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CIFA PART II SECTION 3

CORPORATE FINANCE

WEDNESDAY: 23 May 2018. **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) In the context of Islamic finance, summarise two differences between "Musharakah" and "Mudarabah". (2 marks)

(b) Explain five reasons why companies might decide to undertake a corporate restructuring exercise. (5 marks)

(c) Pafeka Ltd. is considering expanding its operations into digital music devices. Pafeka Ltd. anticipates to have an initial investment of Sh.1.3 million and, at best, an operational life of 3 years for the project. Pafeka Ltd.'s management team expects to have several probable outcomes over the life of the project, which it has labelled as either "success" or "failure". Accordingly, Pafeka Ltd. anticipates that in the first year of operations, there is a 65% chance of "success" with after-tax cash flow of Sh.800,000 or a 35% chance of failure with Sh.1,000 after-tax cash flow.

If the project "succeeds" in year 1, Pafeka Ltd. expects to have three probable outcomes regarding after-tax net cash flows in the second year. These outcomes are Sh.2.2 million, Sh.1.8 million or Sh.1.5 million with probabilities of 0.30, 0.50 and 0.20 respectively. In the third and final year of operation, the after-tax net cash flows are expected to be either Sh.35,000 or Sh.55,000 less than they were in year 2, with an equal chance of occurrence.

If on the other hand, the project "fails" in year 1, there is a 60% chance that it will produce after-tax net cash flow of only Sh.1,500 in year 2 and year 3. There is also a 40% chance that it will totally fail and Pafeka Ltd. will earn nothing in year 2, forcing it to get out of this line of business, terminating the project, and resulting in no after-tax net cash flows in year 3.

The opportunity cost of capital for Pafeka Ltd. is 10%.

Required:

(i) The project's expected net present value (NPV) using the decision tree criterion. (12 marks)

(ii) Advise Pafeka Ltd. on whether to undertake the project based on results obtained in (c) (i) above. (1 mark)

(Total: 20 marks)

QUESTION TWO

(a) In the context of mergers and acquisitions, argue three cases against each of the following valuation techniques which could be used by financial analysts to value a target company:

(i) Discounted cash flow analysis. (3 marks)

(ii) Comparable company analysis. (3 marks)

(b) Ishiara Ltd. and Tunya Ltd. are considering to have a friendly acquisition of Tunya Ltd. by Ishiara Ltd. The board of directors of both companies have informally agreed upon a transaction value of Sh.12.00 per share of Tunya Ltd. but are currently negotiating alternative forms of payment. Mate Ragwa, a CIFA graduate practising in the mergers and acquisitions sector has been consulted by Tunya Ltd. to advise on this acquisition. He is evaluating the following three alternative offers presented by Ishiara Ltd.:

- **Cash offer:** Ishiara Ltd. will pay Sh.12.00 per share of Tunya Ltd.
- **Share offer:** Ishiara Ltd. will give Tunya shareholders 0.8 shares of Ishiara Ltd. per share of Tunya Ltd.
- **Mixed offer:** Ishiara Ltd. will pay Sh.6.00 plus 0.4 shares of Ishiara Ltd. per share of Tunya Ltd.

Mate Ragwa estimates that the merger of the two companies will result in economies of scale with a net present value of Sh.90 million.

Additional information:

1. The pre-merger share price for Ishiara Ltd. and Tunya Ltd. are Sh.15.00 and Sh.10.00 respectively.
2. The number of shares outstanding for Ishiara Ltd. and Tunya Ltd. are 75 million and 30 million respectively.
3. Pre-merger market value of Ishiara Ltd. and Tunya Ltd. are Sh.1,125 million and Sh.300 million respectively.

Hint:

Target shareholders gain = Premium = $P_T - V_T$

Acquirers gain = $S - (P_T - V_T)$

Post-merger value of the combined firm, V_{A*} = $V_A + V_T + S - C$

Where: P_T = Price paid for the target company

V_T = Pre-merger value of the target company

S = Synergies created by the business combination

V_A = Pre-merger value of the acquirer

C = Cash paid to target shareholders

Required:

Using suitable computations, identify the offer that Mate Ragwa should recommend to Tunya Ltd.'s board of directors. (14 marks)

(Total: 20 marks)

QUESTION THREE

(a) (i) Highlight three objectives of short-term borrowing strategy in corporate finance. (3 marks)

(ii) Explain three factors that a corporate firm should consider as part of its short-term borrowing strategies. (3 marks)

(iii) Samuel Rotich, the Chief Finance Officer (CFO) of Manda Ltd. is tasked to select one of the following options as the best offer for borrowing Sh.5,000,000 for one month:

Option 1: Drawing down on a line of credit at a rate of 6.5 per cent per annum with a 0.5 percent commitment fee on the full amount with no compensation balances.

Option 2: A bankers acceptance at a rate of 6.75 per cent per annum, an all-inclusive rate.

Option 3: A commercial paper at a rate of 6.5 per cent per annum with a dealer's commission of 0.125 per cent and a backup line cost of 0.25 per cent, both of which would be assessed on the Sh.5,000,000 of commercial paper issued.

Required:

Advise Samuel Rotich on the form of borrowing that would result in the lowest cost of credit. (6 marks)

(b) Mavuno Ltd. has 10 million outstanding ordinary shares which are currently trading at Sh.15 per share and with an equity beta of 1.2. Mavuno Ltd. has additional 20,000 outstanding bonds with a 6% coupon rate payable semi-annually and due in 10 years. The bonds are rated BBB. Currently, the credit spread for BBB rated companies is 1.5% over equivalent maturity government debt. The current yield on 10-year government bond is 4%, compounded semi-annually. The risk-free rate is 2.5% and the market risk premium is 6.5%. The company has a 30% tax rate.

Required:

(i) Mavuno Ltd.'s weighted average cost of capital (WACC). (5 marks)

(ii) Mavuno Ltd.'s unlevered beta. (3 marks)

(Total: 20 marks)

QUESTION FOUR

(a) (i) Nobel prize-winning economists Franco Modigliani and Merton Miller argued the important theory that, given certain assumptions, a company's choice of capital structure does not affect its value (Modigliani and Miller, 1958).

Required:

With respect to the above statement, outline five assumptions of capital structure irrelevance proposition developed by Modigliani and Miller. (5 marks)

(ii) Discuss the "static trade-off theory of capital structure". (3 marks)

(b) Highlight three challenges that could be faced by principals confronted with agency problems. (3 marks)

(c) Nyamarende Ltd. has invested Sh.1,350,000 in a new publishing machine. The company would wish to estimate the number of years the plant should be operated.

The discount rate is 12%. The value of cash flows and sales to be generated from the plant are as follows:

Year	Cash inflows Sh."000"	Cash outflows Sh."000"	Sales value Sh."000"
1	1,710	990	855
2	1,620	1,080	630
3	1,530	1,170	405
4	1,440	1,260	180

Required:
Using the equivalent annual income approach, calculate:

(i) The optimal economic lifetime if the plant and equipment are not to be replaced. (4 marks)

(ii) The optimal economic lifetime if the plant and equipment are to be replaced in perpetuity. (5 marks)

(Total: 20 marks)

QUESTION FIVE

(a) With reference to a firm's dividend policy:

(i) Outline two assumptions of the Walter's Model. (2 marks)

(ii) Examine three reasons why a company might decide to issue a share repurchase. (3 marks)

(b) Alpha Limited expects with some degree of certainty to generate the following net income and to incur the following capital expenditure during the next five years:

Year:	1	2	3	4	5
Net income (Sh."000")	200	150	200	230	160
Capital expenditure (Sh."000")	100	150	300	150	200

Currently, the company has 100 million outstanding ordinary shares and pays Sh.1.00 dividend per share (DPS) annually. The company's target debt/equity ratio is 0.25.

Required:

(i) The dividend per share (DPS) and total external financing from the issue of debt and issue of new equity shares required in each year if dividend policy is treated as a residual decision. (3 marks)

(ii) DPS and the amount of debt and equity to be issued in each year if a dividend payout ratio of 50% is maintained. (3 marks)

(iii) The amount of debt and the new equity to be issued in each year if the present DPS is maintained. (2 marks)

(c) You are a financial analyst incharge of project evaluation. Seme Ltd., a newly established company has consulted you to analyse six projects which it is intending to undertake. The company's management insists on using the payback period as the criterion to evaluate its projects, though you differ with them. To convince the management of Seme Ltd. against using this criterion, you have provided them with the following table showing the cash flows, payback periods, and net present values (NPVs) for the six projects namely U, V, W, X, Y and Z. For all the projects, the required rate of return is 10 per cent.

Cash flows (Sh. "million")						
Year	Project U	Project V	Project W	Project X	Project Y	Project Z
0	−1,000	−1,000	−1,000	−1,000	−1,000	−1,000
1	1,000	100	400	500	400	500
2		200	300	500	400	500
3		300	200	500	400	10,000
4		400	100		400	
5		500	500		400	
Payback period	1.0	4.0	4.0	2.0	2.5	2.0
NPV	−90.1	65.26	140.60	243.43	516.31	7,380.92

Required:
Giving appropriate reasons, justify why the payback period criterion provides misleading information about the following:

(i) Project U. (1 mark)

(ii) Project V versus project W. (2 marks)

(iii) Project X versus project Y. (2 marks)

(iv) Project X versus project Z. (2 marks)

(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:

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

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