8.2442	7.7862	7.3667	6.6282	6.0021	5.7245	5.4675	5.0081	4.6106	3.9616	3.4587	3.0609
15	13.8651	12.8493	11.9379	11.1184	10.3797	9.7122	9.1079	8.5595	8.0607	7.6061	6.8109	6.1422	5.8474	5.5755	5.0916	4.6755	4.0013	3.4834	3.0764
16	14.7179	13.5777	12.5611	11.6523	10.8378	10.1059	9.4466	8.8514	8.3126	7.8237	6.9740	6.2651	5.9542	5.6685	5.1624	4.7296	4.0333	3.5026	3.0882
17	15.5623	14.2919	13.1661	12.1657	11.2741	10.4773	9.7632	9.1216	8.5436	8.0216	7.1196	6.3729	6.0472	5.7487	5.2223	4.7746	4.0591	3.5177	3.0971
18	16.3983	14.9920	13.7535	12.6593	11.6896	10.8276	10.0591	9.3719	8.7556	8.2014	7.2497	6.4674	6.1280	5.8178	5.2732	4.8122	4.0799	3.5294	3.1039
19	17.2260	15.6785	14.3238	13.1339	12.0853	11.1581	10.3356	9.6036	8.9501	8.3649	7.3658	6.5504	6.1982	5.8775	5.3162	4.8435	4.0967	3.5386	3.1090
20	18.0456	16.3514	14.8775	13.5903	12.4622	11.4699	10.5940	9.8181	9.1285	8.5136	7.4694	6.6231	6.2593	5.9288	5.3527	4.8696	4.1103	3.5458	3.1129
25	22.0232	19.5235	17.4131	15.6221	14.0939	12.7834	11.6536	10.6748	9.8226	9.0770	7.8431	6.8729	6.4641	6.0971	5.4669	4.9476	4.1474	3.5640	3.1220
30	25.8077	22.3965	19.6004	17.2920	15.3725	13.7648	12.4090	11.2578	10.2737	9.4269	8.0552	7.0027	6.5660	6.1772	5.5168	4.9789	4.1601	3.5693	3.1242
40	32.8347	27.3555	23.1148	19.7928	17.1591	15.0463	13.3317	11.9246	10.7574	9.7791	8.2438	7.1050	6.6418	6.2335	5.5482	4.9966	4.1659	3.5712	3.1250
50	39.1961	31.4236	25.7298	21.4822	18.2559	15.7619	13.8007	12.2335	10.9617	9.9148	8.3045	7.1327	6.6605	6.2463	5.5541	4.9995	4.1666	3.5714	3.1250
60	44.9550	34.7609	27.6756	22.6235	18.9293	16.1614	14.0392	12.3766	11.0480	9.9672	8.3240	7.1401	6.6651	6.2402	5.5553	4.9999	4.1667	3.5714	3.1250