

**CIFA PART II SECTION 3**

**CORPORATE FINANCE**

**WEDNESDAY: 1 September 2021.**

**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) Safariland Ltd. is a large company listed on a major Securities Exchange. In recent years, the board of Safariland Ltd. has been criticised for weak corporate governance and two of the company's non-executive directors have just resigned. A recent story in the financial media has criticised the performance of Safariland Ltd. and claims that the company is failing to satisfy the objectives of its key stakeholders.

**Required:**

In relation to the above statement, discuss five ways of encouraging managers to achieve stakeholder objectives. (5 marks)

- (b) The following is the capital structure of Ndege Ltd. as at 31 December 2020:

	Sh. "million"
Ordinary share capital at Sh.10 each	400
Retained earnings	200
10% preference share capital at Sh.20	100
12% debentures at Sh.100	<u>200</u>
	<u>900</u>

**Additional information:**

1. The corporate tax is 30%.
2. Preference shares were issued ten years ago and are still trading at par.
3. The debentures have a ten year maturity period. They are currently selling at Sh.90 in the market.
4. The ordinary shares are trading at Sh.40. Dividend paid last year was Sh.5 and is expected to grow at a rate of 5% per annum.

**Required:**

The weighted average cost of capital (WACC) of the company using market value weights. (7 marks)

- (c) ABC Limited is evaluating two mutually exclusive projects. Project A will cost Sh.1,000,000 now and will generate cash flows of Sh.500,000 each year over its useful life of four years. Project B will cost Sh.2,500,000 and will generate cash flows of Sh.1,200,000 over its useful life of three years.

The cost of capital is 12%.

**Required:**

Advise the management of the company on the project to undertake using the equivalent annual net present value (EANPV) approach. (4 marks)

- (d) A company is considering two mutually exclusive projects. The company uses the certainty equivalent approach.

The estimated cash flow and certainty equivalents for each project are as follows:

	<b>Project 1</b>		<b>Project 2</b>	
	<b>Cash flows (Sh)</b>	<b>Certainty Equivalents</b>	<b>Cash flows (Sh)</b>	<b>Certainty Equivalents</b>
0	-30,000	1.00	-40,000	1.00
1	15,000	0.95	25,000	0.90
2	15,000	0.85	20,000	0.80
3	10,000	0.70	15,000	0.70
4	10,000	0.65	10,000	0.60

The risk free rate is 5%.

**Required:**

Advise the company on the project to undertake using the certainty equivalent method.

(4 marks)

**(Total: 20 marks)**

**QUESTION TWO**

Pendo Limited is considering investing Sh.5,750,000 in a new machine to produce product "X". The expected life of the machine is five years. The machine will have a zero salvage value at the end of five years. It is expected that 20,000 units of product "X" will be sold each year at a selling price of Sh.345 per unit. Variable production costs are expected to be Sh.189.75 per unit, while incremental fixed cost, mainly the wages of a maintenance engineer, are expected to be Sh.1,150,000 per year.

Pendo Limited uses a discount rate of 12% for investment appraisal purposes and expects investment projects to recover their initial investment within two years.

**Required:**

- (a) Evaluate the sensitivity of the project's net present value to change in the following project variables:

- (i) Sales volume. (2 marks)
- (ii) Sales price. (2 marks)
- (iii) Variable cost. (2 marks)

- (b) Upon further investigation, it is found that there is a significant chance that the expected sales volume of product "X" of 20,000 units per year will not be achieved. The sales manager of Pendo Limited suggests that sales volumes could depend on expected economic states that could be assigned the following probabilities:

<b>Economic state</b>	<b>Poor</b>	<b>Normal</b>	<b>Good</b>
Probability	0.30	0.60	0.10
Annual sales volume (units)	17,500	20,000	22,500

**Required:**

- (i) Calculate and comment on the Expected Net Present Value (ENPV) of the project. (6 marks)
  - (ii) Describe three advantages of sensitivity analysis in capital budgeting. (3 marks)
- (c) Azera Limited is being evaluated as an acquisition target. Zablon Okeyo, a financial analyst at Wetu Capital, has estimated the following values for the year 2022:
- Net income Sh.300 million
  - Net interest after tax Sh.100 million
  - Change in deferred taxes Sh.25 million
  - Depreciation Sh.200 million
  - Change in net working capital Sh.30 million
  - Capital expenditure (CAPEX) Sh.250 million

**Required:**

The firm's estimated free cash flow (FCF).

(5 marks)

**(Total: 20 marks)**

### QUESTION THREE

(a) In relation to corporate growth and restructuring:

- (i) Explain two reasons for divestments. (4 marks)
- (ii) Discuss two primary ways of growth of a business organisation. (4 marks)

(b) (i) Examine two criticisms of the Modigliani and Miller (MM) hypothesis without taxes. (4 marks)

(ii) Mashariki Ltd. is currently an all equity financed company. The firm's current capital structure is given as follows:

	<b>Sh. "000"</b>
Ordinary share capital (Sh.20 each)	50,000
Retained profit	30,000
Share premium	<u>10,000</u>
	<u>90,000</u>

**Additional information:**

1. The firm's ordinary shares are currently trading at the Securities Exchange for Sh.25 each.
2. The cost of equity for an all equity financed firm is 12%.
3. The firm is considering acquisition of a 16% irredeemable debenture capital to raise Sh.20 million in order to finance an expansion. This will effectively change the firm's status from unlevered to a levered firm.
4. The corporation tax rate is 30%.

**Required:**

Using the Modigliani and Miller (MM) proposition in a world of corporation taxes, advise on whether the firm should change its capital structure. (8 marks)

**(Total: 20 marks)**

### QUESTION FOUR

(a) Highlight six potential pitfalls that a merger analyst should consider when reviewing acquisition transactions. (6 marks)

(b) KK Limited is considering taking over Oak Limited, a firm in the same industry in order to consolidate their market share.

Given below are financial data for both firms:

	<b>KK Limited</b>	<b>Oak Limited</b>
Number of issued ordinary shares	20 million	10 million
Earnings per share (EPS)	Sh.2.5	Sh.1.5
Market price per share (MPS)	Sh.50	Sh.30

Two alternative financing options available for KK Limited are given as follows:

**Option 1**

Issue new ordinary shares to the shareholders of Oak Limited in exchange for their current shareholding. A maximum exchange ratio of 0.5 shall be applied.

**Option 2**

Issue 20 units of 10% debenture for every 400 existing ordinary shares. The par value for each unit of debenture is Sh.10.

Corporation tax rate is 30%.

**Required:**

- (i) Post acquisition earnings per share (EPS) under both financing options. (6 marks)
- (ii) Using the results obtained (b) (i) above, recommend the preferable financing option. (2 marks)

- (c) Company A, a levered company and Company B, an unlevered company are identical in every respect except that Company A has 6% Sh.200,000 debt outstanding. Jacob Omondi holds Sh.2,000 worth of the Company A shares. As per the net income (NI) approach, the valuation of the two firms is provided below:

	Company A	Company B
	Sh.	Sh.
Net operating income (NOI)	60,000	60,000
Total cost of debt	<u>12,000</u>	<u>0</u>
Net earnings	48,000	60,000
Equity capitalisation rate	0.111	0.100
Market value of shares	432,000	600,000
Market value of debt	<u>200,000</u>	<u>0</u>
Total value of the firm	<u>632,000</u>	<u>600,000</u>

**Required:**

Demonstrate how Jacob Omondi will reduce his outlay to earn the same return through the use of arbitrage.

(6 marks)

**(Total: 20 marks)**

**QUESTION FIVE**

- (a) Describe four main principles of Islamic Finance. (4 marks)
- (b) Outline four factors that could affect the level of working capital requirements of a business. (4 marks)
- (c) Kimbo Limited wishes to improve its working capital management as part of an overall cost cutting strategy to increase profitability. Two areas the company has been considering are working capital funding strategy and inventory management. Kimbo Limited currently follows a policy of financing working capital needs as much as possible from long-term sources of finance, such as equity. The company has been considering its inventory management and has been looking specifically at component A.

**Current position:**

Kimbo Limited purchases 1,500,000 units of component A each year and consumes the component at a constant rate. The purchase price of component A is Sh.14 per unit. The company places 12 orders each year. Inventory of component A in the financial statements of Kimbo Limited is equal to average inventory of component A.

The holding cost of component A, excluding finance costs is Sh.0.21 per unit per year. The ordering cost of component A is Sh.252 per order.

**Economic order quantity (EOQ):**

Kimbo Limited wishes to investigate whether basing ordering component A on the economic order quantity will reduce costs.

**Bulk order discount:**

The supplier of component A has offered Kimbo Limited a discount of 0.5% on the purchase price of component A provided the company orders 250,000 units per order.

**Additional information:**

Kimbo Limited has no cash but has access to short-term finance (overdraft facility) at an interest rate of 3% per year. This overdraft currently stands at Sh.550,000

**Required:**

- (i) The annual holding and ordering costs of Kimbo Limited's current inventory management system. (2 marks)
- (ii) The financial effect of adopting the economic order quantity (EOQ) as the basis for ordering inventory. (5 marks)
- (iii) The financial effect of accepting the bulk order discount. (4 marks)
- (iv) Recommend which option should be selected by Kimbo Limited based on your results in (c) (i) - (iii) above. (1 mark)

**(Total: 20 marks)**



Present Value Interest factor of 1 Received at the End of  $n$  Periods at  $r$  Percent:

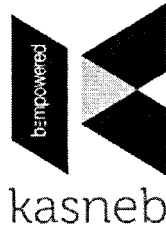
$$PVIF_{r,n} = 1 / (1+r)^n = (1+r)^{-n}$$

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	20%	24%	25%	30%
1	0.9901	0.9804	0.9709	0.9615	0.9524	0.9434	0.9346	0.9259	0.9174	0.9091	0.9009	0.8929	0.8850	0.8772	0.8696	0.8621	0.8333	0.8065	0.8000	0.7692
2	0.9803	0.9612	0.9426	0.9246	0.9070	0.8900	0.8734	0.8573	0.8417	0.8264	0.8116	0.7972	0.7831	0.7695	0.7561	0.7432	0.6944	0.6504	0.6400	0.5917
3	0.9706	0.9423	0.9151	0.8890	0.8638	0.8396	0.8163	0.7938	0.7722	0.7513	0.7312	0.7118	0.6931	0.6750	0.6575	0.6407	0.5787	0.5245	0.5120	0.4552
4	0.9610	0.9238	0.8885	0.8548	0.8227	0.7921	0.7629	0.7350	0.7084	0.6830	0.6587	0.6355	0.6133	0.5921	0.5718	0.5523	0.4823	0.4230	0.4096	0.3501
5	0.9515	0.9057	0.8626	0.8219	0.7835	0.7473	0.7130	0.6806	0.6499	0.6209	0.5935	0.5674	0.5428	0.5194	0.4972	0.4761	0.4019	0.3411	0.3277	0.2693
6	0.9420	0.8880	0.8375	0.7903	0.7462	0.7050	0.6663	0.6302	0.5963	0.5645	0.5346	0.5066	0.4803	0.4556	0.4323	0.4104	0.3349	0.2751	0.2621	0.2072
7	0.9327	0.8706	0.8131	0.7599	0.7107	0.6651	0.6227	0.5835	0.5470	0.5132	0.4817	0.4523	0.4251	0.3996	0.3759	0.3538	0.2791	0.2218	0.2097	0.1594
8	0.9235	0.8535	0.7894	0.7307	0.6768	0.6274	0.5820	0.5403	0.5019	0.4665	0.4339	0.4039	0.3762	0.3506	0.3269	0.3050	0.2326	0.1789	0.1678	0.1226
9	0.9143	0.8368	0.7664	0.7026	0.6446	0.5919	0.5439	0.5002	0.4604	0.4241	0.3909	0.3606	0.3329	0.3075	0.2843	0.2630	0.1938	0.1443	0.1342	0.0943
10	0.9053	0.8203	0.7441	0.6756	0.6139	0.5584	0.5083	0.4632	0.4224	0.3855	0.3522	0.3220	0.2946	0.2697	0.2472	0.2267	0.1615	0.1164	0.1074	0.0725
11	0.8963	0.8043	0.7224	0.6496	0.5847	0.5268	0.4751	0.4289	0.3875	0.3505	0.3173	0.2875	0.2607	0.2366	0.2149	0.1954	0.1346	0.0938	0.0859	0.0558
12	0.8874	0.7885	0.7014	0.6246	0.5568	0.4970	0.4440	0.3971	0.3555	0.3186	0.2858	0.2567	0.2307	0.2076	0.1869	0.1685	0.1122	0.0757	0.0687	0.0429
13	0.8787	0.7730	0.6810	0.6006	0.5303	0.4688	0.4150	0.3677	0.3262	0.2897	0.2575	0.2292	0.2042	0.1821	0.1625	0.1452	0.0935	0.0610	0.0550	0.0330
14	0.8700	0.7579	0.6611	0.5755	0.5051	0.4423	0.3878	0.3405	0.2992	0.2633	0.2320	0.2046	0.1807	0.1597	0.1413	0.1252	0.0779	0.0492	0.0440	0.0254
15	0.8613	0.7430	0.6419	0.5553	0.4810	0.4173	0.3624	0.3152	0.2745	0.2394	0.2090	0.1827	0.1599	0.1401	0.1229	0.1079	0.0649	0.0397	0.0352	0.0195
16	0.8528	0.7284	0.6232	0.5339	0.4581	0.3936	0.3387	0.2919	0.2519	0.2176	0.1883	0.1631	0.1415	0.1229	0.1069	0.0930	0.0541	0.0320	0.0281	0.0150
17	0.8444	0.7142	0.6050	0.5134	0.4363	0.3714	0.3166	0.2703	0.2311	0.1978	0.1696	0.1456	0.1252	0.1078	0.0929	0.0802	0.0451	0.0258	0.0225	0.0116
18	0.8360	0.7002	0.5874	0.4936	0.4155	0.3503	0.2959	0.2502	0.2120	0.1799	0.1528	0.1300	0.1108	0.0946	0.0808	0.0691	0.0376	0.0208	0.0180	0.0089
19	0.8277	0.6864	0.5703	0.4746	0.3957	0.3305	0.2765	0.2317	0.1945	0.1635	0.1377	0.1161	0.0981	0.0829	0.0703	0.0596	0.0313	0.0168	0.0144	0.0068
20	0.8195	0.6730	0.5537	0.4564	0.3769	0.3118	0.2584	0.2145	0.1784	0.1486	0.1240	0.1037	0.0868	0.0728	0.0611	0.0514	0.0261	0.0135	0.0115	0.0053
21	0.8114	0.6598	0.5375	0.4388	0.3589	0.2942	0.2415	0.1987	0.1637	0.1351	0.1117	0.0926	0.0768	0.0638	0.0531	0.0443	0.0217	0.0109	0.0092	0.0040
22	0.8034	0.6468	0.5219	0.4220	0.3418	0.2775	0.2257	0.1839	0.1502	0.1228	0.1007	0.0826	0.0680	0.0560	0.0462	0.0382	0.0181	0.0088	0.0074	0.0031
23	0.7954	0.6342	0.5067	0.4057	0.3256	0.2618	0.2109	0.1703	0.1378	0.1117	0.0907	0.0738	0.0601	0.0491	0.0402	0.0329	0.0151	0.0071	0.0059	0.0024
24	0.7876	0.6217	0.4919	0.3901	0.3101	0.2470	0.1971	0.1577	0.1264	0.1015	0.0817	0.0659	0.0532	0.0431	0.0349	0.0284	0.0126	0.0057	0.0047	0.0018
25	0.7798	0.6095	0.4776	0.3751	0.2953	0.2330	0.1842	0.1460	0.1160	0.0923	0.0736	0.0588	0.0471	0.0378	0.0304	0.0245	0.0105	0.0046	0.0038	0.0014
30	0.7419	0.5521	0.4120	0.3083	0.2314	0.1741	0.1314	0.0994	0.0754	0.0573	0.0437	0.0334	0.0256	0.0196	0.0151	0.0116	0.0042	0.0016	0.0012	*
35	0.7059	0.5000	0.3554	0.2534	0.1813	0.1301	0.0937	0.0676	0.0490	0.0356	0.0259	0.0189	0.0139	0.0102	0.0075	0.0055	0.0017	0.0005	*	*
40	0.6717	0.4529	0.3066	0.2083	0.1420	0.0972	0.0668	0.0460	0.0318	0.0221	0.0154	0.0107	0.0075	0.0053	0.0037	0.0026	0.0007	*	*	*
50	0.6080	0.3715	0.2281	0.1407	0.0872	0.0543	0.0339	0.0213	0.0134	0.0085	0.0054	0.0035	0.0022	0.0014	0.0009	0.0006	*	*	*	*

Present Value Interest factors for Annuity of 1 Discounted at  $r$  Percent for  $n$  Periods:

$$PVIFA_{r,n} = [1 - 1/(1+r)^n] / r$$

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	20%	24%	25%	30%
1	0.9901	0.9804	0.9709	0.9615	0.9524	0.9434	0.9346	0.9259	0.9174	0.9091	0.9009	0.8929	0.8850	0.8772	0.8696	0.8621	0.8333	0.8065	0.8000	0.7692
2	1.9704	1.9416	1.9135	1.8861	1.8594	1.8334	1.8080	1.7833	1.7591	1.7355	1.7125	1.6901	1.6681	1.6467	1.6257	1.6052	1.5278	1.4568	1.4400	1.3609
3	2.9410	2.8839	2.8286	2.7751	2.7232	2.6730	2.6243	2.5771	2.5313	2.4869	2.4437	2.4018	2.3612	2.3216	2.2832	2.2459	2.1065	1.9813	1.9520	1.8161
4	3.9020	3.8077	3.7171	3.6299	3.5460	3.4651	3.3872	3.3121	3.2397	3.1699	3.1024	3.0373	2.9745	2.9137	2.8550	2.7982	2.5887	2.4043	2.3616	2.1662
5	4.8534	4.7135	4.5797	4.4518	4.3295	4.2124	4.1002	3.9927	3.8897	3.7908	3.6959	3.6048	3.5172	3.4331	3.3522	3.2743	2.9906	2.7454	2.6893	2.4356
6	5.7955	5.6014	5.4172	5.2421	5.0757	4.9173	4.7665	4.6229	4.4859	4.3553	4.2305	4.1114	3.9975	3.8887	3.7845	3.6847	3.3255	3.0205	2.9514	2.6427
7	6.7282	6.4720	6.2303	6.0021	5.7864	5.5824	5.3893	5.2064	5.0330	4.8684	4.7122	4.5638	4.4226	4.2883	4.1604	4.0386	3.6046	3.2423	3.1611	2.8021
8	7.6517	7.3255	7.0197	6.7327	6.4632	6.2098	5.9713	5.7466	5.5348	5.3349	5.1461	4.9676	4.7988	4.6389	4.4873	4.3436	3.8372	3.4212	3.3289	2.9247
9	8.5660	8.1622	7.7861	7.4353	7.1078	6.8017	6.5152	6.2489	5.9952	5.7590	5.5370	5.3282	5.1317	4.9464	4.7716	4.6065	4.0310	3.5655	3.4631	3.0190
10	9.4713	8.9826	8.5302	8.1109	7.7217	7.3601	7.0236	6.7101	6.4177	6.1446	5.8892	5.6502	5.4262	5.2161	5.0188	4.8332	4.1925	3.6819	3.5705	3.0915
11	10.368	9.7868	9.2526	8.7605	8.3064	7.8869	7.4987	7.1390	6.8052	6.4951	6.2065	5.9377	5.6869	5.4527	5.2337	5.0286	4.3271	3.7757	3.6564	3.1473
12	11.255	10.575	9.9540	9.3851	8.8633	8.3838	7.9427	7.5361	7.1607	6.8137	6.4924	6.1944	5.9176	5.6603	5.4206	5.1971	4.4392	3.8514	3.7251	3.1903
13	12.134	11.348	10.635	9.9856	9.3936	8.8527	8.3577	7.9038	7.4869	7.1034	6.7499	6.4235	6.1218	5.8424	5.5831	5.3423	4.5327	3.9124	3.7801	3.2233
14	13.004	12.106	11.296	10.563	9.8986	9.2950	8.7455	8.2442	7.7862	7.3667	6.9819	6.6282	6.3025	6.0021	5.7245	5.4675	4.6106	3.9616	3.8241	3.2487
15	13.865	12.849	11.938	11.118	10.380	9.7122	9.1079	8.5595	8.0607	7.6061	7.1909	6.8109	6.4624	6.1422	5.8474	5.5755	4.6755	4.0013	3.8593	3.2682
16	14.718	13.578	12.561	11.652	10.838	10.106	9.4466	8.8514	8.3126	7.8237	7.3792	6.9740	6.6039	6.2651	5.9542	5.6685	4.7296	4.0333	3.8874	3.2832
17	15.562	14.292	13.166	12.166	11.274	10.477	9.7632	9.1216	8.5436	8.0216	7.5488	7.1196	6.7291	6.3729	6.0472	5.7487	4.7746	4.0591	3.9099	3.2948
18	16.398	14.992	13.754	12.659	11.690	10.828	10.059	9.3719	8.7556	8.2014	7.7016	7.2497	6.8399	6.4674	6.1280	5.8178	4.8122	4.0799	3.9279	3.3037
19	17.226	15.678	14.324	13.134	12.085	11.158	10.336	9.6036	8.9501	8.3649	7.8393	7.3658	6.9380	6.5504	6.1982	5.8775	4.8435	4.0967	3.9424	3.3105
20	18.046	16.351	14.877	13.590	12.462	11.470	10.594	9.8181	9.1285	8.5136	7.9633	7.4694	7.0248	6.6231	6.2593	5.9288	4.8696	4.1103	3.9539	3.3158
21	18.857	17.011	15.415	14.029	12.821	11.764	10.836	10.017	9.2922	8.6487	8.0751	7.5620	7.1016	6.6870	6.3125	5.9731	4.8913	4.1212	3.9631	3.3198
22	19.660	17.658	15.937	14.451	13.163	12.042	11.061	10.201	9.4424	8.7715	8.1757	7.6446	7.1695	6.7429	6.3587	6.0113	4.9094	4.1300	3.9705	3.3230
23	20.456	18.292	16.444	14.857	13.489	12.303	11.272	10.371	9.5802	8.8832	8.2664	7.7184	7.2297	6.7921	6.3988	6.0442	4.9245	4.1371	3.9764	3.3254
24	21.243	18.914	16.936	15.247	13.799	12.550	11.469	10.529	9.7066	8.9847	8.3481	7.7843	7.2829	6.8351	6.4338	6.0726	4.9371	4.1428	3.9811	3.3272
25	22.023	19.523	17.413	15.622	14.094	12.783	11.654	10.675	9.8226	9.0770	8.4217	7.8431	7.3300	6.8729	6.4641	6.0971	4.9476	4.1474	3.9849	3.3286
26	22.803	20.203	18.093	16.202	14.674	13.363	12.234	11.255	10.402	9.6567	8.9901	8.4015	7.8800	7.3575	6.8903	6.4711	5.3176	4.5187	4.3698	3.7300
27	23.583	20.983	18.873	16.982	15.454	14.143	13.014	12.035	11.182	10.436	9.7701	9.1815	8.6500	8.1275	7.6603	7.2411	6.0891	5.2902	5.1413	3.7314
28	24.363	21.763	19.653	17.762	16.234	14.923	13.794	12.815	11.962	11.216	10.5501	9.9615	9.4300	8.9075	8.4403	8.0211	6.9101	6.1112	5.9623	3.7328
29	25.143	22.543	20.433	18.542	17.014	15.703	14.574	13.595	12.742	11.996	11.3301	10.7415	10.2100	9.6875	9.2203	8.8011	7.7101	6.9112	6.7623	3.7342
30	25.908	23.308	21.198	19.327	17.579	16.268	15.139	14.160	13.307	12.561	11.8951	11.3065	10.7750	10.2525	9.7853	9.3661	8.2751	7.4762	7.3273	3.7356
31	26.688	24.088	21.978	20.107	18.368	17.058	15.929	14.950	14.107	13.361	12.6951	12.1065	11.5750	11.0525	10.5853	10.1661	9.0751	8.2762	8.1273	3.7370
32	27.468	24.868	22.758	20.887	19.148	17.838	16.709	15.730	14.887	14.144	13.4081	12.8205	12.2890	11.7665	11.2493	10.8301	9.7401	8.9412	8.7923	3.7384
33	28.248	25.648	23.538	21.667	19.928	18.618	17.489	16.510	15.667	14.824	14.0911	13.5605	13.0290	12.5065	11.9833	11.5641	10.4741	9.6752	9.5263	3.7398
34	29.028	26.428	24.318	22.447	20.708	19.398	18.269	17.290	16.447	15.601	14.8681	14.3315	13.7990	13.2765	12.7533	12.3341	11.2441	10.4462	10.2973	3.7412
35	29.808	27.208	25.098	23.227	21.488	20.178	19.049	18.070	17.227	16.481	15.6561	15.0225	14.4900	13.9675	13.4443	12.9251	11.8351	11.0362	10.8873	3.7426
36	30.108	25.489	21.832	18.908	16.547	14.621	13.035	11.717	10.612	9.6765	8.8786	8.1924	7.5979	7.0790	6.6231	6.2201	4.9929	4.1649	3.9987	3.3311
40	32.835	27.355	23.115	19.793	17.159	15.046	13.332	11.925	10.757	9.7791	8.9511	8.2438	7.6344	7.1050	6.6418	6.2335	4.9966	4.1659	3.9995	3.3332
50	39.196	31.424	25.730	21.482	18.256	15.762	13.801	12.233	10.962	9.9148	9.0417	8.3045	7.6752	7.1327	6.6605	6.2463	4.9995	4.1666	3.9999	3.3333



**CIFA PART II SECTION 3**  
**CORPORATE FINANCE**

**WEDNESDAY: 19 May 2021.**

**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) Jamii Ltd. has decided to purchase a new machine that costs Sh. 3 million. The machine will be worthless after three years and will be depreciated on a straight line basis.

Umoja Bank has offered Jamii Ltd. a three year loan of Sh.3 million. The repayment schedule is composed of three-yearly principal repayments of Sh.1 million and an interest charge at the rate of 12% per annum on the outstanding balance of the loan at the beginning of each year. The market wide rate of interest is 12% per annum. Both principal repayments and interest are due at the end of each year.

Pamoja leasing Ltd. offers to lease the same machine to Jamii Ltd. The lease payments of Sh.1.2 million per year are due at the end of each of the three years of the lease.

The corporation tax rate is 30%.

**Required:**

Advise Jamii Ltd. on whether it should lease the machine or buy it with bank financing. (8 marks)

- (b) Bidii Machinery Ltd. is planning to replace an old machine with a new one. The old machine had a cost of Sh.650,000 and the new one will cost Sh.780,000. The new machine will be depreciated on a straight line basis to zero over its five year useful life. It will have a salvage value of Sh.140,000 after five years.

The old machine is being depreciated at the rate of Sh.130,000 per year. It will be completely written off in three years. If it is not replaced now, it will have to be replaced in two years. It can be sold now for Sh.230,000; in two years, it will be worth Sh.90,000.

The new machine will save Bidii Machinery Ltd. Sh.125,000 per year in operating costs.

The corporate tax rate is 30% and the discount rate is 14%.

**Required:**

Determine whether the machine should be replaced now or Bidii Machinery Ltd. should wait to replace it in two years' time. (12 marks)

**(Total: 20 marks)**

**QUESTION TWO**

- (a) Explain three types of commonly used contracts in Islamic finance. (6 marks)
- (b) Explain two limitations of sensitivity analysis in capital investment decisions. (4 marks)
- (c) Bahati Ltd. sells Product A and Product B, with sales of both products occurring evenly throughout the year.

**Product A**

The annual demand for Product A is 300,000 units and an order for new inventory is placed each month. Each order costs Sh.267 to place. The cost of holding Product A in inventory is Sh.0.10 per unit per year. Buffer inventory equal to 40% of one month's demand is maintained.

## Product B

The annual demand for Product B is 456,000 units per year and Bahati Ltd. buys this product at Sh.1 per unit on 60 days credit. The supplier has offered an early settlement discount of 1% for settlement of invoices within 30 days.

### Additional information:

1. Bahati Ltd. finances working capital with short-term finance costing 5% per year.
2. There are 365 days in a year.

### Required:

- (i) For Product A, calculate the net cost or savings of introducing an ordering policy using the economic order quantity (EOQ). (6 marks)
  - (ii) Calculate the net value to Bahati Ltd. of accepting an early settlement discount for Product B. (4 marks)
- (Total 20 marks)**

## QUESTION THREE

- (a) Describe three financial strategies that could be used in corporate restructuring. (6 marks)
- (b) Faida Ltd. is analysing the possible acquisition of Hasara Ltd. Neither firm has debt. The forecast of Faida Ltd. shows that the purchase would increase its annual after-tax cash flow by Sh.600,000 indefinitely.

### Additional information:

1. The current market value of Hasara Ltd. is Sh.20 million.
2. The current market value of Faida Ltd. is Sh.5 million.
3. The appropriate discount rate for the incremental cash flow is 8%.
4. Faida Ltd. is trying to decide whether it should offer 25% of its stock or Sh.15 million in cash to Hasara Ltd.

### Required:

Determine which alternative Faida Ltd. should use. (6 marks)

- (c) Bamboo Ltd. has an equity cost of capital of 14.4% and a debt cost of capital of 6%. The firm maintains a debt-equity ratio of 1. Bamboo Ltd. is considering an expansion that will contribute Sh.4 million in free cash flows for the first year growing by 4% per year thereafter. The expansion will cost Sh.60 million and will be financed with Sh.40 million in new debt initially with a constant debt-equity ratio maintained thereafter.

Bamboo Ltd.'s corporate tax rate is 30%, the tax rate on interest income is 15% and the tax rate on equity income is 5%.

### Required:

Compute the value of the expansion using the adjusted present value (APV) method. (8 marks)

**(Total 20 marks)**

## QUESTION FOUR

- (a) Explain three disadvantages of using the internal rate of return in project appraisal. (6 marks)
- (b) A Ltd. and B Ltd. are firms operating in the same industry and are considered to be in the same risk class. Each firm generates operating profit (EBIT) of Sh.125 million in each year. The capital structures of both firms are as follows:

	A Ltd.	B Ltd.
	Sh. "million"	Sh. "million"
Equity (market value)	875	750
10% debt (Trading at par)	-	500
	<u>875</u>	<u>1,250</u>

Each of the two firms adopts a 100% payout ratio as its dividend policy. The corporation tax rate applicable is 30%.

**Required:**

Using the Modigliani and Merton Miller (MM) II proposition with corporation tax:

- (i) Determine the equilibrium market value for both firms. (2 marks)
  - (ii) Calculate the weighted average cost of capital (WACC) for both firms. (4 marks)
  - (iii) Comment on your observations in (b) (i) and (b) (ii) above. (2 marks)
- (c) Unda Ltd.'s current earnings per share (EPS) is Sh.12. The firm adopts a 40% dividend payout ratio as its dividend policy. The firm has in issue 10,000,000 ordinary shares. The existing capital structure of the firm is given as follows:

	Sh."000"
Ordinary share capital	800,000
Retained profit	300,000
Share premium	100,000
12% debt	400,000
	<u>1,600,000</u>

**Additional information:**

1. The firm's equity beta coefficient is 1.4.
2. The risk free rate of return is 10%.
3. The expected rate of return on market portfolio is 15%.

**Required:**

- (i) Using the capital asset pricing model (CAPM), determine the minimum required return on the company's equity shares. (2 marks)
  - (ii) Using the dividend growth model, compute the current value of each equity share. (4 marks)
- (Total: 20 marks)**

**QUESTION FIVE**

- (a) X Ltd. is considering acquiring Y Ltd. The following information relates to Y Ltd. for the next five years:

	Sh."million"				
Year	2022	2023	2024	2025	2026
Net sales	1,050	1,260	1,510	1,740	1,910
Cost of sales	735	882	1,057	1,218	1,337
Selling and distribution expenses	100	120	130	150	160
Interest expense	50	50	70	90	110

**Additional information:**

1. After the year 2026, cash flows available to X Ltd. from Y Ltd. are expected to grow by 10% per annum in perpetuity.
2. Y Ltd. will retain Sh.40 million for internal expansion every year.
3. The cost of capital is 18%.

**Required:**

- (i) Estimate the annual free cash flows. (4 marks)
  - (ii) Determine the maximum price payable by X Ltd. to acquire Y Ltd. (8 marks)
- (b) Timba Ltd. has an investment opportunity for which the initial cash outlay and future cash inflows are uncertain. The firm expects to delay implementation of the project for 1 year.

The cash outlay in year 1 and subsequent annual cash inflows and probability of their occurrence are summarised as follows:

Cash outlay		Annual cash inflows	
Probability	Amount Sh."000"	Probability	Amount Sh."000"
0.30	200,000	0.30	30,000
0.20	250,000	0.40	45,000
0.10	300,000	0.30	50,000
0.40	400,000		

**Additional information:**

1. The cost of capital is 12%.
2. Life expectancy of the project is ten years.
3. The salvage value is nil.

**Required:**

Using decision tree analysis:

- (i) Compute the expected net present value (NPV) of the project. (7 marks)
- (ii) Advise on the suitability or otherwise of the project. (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						

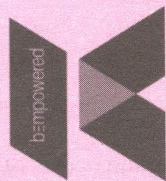
\* The factor is zero to four decimal places

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	4.8337	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





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CIFA PART II SECTION 3

CORPORATE FINANCE

THURSDAY: 26 November 2020.

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) (i) Explain the term “agency costs” as used in the context of corporate finance. (2 marks)
- (ii) Describe two ways in which agency costs relating to the conflict of interest between shareholders and bondholders may show up as real costs. (4 marks)

- (b) An analyst has gathered the following information using the latest financial year’s statements and interviews with managers of Chuma Limited:

Number of units produced and sold	1,000,000 units
Sales price per unit	Sh.108
Variable cost per unit	Sh.12
Fixed operating costs	Sh.22.5 million
Fixed financing expenses	Sh.9 million

Required:

Calculate the following for Chuma Limited at a sales volume of 1,000,000 units (ignore taxation):

- (i) Degree of operating leverage (DOL). (2 marks)
- (ii) Degree of financial leverage (DFL). (2 marks)
- (iii) Degree of total leverage (DTL). (2 marks)
- (c) Damiano Okulo is an analyst who is following the market performance of Mali Limited. He believes that Mali Limited is a likely takeover candidate and plans to estimate its value per share using comparable company analysis and comparable transaction analysis approaches. He gathers data on two companies which are comparable to Mali Limited, namely; Alphatech Limited and Betatech Limited. He believes that price-to-earnings, price-to-sales and price-to-book value per share of these companies should be used to value Mali Limited.

The relevant data for the three companies is provided below:

Valuation variables	Alphatech Limited	Betatech Limited	Mali Limited
	Sh.	Sh.	Sh.
Current market price per share	72.00	45.00	24.00
Earnings per share	2.00	1.50	1.00
Sales per share	32.00	22.50	16.00
Book value per share	18.00	10.00	8.00

Damiano Okulo also identifies one recent takeover transaction (Mavuno Limited) and analyses its takeover premium. Mavuno Limited is comparable to the possible transaction on Mali Limited. Mavuno Limited had a share price of Sh.44.40 per share prior to a website report of a takeover rumour. After the takeover rumour was reported, the share price rose to Sh.60.30 per share. Eventually, the takeover offer was accepted by Mavuno Limited’s shareholders for Sh.55.00 per share.

Required:

The best takeover price per share of Mali Limited.

(8 marks)

(Total: 20 marks)



## QUESTION TWO

- (a) Ali Limited and Baba Limited are firms operating in the same industry. The firms are similar and identical in all respects except in their capital structures. Both firms generate annual sales of Sh.800 million. The gross profit margin for both firms is 40% with estimated annual operating costs of Sh.70 million for each firm.

The capital structures of the firms are as follows:

	Ali Limited Sh. "million"	Baba Limited Sh. "million"
Equity (market value)	1,750	1,500
8% debt (trading at par)	-	1,000
	<u>1,750</u>	<u>2,500</u>

The two companies adopt a 100% payout ratio as their dividend policy. The corporation tax rate is 30%.

### Required:

Using the Modigliani and Miller (MM) propositions with corporate taxes:

- Determine the equilibrium market value for each firm. (4 marks)
  - The weighted average cost of capital (WACC) of each firm. (6 marks)
  - Comment on the results obtained in (a) (i) and (a) (ii) above. (2 marks)
- (b) Bahari Limited has a target capital structure composed of 70% equity and 30% debt. The schedule of the costs of the components of capital of the company is provided in the table below:

Amount of new debt Sh. "million"	After tax cost of debt	Amount of new equity Sh. "million"	Cost of equity
0 to 150	3.90%	0 to 300	6.00%
150 to 300	4.40%	300 to 600	7.80%
300 to 450	4.80%	600 to 900	10.00%

### Required:

Calculate the break-points and illustrate the marginal cost of capital schedule for Bahari Limited.

(8 marks)

(Total 20 marks)

## QUESTION THREE

- (a) Bidii Limited is evaluating a new project to produce lawn mowers. The initial investment in plant and equipment is Sh.500 million. Sales of lawn mowers in year 1 are forecasted at Sh.200 million and costs at Sh.100 million. Both are expected to increase by 10% each year in line with inflation. The corporation tax rate is 30%. Working capital in each year consists of inventories of raw materials and is forecasted at 20% of sales in the following year.

The project will last for five years and the equipment at the end of this period will have no resale value. For tax purposes, the equipment can be depreciated on a straight line basis over these five years. The nominal discount rate is 15%.

### Required:

Show that the net present value (NPV) of the project is the same whether calculated using real cash flows or nominal cash flows. (10 marks)

- (b) Boma Ltd. has in issue 8 million ordinary shares with an ex-dividend market value of Sh.7.16 per share. A dividend of Sh.0.62 per share for 2019 has just been paid. The pattern of recent dividends is as follows:

Year	2016	2017	2018	2019
Dividend per share Sh.	0.551	0.579	0.591	0.62

Boma Ltd. also has in issue 8.5% bonds which are redeemable in five years' time with a total nominal value of Sh.5 million. The market value of each Sh.100 bond is Sh.103.42.

Redemption will be at nominal value.



Boma Ltd. is planning to invest a significant amount of money in a joint venture in a new business area. It has identified a proxy company with similar business risk to the joint venture. The proxy company has an equity beta of 1.038 and is financed 75% by equity and 25% by debt on a market value basis.

The current risk-free rate of return is 4% and the average equity risk premium is 5%. The corporate tax rate is 30% and Boma Ltd. has an equity beta of 1.6.

**Required:**

- (i) The after tax weighted average cost of capital (WACC) for Boma Ltd. using the dividend growth model. (6 marks)
  - (ii) A project-specific cost of equity for Boma Ltd. for the planned joint venture. (4 marks)
- (Total: 20 marks)**

**QUESTION FOUR**

- (a) Mamba Ltd. is considering an investment in two alternative projects; X and Y. Both investments require an initial cash outlay of Sh.1,800,000. The firm expects to invest in only one of the projects.

Project X has a useful life of 3 years whereas project Y has a useful life of 4 years. Both projects shall not have resale values at the end of their useful lives.

Given below are the operating cash flows expected from each project for each year:

Year	Project X Sh."000"	Project Y Sh."000"
1	800	700
2	900	700
3	850	700
4		700

**Addition information:**

1. The risk indices for the projects are given as follows:

Project	Risk index
X	1.0
Y	1.2

2. The risk-free rate of return is 8%.
3. The expected return on the market portfolio is 15%.

**Required:**

- (i) The risk-adjusted discounting rate for each project. (2 marks)
  - (ii) Advise on which project the firm should undertake when evaluated using the equivalent annuity approach. (6 marks)
- (b) The new credit manager of Mali Mali Enterprises plans to liberalise the firm's credit policy. The firm currently generates credit sales of Sh.287,500,000 annually. The more lenient policy is expected to produce credit sales of Sh.375,000,000. The bad debt losses on additional sales are projected to be 10%. An additional collection expenditure of Sh.7,500,000 will be incurred. The new credit manager anticipates that production and selling costs other than additional bad debts and collection expenses will remain at 70% of the additional sales.

The firm pays corporate tax at the rate of 30% after deductible expenses.

Assume 360 days in a year.

**Required:**

- (i) Assuming that the firm maintains a debtors turnover of 15 times, calculate by how much the debtors' balance will increase. (4 marks)
  - (ii) Compute the firm's incremental return on investment. (4 marks)
  - (iii) Assuming additional stocks of Sh.17,500,000 are required and additional creditors of Sh.7,500,000 will arise in order to support the additional sales, compute the after tax return on additional investment. (4 marks)
- (Total: 20 marks)**



### QUESTION FIVE

(a) In relation to Islamic finance, highlight six features of a Musharakah contract. (6 marks)

(b) The Altman formula for prediction of bankruptcy is given as follows:

$$Z \text{ score} = 1.2X_1 + 1.4X_2 + 3.3X_3 + 1X_4 + 0.6X_5$$

Where;  $X_1$  = Working capital/Total assets

$X_2$  = Retained earnings/Total assets

$X_3$  = Earnings before interest and tax/Total assets

$X_4$  = Sales/Total assets

$X_5$  = Market value of equity/Liabilities

You are provided with the following information in respect of two listed companies:

Company	Working capital	Retained earnings	Earnings before interest and tax	Market value of equity	Total assets	Liabilities	Sales
	Sh. "000"	Sh. "000"	Sh. "000"	Sh. "000"	Sh. "000"	Sh. "000"	Sh. "000"
Alpha Ltd.	4,000	60,000	10,000	20,000	200,000	120,000	200,000
Falcon Ltd.	40,000	200,000	30,000	100,000	1,800,000	1,000,000	2,000,000

#### Required:

(i) The Z – score for each company. (4 marks)

(ii) Interpret the results obtained in (b) (i) above. (2 marks)

(iii) Explain four shortcomings of Altman's model for predicting corporate failure. (8 marks)

(Total: 20 marks)

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Present Value Interest factor of 1 Received at the End of  $n$  Periods at  $r$  Percent:

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

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	20%	24%	25%	30%
1	0.9901	0.9804	0.9709	0.9615	0.9524	0.9434	0.9346	0.9259	0.9174	0.9091	0.9009	0.8929	0.8850	0.8772	0.8696	0.8621	0.8333	0.8065	0.8000	0.7692
2	0.9803	0.9612	0.9426	0.9246	0.9070	0.8900	0.8734	0.8573	0.8417	0.8264	0.8116	0.7972	0.7831	0.7695	0.7561	0.7432	0.6944	0.6504	0.6400	0.5917
3	0.9706	0.9423	0.9151	0.8890	0.8638	0.8396	0.8163	0.7938	0.7722	0.7513	0.7312	0.7118	0.6931	0.6750	0.6575	0.6407	0.5787	0.5245	0.5120	0.4552
4	0.9610	0.9238	0.8885	0.8548	0.8227	0.7921	0.7629	0.7350	0.7084	0.6830	0.6587	0.6355	0.6133	0.5921	0.5718	0.5523	0.4823	0.4230	0.4096	0.3501
5	0.9515	0.9057	0.8626	0.8219	0.7835	0.7473	0.7130	0.6806	0.6499	0.6209	0.5935	0.5674	0.5428	0.5194	0.4972	0.4761	0.4019	0.3411	0.3277	0.2693
6	0.9420	0.8880	0.8375	0.7903	0.7462	0.7050	0.6663	0.6302	0.5963	0.5645	0.5346	0.5066	0.4803	0.4556	0.4323	0.4104	0.3349	0.2751	0.2621	0.2072
7	0.9327	0.8706	0.8131	0.7599	0.7107	0.6651	0.6227	0.5835	0.5470	0.5132	0.4817	0.4523	0.4251	0.3996	0.3759	0.3538	0.2791	0.2218	0.2097	0.1594
8	0.9235	0.8535	0.7894	0.7307	0.6768	0.6274	0.5820	0.5403	0.5019	0.4665	0.4339	0.4039	0.3762	0.3506	0.3269	0.3050	0.2326	0.1789	0.1678	0.1226
9	0.9143	0.8368	0.7664	0.7026	0.6446	0.5919	0.5439	0.5002	0.4604	0.4241	0.3909	0.3606	0.3329	0.3075	0.2843	0.2630	0.1938	0.1443	0.1342	0.0943
10	0.9053	0.8203	0.7441	0.6756	0.6139	0.5584	0.5083	0.4632	0.4224	0.3855	0.3522	0.3220	0.2946	0.2697	0.2472	0.2267	0.1615	0.1164	0.1074	0.0725
11	0.8963	0.8043	0.7224	0.6496	0.5847	0.5268	0.4751	0.4289	0.3875	0.3505	0.3173	0.2875	0.2607	0.2366	0.2149	0.1954	0.1346	0.0938	0.0859	0.0558
12	0.8874	0.7885	0.7014	0.6246	0.5568	0.4970	0.4440	0.3971	0.3555	0.3186	0.2858	0.2567	0.2307	0.2076	0.1869	0.1685	0.1122	0.0757	0.0687	0.0429
13	0.8787	0.7730	0.6810	0.6006	0.5303	0.4688	0.4150	0.3677	0.3262	0.2897	0.2575	0.2292	0.2042	0.1821	0.1625	0.1452	0.0935	0.0610	0.0550	0.0330
14	0.8700	0.7579	0.6611	0.5775	0.5051	0.4423	0.3878	0.3405	0.2992	0.2633	0.2320	0.2046	0.1807	0.1597	0.1413	0.1252	0.0779	0.0492	0.0440	0.0254
15	0.8613	0.7430	0.6419	0.5553	0.4810	0.4173	0.3624	0.3152	0.2745	0.2394	0.2090	0.1827	0.1599	0.1401	0.1229	0.1079	0.0649	0.0397	0.0352	0.0195
16	0.8528	0.7284	0.6232	0.5339	0.4581	0.3936	0.3387	0.2919	0.2519	0.2176	0.1883	0.1631	0.1415	0.1229	0.1069	0.0930	0.0541	0.0320	0.0281	0.0150
17	0.8444	0.7142	0.6050	0.5134	0.4363	0.3714	0.3166	0.2703	0.2311	0.1978	0.1696	0.1456	0.1252	0.1078	0.0929	0.0802	0.0451	0.0258	0.0225	0.0116
18	0.8360	0.7002	0.5874	0.4936	0.4155	0.3503	0.2959	0.2502	0.2120	0.1799	0.1528	0.1300	0.1108	0.0946	0.0808	0.0691	0.0376	0.0208	0.0180	0.0089
19	0.8277	0.6864	0.5703	0.4746	0.3957	0.3305	0.2765	0.2317	0.1945	0.1635	0.1377	0.1161	0.0981	0.0829	0.0703	0.0596	0.0313	0.0168	0.0144	0.0068
20	0.8195	0.6730	0.5537	0.4564	0.3769	0.3118	0.2584	0.2145	0.1784	0.1486	0.1240	0.1037	0.0868	0.0728	0.0611	0.0514	0.0261	0.0135	0.0115	0.0053
21	0.8114	0.6598	0.5375	0.4388	0.3589	0.2942	0.2415	0.1987	0.1637	0.1351	0.1117	0.0926	0.0768	0.0638	0.0531	0.0443	0.0217	0.0109	0.0092	0.0040
22	0.8034	0.6468	0.5219	0.4220	0.3418	0.2775	0.2257	0.1839	0.1502	0.1228	0.1007	0.0826	0.0680	0.0560	0.0462	0.0382	0.0181	0.0088	0.0074	0.0031
23	0.7954	0.6342	0.5067	0.4057	0.3256	0.2618	0.2109	0.1703	0.1378	0.1117	0.0907	0.0738	0.0601	0.0491	0.0402	0.0329	0.0151	0.0071	0.0059	0.0024
24	0.7876	0.6217	0.4919	0.3901	0.3101	0.2470	0.1971	0.1577	0.1264	0.1015	0.0817	0.0659	0.0532	0.0431	0.0349	0.0284	0.0126	0.0057	0.0047	0.0018
25	0.7798	0.6095	0.4776	0.3751	0.2953	0.2330	0.1842	0.1460	0.1160	0.0923	0.0736	0.0588	0.0471	0.0378	0.0304	0.0245	0.0105	0.0046	0.0038	0.0014
30	0.7419	0.5521	0.4120	0.3083	0.2314	0.1741	0.1314	0.0994	0.0754	0.0573	0.0437	0.0334	0.0256	0.0196	0.0151	0.0116	0.0042	0.0016	0.0012	*
35	0.7059	0.5000	0.3554	0.2534	0.1813	0.1301	0.0937	0.0676	0.0490	0.0356	0.0259	0.0189	0.0139	0.0102	0.0075	0.0055	0.0017	0.0005	*	*
36	0.6989	0.4902	0.3450	0.2437	0.1727	0.1227	0.0875	0.0626	0.0449	0.0323	0.0234	0.0169	0.0123	0.0089	0.0065	0.0048	0.0014	*	*	*
40	0.6717	0.4529	0.3066	0.2083	0.1420	0.0972	0.0668	0.0460	0.0318	0.0221	0.0154	0.0107	0.0075	0.0053	0.0037	0.0026	0.0007	*	*	*
50	0.6080	0.3715	0.2281	0.1407	0.0872	0.0543	0.0339	0.0215	0.0134	0.0085	0.0054	0.0035	0.0022	0.0014	0.0009	0.0006	*	*	*	*

Present Value Interest factors for Annuity of 1 Discounted at  $r$  Percent for  $n$  Periods:

$$PVIFA_{r,n} = [1 - 1/(1+r)^n] / r$$

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	20%	24%	25%	30%
1	0.9901	0.9804	0.9709	0.9615	0.9524	0.9434	0.9346	0.9259	0.9174	0.9091	0.9009	0.8929	0.8850	0.8772	0.8696	0.8621	0.8333	0.8065	0.8000	0.7692
2	1.9704	1.9416	1.9135	1.8861	1.8594	1.8334	1.8080	1.7833	1.7591	1.7355	1.7125	1.6901	1.6681	1.6467	1.6257	1.6052	1.5278	1.4568	1.4400	1.3609
3	2.9410	2.8839	2.8286	2.7751	2.7232	2.6730	2.6243	2.5771	2.5313	2.4869	2.4437	2.4018	2.3612	2.3216	2.2832	2.2459	2.1065	1.9813	1.9520	1.8161
4	3.9020	3.8077	3.7171	3.6299	3.5460	3.4651	3.3872	3.3121	3.2397	3.1699	3.1024	3.0373	2.9745	2.9137	2.8550	2.7982	2.5887	2.4043	2.3616	2.1662
5	4.8534	4.7135	4.5797	4.4518	4.3295	4.2124	4.1002	3.9927	3.8897	3.7908	3.6959	3.6048	3.5172	3.4331	3.3522	3.2743	2.9906	2.7454	2.6893	2.4356
6	5.7955	5.6014	5.4172	5.2421	5.0757	4.9173	4.7665	4.6229	4.4859	4.3553	4.2305	4.1114	3.9975	3.8887	3.7845	3.6847	3.3255	3.0205	2.9514	2.6427
7	6.7282	6.4720	6.2303	6.0021	5.7864	5.5824	5.3893	5.2064	5.0330	4.8684	4.7122	4.5638	4.4226	4.2883	4.1604	4.0386	3.6046	3.2423	3.1611	2.8021
8	7.6517	7.3255	7.0197	6.7327	6.4632	6.2098	5.9713	5.7466	5.5348	5.3349	5.1461	4.9676	4.7988	4.6389	4.4873	4.3436	3.8372	3.4212	3.3289	2.9247
9	8.5660	8.1622	7.7861	7.4353	7.1078	6.8017	6.5152	6.2469	5.9952	5.7590	5.5370	5.3282	5.1317	4.9464	4.7716	4.6065	4.0310	3.5655	3.4631	3.0190
10	9.4713	8.9826	8.5302	8.1109	7.7217	7.3601	7.0236	6.7101	6.4177	6.1446	5.8892	5.6502	5.4262	5.2161	5.0188	4.8332	4.1925	3.6819	3.5705	3.0915
11	10.368	9.7868	9.2526	8.7605	8.3064	7.8869	7.4987	7.1390	6.8052	6.4951	6.2065	5.9377	5.6869	5.4527	5.2337	5.0286	4.3271	3.7757	3.6564	3.1473
12	11.255	10.575	9.9540	9.3851	8.8633	8.3838	7.9427	7.5361	7.1607	6.8137	6.4924	6.1944	5.9176	5.6603	5.4206	5.1971	4.4392	3.8514	3.7251	3.1903
13	12.134	11.348	10.635	9.9856	9.3936	8.8527	8.3577	7.9038	7.4869	7.1034	6.7499	6.4235	6.1218	5.8424	5.5831	5.3423	4.5327	3.9124	3.7801	3.2233
14	13.004	12.106	11.296	10.563	9.8986	9.2950	8.7455	8.2442	7.7862	7.3667	6.9819	6.6282	6.3025	6.0021	5.7245	5.4675	4.6106	3.9616	3.8241	3.2487
15	13.865	12.849	11.938	11.118	10.380	9.7122	9.1079	8.5595	8.0607	7.6061	7.1909	6.8109	6.4624	6.1422	5.8474	5.5755	4.6755	4.0013	3.8593	3.2682
16	14.718	13.578	12.561	11.652	10.838	10.106	9.4466	8.8514	8.3126	7.8237	7.3792	6.9740	6.6039	6.2651	5.9542	5.6685	4.7296	4.0333	3.8874	3.2832
17	15.562	14.292	13.166	12.166	11.274	10.477	9.7632	9.1216	8.5436	8.0216	7.5488	7.1196	6.7291	6.3729	6.0472	5.7487	4.7746	4.0591	3.9099	3.2948
18	16.398	14.992	13.754	12.659	11.690	10.828	10.059	9.3719	8.7556	8.2014	7.7016	7.2497	6.8399	6.4674	6.1280	5.8178	4.8122	4.0799	3.9279	3.3037
19	17.226	15.678	14.324	13.134	12.085	11.158	10.336	9.6036	8.9501	8.3649	7.8393	7.3658	6.9380	6.5504	6.1982	5.8775	4.8435	4.0967	3.9424	3.3105
20	18.046	16.351	14.877	13.590	12.462	11.470	10.594	9.8181	9.1285	8.5136	7.9633	7.4694	7.0248	6.6231	6.2593	5.9288	4.8696	4.1103	3.9539	3.3158
21	18.857	17.011	15.415	14.029	12.821	11.764	10.836	10.017	9.2922	8.6487	8.0751	7.5620	7.1016	6.6870	6.3125	5.9731	4.8913	4.1212	3.9631	3.3198
22	19.660	17.658	15.937	14.451	13.163	12.042	11.061	10.201	9.4424	8.7715	8.1757	7.6446	7.1695	6.7429	6.3587	6.0113	4.9094	4.1300	3.9705	3.3230
23	20.456	18.292	16.444	14.857	13.489	12.303	11.272	10.371	9.5802	8.8832	8.2664	7.7184	7.2297	6.7921	6.3988	6.0442	4.9245	4.1371	3.9764	3.3254
24	21.243	18.914	16.936	15.247	13.799	12.550	11.469	10.529	9.7066	8.9847	8.3481	7.7843	7.2829	6.8351	6.4338	6.0726	4.9371	4.1428	3.9811	3.3272
25	22.023	19.523	17.413	15.622	14.094	12.783	11.654	10.675	9.8226	9.0770	8.4217	7.8431	7.3300	6.8729	6.4641	6.0971	4.9476	4.1474	3.9849	3.3286
30	25.808	22.396	19.600	17.292	15.372	13.765	12.409	11.258	10.274	9.4269	8.6938	8.0552	7.4957	7.0027	6.5660	6.1772	4.9789	4.1601	3.9950	3.3321
35	29.409	24.999	21.487	18.665	16.374	14.498	12.948	11.655	10.567	9.6442	8.8552	8.1755	7.5856	7.0700	6.6166	6.2153	4.9915	4.1644	3.9984	3.3330
36	30.108	25.489	21.832	18.908	16.547	14.621	13.035	11.717	10.612	9.6765	8.8786	8.1924	7.5979	7.0790	6.6231	6.2201	4.9929	4.1649	3.9987	3.3331
40	32.835	27.355	23.115	19.793	17.159	15.046	13.332	11.925	10.757	9.7791	8.9511	8.2438	7.6344	7.1050	6.6415	6.2335	4.9966	4.1659	3.9995	3.3332
50	39.196	31.424	25.730	21.482	18.256	15.762	13.801	12.233	10.962	9.9148	9.0417	8.3065	7.6752	7.1327	6.6605	6.2463	4.9995	4.1666	3.9999	3.3333





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**CIFA PART II SECTION 3**

**CORPORATE FINANCE**

**TUESDAY: 26 November 2019.**

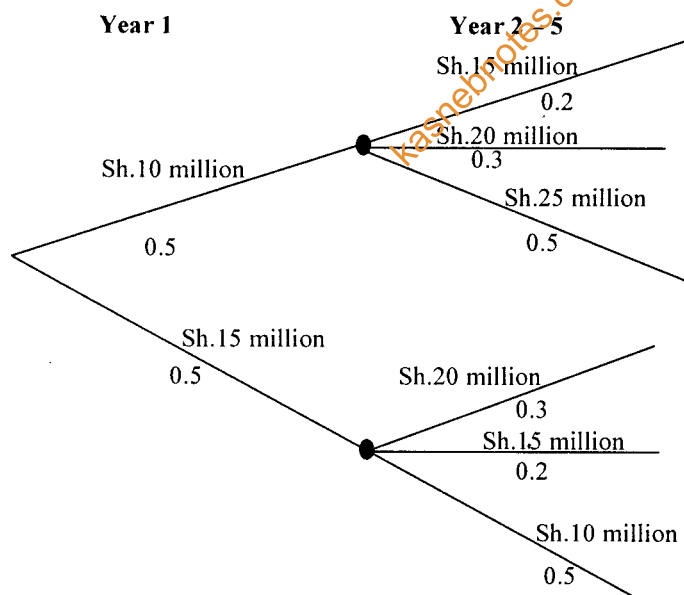
**Time Allowed: 3 hours.**

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

**QUESTION ONE**

- (a) With reference to agency theory, highlight four causes of agency problems that could arise between shareholders and government. (4 marks)
- (b) Zimco Limited is considering acquiring a new machine at a cost of Sh.20 million. The machine is expected to have a useful life of five years with a nil salvage value after five years.

The expected net cash flows and associated probabilities of occurrence are summarised below:



The company's required rate of return for this investment is 11%.

**Required:**

- (i) Expected net present value (ENPV) of the project using decision tree analysis. (6 marks)
- (ii) Expected standard deviation of the project. (4 marks)
- (iii) If the net present value of the project is less than Sh.2 million, the firm will be exposed to financial distress.

Determine the probability that the firm will avoid financial distress (Assume a normal distribution). (2 marks)

- (c) Nevok Industries Ltd. is currently an all equity financed firm. The firm expects to generate earnings before interest and taxes (EBIT) of Sh.10 million over the next year. Currently, Nevok Industries Ltd. has 10 million outstanding ordinary shares. The shares are currently trading at a price of Sh.7.50 per share at the security exchange. The firm is considering changing its capital structure by borrowing Sh.15 million at an interest rate of 8% per annum and use the proceeds to purchase 2 million ordinary shares at a price of Sh.7.50 each.

Assume that the firm's EBIT is not expected to grow in the future and that all earnings are paid as dividends.

**Required:**

Using Modigliani and Miller (MM) propositions I and II, show that an increase in expected earnings per share (EPS) for Nevok Industries Ltd. will not lead to an increase in the share price. (4 marks)

(Total: 20 marks)

**QUESTION TWO**

- (a) Baobab Limited has not been paying dividends since inception. The Chief Finance Officer (CFO) of the company has been directed by the Board to develop a dividend policy to guide on the payments of dividends in the future.

**Required:**

In light of the above statement, explain three advantages and three disadvantages of dividend payments to shareholders. (6 marks)

- (b) (i) Distinguish between "permanent working capital" and "seasonal working capital". (2 marks)
- (ii) Xee Ltd. currently sells goods on terms of "net 30". The firm is considering adoption of terms "3/15 net 45". This change will effectively increase its average collection period from 35 days to 40 days.

The firm's current turnover is an average of Sh.50 million per annum. However, the relaxation of the terms of sale will increase annual sales by 20%.

The firm's cost of sales is 40% of turnover. 80% of the sales are made on credit basis. All credit customers will take advantage of the 3% discount offer.

Bad debts are estimated at 5% of credit sales and inventory levels are 10% of gross turnover.

The minimum required rate of return is 12% and the firm pays corporation tax at a rate of 30% per annum.

(Assume 365 days in a year).

**Required:**

Using suitable calculations, advise Xee Ltd. on whether to adopt the revised credit policy. (9 marks)

- (c) SLM Ltd. has cash out flows of Sh.100,000 every day, seven days a week. The interest rate is 5% and the fixed cost of replenishing cash balance is Sh.100 per transaction.

The year has 365 days.

**Required:**

The optimal initial cash balance using the Baumol-Allias-Tobin (BAT) model. (3 marks)

(Total 20 marks)

**QUESTION THREE**

- (a) Identify three symptoms of financial distress in a firm. (3 marks)
- (b) Eagle Limited is considering acquiring Pelican Limited, a firm in the same industry, so as to consolidate its market share. Given below are financial data for both firms:

	<b>Eagle Limited</b>	<b>Pelican Limited</b>
Number of issued ordinary shares	10 million	5 million
Earnings per share (EPS)	Sh.4	Sh.2
Market price per share (MPS)	Sh.50	Sh.25
Price to earnings (P/E) ratio	12.5 times	12.5 times

Eagle Limited is considering financing acquisition of Pelican Limited on a share for share exchange. It is considering offering 2 new shares to the shareholders of Pelican Limited in exchange of 4 shares held.

Assume a corporation tax rate of 30%.

**Required:**

- (i) Non-diluting offer price. (2 marks)
- (ii) Non-diluting maximum exchange ratio. (2 marks)

- (iii) The post acquisition EPS of Eagle Limited at the exchange ratio they are considering offering. (3 marks)
- (iv) If the price to earnings (P/E) ratio of Eagle Limited rises to 15 times after the acquisition, determine the post acquisition market price of a share of Eagle Limited. (2 marks)
- (c) Double K Limited is concerned whether antitrust regulators would consider the acquisition of Tripple G Limited an antitrust violation. The market in which the two companies operate consist of eight competitors. The largest company has a 25% market share. Double K Limited has the second largest market share of 20%. Five companies including Tripple G Limited each have a market share of 10%. The smallest company has a 5% market share.
- Required:**
- (i) Calculate the increase in the Herfindahl-Hirschman Index (HHI). (4 marks)
- (ii) Explain the probable action by the antitrust regulator based on your answer in (c) (i) above. (2 marks)
- (iii) Outline one strength and one weakness of the HHI model. (2 marks)
- (Total: 20 marks)**

#### QUESTION FOUR

- (a) Explain four distinct features of Islamic Finance. (4 marks)
- (b) Describe two sources of Islamic Finance that are an alternative to a right issue and a loan note. (4 marks)
- (c) The following is an extract of the statement of financial position of Tausi Limited, a company quoted at the Securities Exchange:

	Sh. "million"	Sh. "million"
<b>Equity and liabilities:</b>		
<b>Equity:</b>		
Share capital	17	
Retained earnings	<u>15</u>	
Total equity		32
<b>Liabilities:</b>		
Long term liabilities	13	
Current liabilities	<u>21</u>	
Total liabilities		<u>34</u>
Total equity and liabilities		<u>66</u>

#### Additional information:

- The share capital of the company consists of Sh.12 million of ordinary shares and Sh.5 million irredeemable preference shares.
- The ordinary shares have a nominal value of Sh.0.50 per share, an ex-dividend market price of Sh.7.07 per share and a cum-dividend market price of Sh.7.52 per share.
- The dividend for the year 2019 will be paid in the near future.
- Dividends paid in recent years have been as follows:
 

Year	2018	2017	2016	2015
<b>Dividend per share (Sh)</b>	0.43	0.41	0.39	0.37
- The 5% preference shares have a nominal value of Sh.0.50 per share and an ex-dividend market price of Sh.0.31 per share.
- The long-term borrowings for the company consist of Sh.10 million of loan notes and a Sh.3 million bank loan. The bank loan has variable interest rate.
- The 7% loan notes have a nominal value of Sh.100 per loan note and a market price of Sh.102.34 per loan note. Annual interest has just been paid and the loan notes are redeemable in four year's time at a 5% premium to nominal value.
- The corporation tax rate is 30%.

#### Required:

The after tax weighted average cost of capital (WACC) on a market value basis.

(12 marks)  
**(Total: 20 marks)**

### QUESTION FIVE

(a) Explain the following terms as used in corporate restructuring:

- (i) Management buyout (MBO). (1 mark)
- (ii) Leveraged buyout (LBO). (1 mark)
- (iii) Employee buyout. (1 mark)
- (iv) Spin out. (1 mark)

(b) Ndovu Limited is considering the purchase of a new machine with an operating life of three years. The new machine could be leased for three payments of Sh.55,000 payable annually in advance.

Alternatively, the machine could be purchased for Sh.160,000 using a bank loan at a cost of 8% per year. If the machine is purchased, Ndovu Limited will incur maintenance costs of Sh.8,000 per year, payable at the end of each year of operation. The machine would have a residual value of Sh.40,000 at the end of its three year life.

The company's production manager estimates that if maintenance cost routines were upgraded, the new machine could be operated for a period of four years with maintenance costs increasing to Sh.12,000 per year payable at the end of each year of operation. If operated for four years, the machine's residual value would fall to Sh.11,000.

The cost of capital is 8%.

**Required:**

- (i) Advise Ndovu Limited on whether it should lease or purchase the machine assuming that it is operated for a period of three years. (6 marks)
- (ii) Calculate the equivalent annual cost of purchasing and operating the machine for both three years and four years and recommend which replacement interval should be adopted. (6 marks)

(c) A company's present capital structure consists of Sh.20,000,000 shares of equity stock. The company requires Sh.100,000,000 of external financing for which it is considering two alternatives:

Alternative A. Issue 5,000,000 equity shares of Sh.10 par at Sh.20 each.

Alternative B Issue 3,000,000 equity shares of Sh.10 par at Sh.20 each and 4,000,000 preference shares of Sh.10 par carrying 11% dividend.

The company tax rate is 30%.

**Required:**

Determine the earnings per share-profit before interest and taxes (EPS-PBIT) indifference point for alternative A and alternative B. (4 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	.3165	.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	.0575	.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						

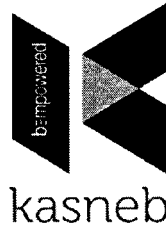
\* The factor is zero to four decimal places

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





**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:

	Project		
	X	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:**

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

**Required:**

- Determine the weighted average cost of capital (WACC) for the two firms. (2 marks)
  - 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:
- The company follows a residual dividend policy.
  - 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.
  - The forecasted level of potential retained earnings next year is Sh.2 million.
  - 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:**

1. The annual usage of raw materials for the year 2018 are estimated at Sh.235 million.
2. 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						

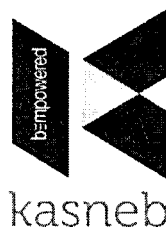
\* The factor is zero to four decimal places

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





### CIFA PART II SECTION 3

#### CORPORATE FINANCE

WEDNESDAY: 28 November 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) (i) Explain the term “corporate governance” as applied in corporate finance. (2 marks)
- (ii) Highlight four indicators of the presence of good corporate governance practices in listed companies in your country. (4 marks)
- (b) Brian Olentutu, a financial analyst at Rich Consultancies has obtained the following cash flows on two mutually exclusive projects for Alego Limited:

Year	Project 1 Sh.“000”	Project 2 Sh.“000”
0	(750)	(2,100)
1	310	2,200
2	430	760
3	330	850

Both projects require an annual rate of return of 14%.

#### Required:

- (i) The incremental internal rate of return (IRR) for each project. (3 marks)
- (ii) Advise Alego Limited on which project to accept. (1 mark)
- (c) Lewis Munga, a financial analyst for Sigma Capital Securities Ltd. has been assigned the task of estimating the costs of capital for Ruwenzori Ltd.

Lewis has estimated the following information for Ruwenzori Ltd:

- The company has a beta of 1.35.
- The appropriate market risk premium is 7%.
- The current risk-free rate of return is 2%.
- The current market price per share (MPS) is Sh.35.
- The company currently pays a dividend of Sh.1 per share on Sh.4 per share earnings.
- The company's return on equity (ROE) is 12%.
- Floatation cost to issue new shares are approximately 10%.
- Ruwenzori Ltd.'s preference shares pay an annual dividend of Sh.1.50 and each has a market price of Sh.18.75.
- The company's cost of debt is 6%.
- Ruwenzori Ltd.'s current capital structure is 25% debt, 5% preference shares and 70% equity.
- Ruwenzori Ltd. has a tax rate of 30%.

#### Required:

- (i) Cost of retained earnings. (2 marks)
- (ii) Cost of new equity. (3 marks)
- (iii) Cost of preference shares. (2 marks)
- (iv) Weighted average cost of capital (WACC) assuming no new shares of equity need to be issued. (3 marks)

(Total: 20 marks)

## QUESTION TWO

- (a) (i) Analyse three essential elements of “sukuk” in relation to Islamic finance. (3 marks)
- (ii) Islamic banking is a banking activity that is consistent with the principle of Sharia (Islamic law). However, Islamic banking continues to face some challenges.

With respect to the above statement, assess four challenges facing Islamic banking operations in your country. (4 marks)

- (b) Horizon Limited forecasts that next year’s sales will be Sh.6 million. Fixed operating costs are estimated to be Sh.800,000 and the variable cost ratio (that is, variable costs as a fraction of sales) is estimated to be 0.75. Fixed financing costs are estimated at Sh.200,000 each year. The company has 700,000 outstanding ordinary shares. Corporation tax rate is 30%.

### Required:

- (i) The forecasted earnings per share (EPS) for next year. (2 marks)
- (ii) The company’s EPS assuming that the sales were 10% above the projected Sh.6 million level provided. (2 marks)
- (iii) Degrees of operating leverage, financial leverage and combined leverage based on the results obtained in (b) (i) and (b) (ii) above. (6 marks)
- (iv) Interpret the results obtained in (b) (iii) above. (3 marks)

(Total: 20 marks)

## QUESTION THREE

- (a) Explain the term “bootstrapping” as used in mergers and acquisitions. (2 marks)
- (b) (i) Distinguish between “drag on liquidity” and “pull on liquidity” as used in liquidity management. (2 marks)
- (ii) Propose three causes of a drag on liquidity. (3 marks)
- (c) Highlands Limited currently has an earnings per share (EPS) of Sh.2.00 but is determined to report an EPS of Sh.2.67 and therefore acquires Olympia Limited.

The relevant information is provided below:

	Highlands Limited	Olympia Limited
Earnings per share (EPS)	Sh.2.00	Sh.2.50
Market price per share (MPS)	Sh.40	Sh.25
Price to earnings (P/E) ratio	20	10
Number of shares	100,000	200,000
Total earnings	Sh.200,000	Sh.500,000
Total market value	Sh.4,000,000	Sh.5,000,000

### Required:

The cost of the merger to Highlands Limited. (6 marks)

- (d) Joppa Limited expects its cash flows to behave in a random manner as assumed by the Miller and Orr model.

It provides the following information:

1. Annual yield on marketable securities is 10%.
2. The fixed cost of effecting a marketable securities transaction is Sh.2,500.
3. The standard deviation of the change in daily cash balance is Sh.10,000.
4. The management expects to maintain a minimum cash balance of Sh.200,000.

### Required:

The company’s upper control limit using Miller and Orr model. (4 marks)

- (e) Faridah enterprises sells on terms of 2/10 net 45 days. Annual sales are Sh.90 million. 30% of its customers pay on the 10<sup>th</sup> day and take the discount. The accounts receivable average Sh.12 million.

Assume a 360 days year.

### Required:

The average collection period (ACP) on non-discount sales.

(3 marks)

(Total: 20 marks)



#### QUESTION FOUR

- (a) In relation to capital structure, distinguish between “market timing theory” and “pecking order theory”. (2 marks)
- (b) Simba Limited is an all equity financed company with a cost of capital of 20%.

The company is considering the following one year investment projects:

Project	1	2	3	4	5
Initial cash outlay (Sh.“000”)	1,500	1,500	2,000	2,500	3,000
Annual cash flow (Sh.“000”)	1,800	2,100	2,400	3,000	3,200
Beta coefficient	0.4	0.8	1.0	1.5	2.0

The risk-free rate of return is 10% and probability distribution of the market return is given as follows:

Probability	Market return (%)
0.2	15
0.1	20
0.5	25
0.2	10

#### Required:

- (i) The firm’s overall beta coefficient. (2 marks)
- (ii) Using suitable computations, advise Simba Limited on which project(s) to undertake. (6 marks)
- (iii) The beta factor of the investment in the accepted projects. (2 marks)
- (c) Lovely Electrical Products Company Limited (LEPCL), an unlevered firm, generates operating profit, that is earnings before interest and tax (EBIT) of Sh.20 million in each year. The cost of equity of unlevered firm is 10%.

The company is considering use of Sh.40 million, 5% debt to finance an expansion programme.

In an extensive study on investors, Alpha Associates, an external consulting firm has estimated that the marginal personal tax rates on ordinary shares income for all investors is 25%. Dividend and capital gains are both included in this income. The firm has also estimated that the marginal personal tax rate on debt income is 30%.

Corporate tax rate is 30%.

#### Required:

Using Modigliani and Miller’s arguments, calculate:

- (i) The current value of unlevered firm. (2 marks)
- (ii) The current value of the firm with debt and its weighted average cost of capital (WACC) under assumption of corporate taxes but not personal income taxes. (4 marks)
- (iii) The current value of the firm with debt and both corporate and personal income taxes. (2 marks)
- (Total: 20 marks)**

#### QUESTION FIVE

- (a) Discuss three factors that could influence a firm’s target debt-to-equity ratio. (6 marks)
- (b) Evaluate three characteristics that leveraged buy out (LBO) lenders must consider in order to mitigate against risk of a significant value drop. (6 marks)
- (c) Examine three types of indirect financial cost that could be faced by firms experiencing financial distress. (3 marks)
- (d) Demco Limited is contemplating whether to replace an existing machine or to spend money overhauling it. The firm currently pays no taxes. The replacement machine costs Sh.90 million now and requires maintenance cost of Sh.10 million at the end of every year for eight years. At the end of eight years, it would have a salvage value of Sh.20 million and would be disposed. The existing machine requires an increasing amount of maintenance cost each year and its salvage value decreases each year as illustrated below:

Year	Maintenance cost Sh.“000”	Salvage value Sh.“000”
0	0	4,000
1	1,000	2,500
2	2,000	1,500
3	3,000	1,000
4	4,000	0

If the existing machine is sold in one year, the resale price will be Sh.2.5 million and Sh.1 million must be spent on maintenance during the year to keep it running. The maintenance costs are paid at the end of the year. The machine will last for four years before it ceases to operate. The firm has an opportunity cost of 15%.

**Required:**

Advise the management of Damco Limited on when to replace the machine.

(5 marks)

**(Total: 20 marks)**

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

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

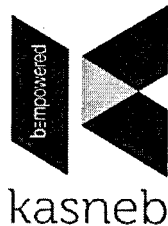
Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	12%	14%	15%	16%	18%	20%	24%	28%	32%	36%
1	.9901	.9804	.9709	.9615	.9524	.9434	.9346	.9259	.9174	.9091	.8929	.8772	.8696	.8621	.8475	.8333	.8065	.7813	.7576	.7353
2	.9803	.9612	.9426	.9246	.9070	.8900	.8734	.8573	.8417	.8264	.7972	.7695	.7561	.7432	.7182	.6944	.6504	.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	.7865	.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	9.0501	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	4.9366	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	4.9395	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



## 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:

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

- Outline two assumptions of the Walter's Model. (2 marks)
- 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:**

- 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)
  - 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)
  - 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 in charge 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:

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

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	.0025	.0011	.0004	.0002	.0001						

\* The factor is zero to four decimal places

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

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

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





**CIFA PART II SECTION 3**  
**CORPORATE FINANCE**

**WEDNESDAY: 29 November 2017.**

**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) Explain four limitations of corporate restructuring. (4 marks)

(b) The following financial information has been extracted from the books of Awendo Ltd. and Awasi Ltd. for the year 2016:

	<b>Awendo Ltd.</b>	<b>Awasi Ltd.</b>
	<b>Sh. "000"</b>	<b>Sh. "000"</b>
Turnover	25,000	30,000
Fixed cost	7,500	15,000

Contribution to sales (C/S) ratio of the company is 50% and 30% for Awendo Ltd. and Awasi Ltd. respectively.

**Required:**

- (i) The degree of operating leverage for each company. (4 marks)
- (ii) Comment on the results in (b) (i) above. (1 mark)
- (iii) Highlight four uses of operating leverage. (4 marks)
- (c) The following information has been extracted from Borabu manufacturing company which deals with production of packaging materials at the export processing zone (EPZ):

	<b>Sh. "000"</b>
Average period of credit allowed by suppliers	480
Average trade receivables outstanding	4,400
Raw materials consumption	10,000
Cost of sales	10,500
Revenue for the year	16,000
Value of inventory maintained (average):	
Raw materials	320
Work-in-progress	350
Finished goods	260

The average period of credit allowed by suppliers is 16 days. Assume a year has 365 days.

**Required:**

- (i) The length of operating cycle of Borabu Ltd. (3 marks)
- (ii) Number of operating cycles per annum. (2 marks)
- (iii) Working capital requirement of Borabu Ltd. (2 marks)

**(Total: 20 marks)**

**QUESTION TWO**

- (a) Examine four corporate takeovers defensive tactics. (8 marks)
- (b) Alpha Ltd. contemplates to acquire Beta Ltd. The following information is available:

	Alpha Ltd.	Beta Ltd.
Total current earnings	Sh.50 million	Sh.20 million
Number of outstanding shares	20 million	10 million
Market price per share	Sh.30	Sh.20

**Required:**

- (i) The maximum exchange ratio acceptable to the shareholders of Alpha Ltd. assuming that the price-to-earnings (P/E) ratio of the combined entity is 12 and that there is no synergy gain. (3 marks)
- (ii) The maximum exchange ratio acceptable to the shareholders of Beta Ltd. assuming that the price-to-earnings (P/E) ratio of the combined entity is 11 and that there is a synergy benefit of 5%. (3 marks)
- (c) Hezo Ltd. has issued 8% convertible bonds redeemable in 5 years' time. The convertible bonds are currently quoted at Sh.82 per Sh.100 nominal value. The bonds can be converted into 25 shares in 5 years' time. The share market price is currently Sh.3.50 and is expected to grow at a rate of 3% per annum. The tax rate is 30%.

**Required:**

The cost of convertible bonds for Hezo Ltd.

(6 marks)

**(Total: 20 marks)**

**QUESTION THREE**

- (a) Discuss three reasons why investors might be willing to pay a premium for shares of a company with a stable dividend policy. (6 marks)
- (b) Empire Ltd., an ungeared company, earned a pre-tax accounting profit of Sh.30 million in the financial year just ended. Replacement investment will match last year's depreciation of Sh.2 million. Both are fully tax-allowable.

**Additional information:**

- Corporate tax is payable at a rate of 30%.
- Empire Ltd. operates a 50% dividend payout policy and has previously issued 100 million shares with a par value of Sh.0.25 each.
- Empire Ltd. shareholders require a return of 15% per annum.
- The company holds Sh.15 million cash balance.

**Required:**

The market price per share of Empire Ltd. Assuming the shares are traded:

- (i) Cum-dividend. (3 marks)
- (ii) Ex-dividend. (1 mark)
- (c) Muhoroni Millers is considering the following independent, average risk investment projects:

Project	Size of project (Sh. Million)	Project internal rate of return, IRR (%)
V	1.0	12.0
W	1.2	11.5
X	1.2	11.0
Y	1.2	10.5
Z	1.0	10.0

The company has a target capital structure consisting of 50% debt and 50% equity. Its after-tax cost of debt is 8%, its cost of equity is estimated to be 13.5% and its net income is estimated to be Sh.2.5 million.

**Required:**

The dividend payout ratio given that the company follows a residual dividend policy.

(4 marks)

- (d) Wasini Ltd. encounters significant uncertainty with its sales volume and price in its primary product. The firm relies on scenario analysis in order to determine an expected net present value (NPV) which it then uses in its budget. The base-case, worst-case and best-case scenarios together with their respective probabilities are as follows:

Scenario	Probability of outcome	Unit sales volume	Sales price (Sh.)	Expected net present value (NPV) (Sh.)
Worst-case	0.30	6,000	3,600	-6,000
Base-case	0.50	10,000	4,200	13,000
Best-case	0.20	13,000	4,400	28,000

**Required:**

The coefficient of variation of the net present value.

(6 marks)

**(Total: 20 marks)**

**QUESTION FOUR**

- (a) Describe two types of agency conflicts that could affect the dividend payout policy of a corporate firm. (4 marks)
- (b) (i) Highlight three factors outside the control of the firm that could affect its cost of capital. (3 marks)
- (ii) Muruguru Ltd.'s weighted average cost of capital (WACC) is 11% and its corporate tax rate is 35%. The company's pre-tax cost of debt is 10% and its debt-equity ratio is 3:5. The risk-free rate is 8% and the risk market premium is 7%.

**Required:**

The beta of the company's equity.

(3 marks)

- (c) Masinga enterprises Ltd. (MEL) is considering going private through a leveraged buyout (LBO) by management. The management currently owns 21% of the 5 million outstanding shares. The market price per share is Sh.20 and it is felt that a 40% premium over the present price would be necessary to entice public shareholders to tender their shares in a cash offer. The management intends to keep its shares and obtain a senior debt equal to 80% of the funds necessary to complete the buyout. The remaining 20% will come from junior subordinated debentures. The terms of the senior debt are 2% above the prime rate with principal reductions of 20% on the initial loan at the end of each of the next five years. The junior subordinated debentures bear a 13% interest rate and must be retired at the end of six years with a single balloon payment. The debentures have warrants attached that enable the holders to purchase 30% of the stock at the end of the sixth year. The management estimates that earnings before interest and taxes (EBIT) will be Sh.25 million per year. The company will make capital expenditures in amounts equal to its depreciation. The prime rate is expected to be 10% over the next five years.

**Required:**

The minimum annual earnings before interest and taxes (EBIT) necessary to service the debt.

(5 marks)

- (d) A project to upgrade a computer software is estimated to cost Sh.1,000,000. Its expected cash flow at the end of year 1 is Sh.400,000. Thereafter, it is expected to decrease annually by Sh.20,000. The project has an economic life of 6 years. The certainty factor of the project is given as  $\alpha = 1 - 0.05t$ , where  $t$  is the  $n^{\text{th}}$  year. The risk-free rate of return is 10%.

**Required:**

The net present value (NPV) of the project using certainty equivalent approach.

(5 marks)

**(Total: 20 marks)**

**QUESTION FIVE**

- (a) Discuss five factors that have contributed to the growth of Islamic finance industry in your country. (10 marks)
- (b) Jalopy Motors Ltd. (JML) is intending to undertake a Sh.50 million expansion project. Over the years, the firm's board of directors has adhered to a policy of rejecting any investment proposal that would jeopardise the market value of the firm's ordinary shares.

A preliminary analysis projected a rate of return on the new project of approximately 14% before taxes. JML has made a tentative agreement with AOM Insurance Ltd. to finance the project through a private placement of the Sh.50 million in the form of 10% notes.

The firm's ordinary shares have been historically selling at 10 times after-tax earnings. The current earnings per share (EPS) is Sh.2.70 and the firm faces a 30% corporate income tax rate. The following information is also available:

	Sh. "000"
Long term debt (8%)	10,000
Ordinary shares (10,000,000 shares outstanding, Sh.2 par value)	20,000
Paid in capital, in excess of par	70,000
Retained earnings	<u>100,000</u>
Total capitalisation	<u>200,000</u>

**Required:**

- (i) Anthony Mutembei, one of the members of JML's board of directors argued that the firm should immediately place the notes, since the before-tax marginal cost of capital for the project is only 10% (the interest on the notes), and indications are that the project before tax rate of return would be greater than 10%.

Discuss whether Anthony Mutembei's argument is valid.

(3 marks)

- (ii) Determine the level of annual earnings that the new project must generate in order to meet the director's objective assuming JML's earnings multiple declines to 9.

(7 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	.0321	.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



# KASNEB

## CIFA PART II SECTION 3

### CORPORATE FINANCE

WEDNESDAY: 24 May 2017.

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) Examine five sources of conflict of interest that could arise between shareholders and bondholders of a corporate firm. (5 marks)
- (b) In relation to short-term financing, discuss three causes of overtrading. (3 marks)
- (c) Tambaki Ltd., a listed company, intends to expand its business operations by investing in two projects; A and B. project A will be financed through a floating rate note while project B will be financed through equity finance.

The following is the company's financial data before it undertook the expansion programme for the year ended 31 March 2017:

	Sh. "Million"
Ordinary shares (par value Sh.0.50)	225
Retained earnings	<u>801</u>
	<u>1026</u>
14% loan notes	75
9% bank loan	<u>250</u>
	<u>325</u>

#### Additional information:

- The 14% loan notes are redeemable at par in five years time. These loan notes have a current ex-interest market price of Sh.110 per Sh.100 loan note.
- The corporate tax rate is 30%.
- The current market price per share of the company's ordinary shares is Sh.3.76.
- The company's equity beta is estimated to be 1.2.
- The systematic risk of debt may be assumed to be zero. The risk free rate is 7% and market return is 13.5%.
- The estimated equity beta of Tambaki Ltd's main competitor in the same industry is 1.8 while its capital gearing is 60% equity and 40% debt by market values.

#### Required:

- (i) The current weighted average cost of capital (WACC) of Tambaki Ltd. (6 marks)
- (ii) Determine the risk adjusted cost of capital that Tambaki Ltd. should use as the discount rate for its proposed investment in the new venture. (5 marks)
- (iii) Highlight one assumption that should be made in (c)(ii) above. (1 mark)

(Total: 20 marks)

#### QUESTION TWO

- (a) Evaluate three advantages and three disadvantages of using comparable transaction analysis when valuing a target company. (6 marks)
- (b) Kemgen Ltd. has provided you with the following information:

	Sh.
Profit before interest and taxes	300,000
Less interest on debentures at 12%	<u>60,000</u>
Earnings before taxes	240,000
Less taxes at 30%	<u>72,000</u>
Net income	<u>168,000</u>

Earnings per share (EPS)	Sh. 4.2
Market price per share (MPS)	Sh. 30
Number of equity shares (Sh.10 each)	40,000
Price to earnings (P/E) ratio	7.14

**Additional information:**

1. The company has undistributed reserves of Sh.600,000.
2. The company requires Sh.200,000 for expansion. This amount will earn interest at the same rate as funds already employed.
3. You are informed that a debt to equity ratio of higher than 35% will push the price to earnings (P/E) ratio down to 5.71 and raise the interest rate on additional amount borrowed to 14%.

**Required:**

- (i) The probable price of the share assuming the additional funds are raised as debt. (4 marks)
  - (ii) The probable price of the share assuming the additional funds are raised by issuing equity shares. (4 marks)
- (c) Kinoru Ltd. is considering a capital project requiring a cash outlay of Sh.15 million. The project is expected to generate a net cash inflow of Sh.3.75 million for the next 6 years. The opportunity cost of capital is 18%. Kinoru Ltd. can raise a term loan of Sh.10 million for the project. The term loan will carry an interest rate of 16% and would be repayable in 5 equal annual installments with the first installment falling due at the end of the second year. The balance of the amount required for the project could be raised by issuing equity. The issue cost of equity is expected to be 8%. The corporate tax rate for Kinoru Ltd. is 30%.

**Required:**

Advise the management of Kinoru Ltd. on the validity of the project using the adjusted present value (APV) method. (6 marks)

**(Total: 20 marks)**

**QUESTION THREE**

- (a) Outline three guidelines that could be adopted by companies to effectively manage their accounts payable. (3 marks)
- (b) Describe three components of net agency costs of equity. (3 marks)
- (c) Wagai Ltd., a firm in the alcohol manufacturing industry intends to acquire Karemo Ltd., a beer distributing firm. In a press release, Wagai Ltd. outlines the terms of the merger, which specify that Karemo Ltd.'s shareholders will each receive 0.90 shares of Wagai Ltd. owned. Karemo Ltd. has 1 million shares outstanding. On the day of merger announcement, Wagai Ltd.'s share closed at Sh.20.00 and Karemo Ltd.'s share closed at Sh.15.00. Samuel Omondi is an individual investor who owns 500 shares of Karemo Ltd.

**Required:**

- (i) The cost of the acquisition for Karemo Ltd. based on the current share price. (2 marks)
  - (ii) The number and value of shares of Karemo Ltd. that Samuel Omondi would receive based on the current share price. (2 marks)
- (d) Kinyaga Ltd. is considering to acquire Kianjogu Ltd. Kinyaga Ltd. expects to receive net cash flow of Sh. 9 million from Kianjogu Ltd. in the first year. Kianjogu Ltd. is expected to have earnings before interest and tax (EBIT) of Sh.25 million and interest expense of Sh.5 million in the second year. Kianjogu Ltd. will require reinvestment of an additional 40 percent of its net income to finance its future growth. The applicable marginal tax rate for Kianjogu Ltd. is 30%. After the second year, the net cash flow from Kianjogu Ltd. to Kinyaga Ltd. will grow at a constant rate of 4 percent per annum. The firm has established that 18 percent is the appropriate equity discount rate to apply to this merger. All cash flows occur at the end of the year. The acquisition of Kianjogu Ltd. will cost Kinyaga Ltd. Sh.45 million.

**Required:**

The value of the acquisition. (6 marks)

- (e) Kalokol Ltd. is considering the following five independent projects:

Project	Cost "Sh."	Internal rate of return (IRR)(%)
A	200,000	20
B	600,000	15
C	400,000	12
D	400,000	11
E	400,000	10

**Additional information:**

1. The company has a target capital structure consisting of 40% debt and 60% equity.
2. The company can issue bonds with a yield-to-maturity (YTM) of 11%.
3. The company has retained earnings and the ordinary shares has a market price of Sh.42 per share.
4. The floatation costs associated with issuing new equity are Sh.2 per share.
5. Kalokol Ltd.'s earnings are expected to continue to grow at a rate of 6% per annum.
6. Next year's dividend is forecasted to be Sh.4.
7. The corporate tax rate is 30%.

**Required:**

The optimal capital budget for Kalokol Ltd.

(4 marks)

**(Total: 20 marks)**

**QUESTION FOUR**

- (a) Outline four features of Islamic Insurance (takaful). (4 marks)
- (b) In relation to capital structure of a firm, analyse the following types of risk:
- (i) Business risk. (1 mark)
  - (ii) Sales risk. (1 mark)
  - (iii) Operating risk. (1 mark)
  - (iv) Financial risk. (1 mark)
- (c) Engineers at Bidii Ltd., a motor vehicle manufacturing company have invented a driverless car. The company is ready for pilot production and test marketing. This is expected to cost Sh.20 million and will take six months. The company's management believes that there is 70% chance that the pilot production and test marketing will be successful. In case of success, Bidii Ltd. could build a plant costing Sh.150 million. The plant will generate an annual cash flow of Sh.30 million for 20 years if the demand is high, or an annual cash flow of Sh.20 million if the demand is low. High demand has a probability of 0.6 and low demand has a probability of 0.4. The interest rate is 12%.

**Required:**

Using decision tree analysis, evaluate the optimal course of action.

(7 marks)

- (d) Mwaluganje Ltd. is concerned on whether antitrust regulators would consider its acquisition of Koromojo Ltd. due to antitrust violation. The market in which the two companies operate consists of eight competitors. The largest company has a 25% market share. Mwaluganje Ltd. has the second largest market share of 20%. Each of the five competitors including Koromojo Ltd. has a market share of 10%. The smallest company has a market share of 5%.

**Required:**

Assuming Mwaluganje Ltd. and Koromojo Ltd. attempt to merge:

- (i) Determine the increase in the Herfindahl-Hirschman Index (HHI). (3 marks)
- (ii) Determine the probable action by the antitrust regulators of the merger announcement. (2 marks)

**(Total: 20 marks)**

### QUESTION FIVE

- (a) Discuss four principles of capital budgeting. (4 marks)
- (b) Describe four factors that might affect a company's dividend policy. (4 marks)
- (c) (i) Explain four factors that could lead to financial distress for a company. (4 marks)

- (ii) Uranga Ltd. wishes to determine an acceptable growth rate in sales. While the firm intends to expand, it does not wish to use any external funding to support such an expansion due to the high prevailing interest rates in the market. As a financial analyst, you gather the following data relating to the firm:

Profit margin	10%
Capital intensity ratio	1.2
Dividend payout ratio	50%
Current sales	Sh.100,000
Spontaneous liabilities	Sh.10,000

**Required:**

The maximum growth rate that Uranga Ltd. could sustain without requiring additional external funding.

(5 marks)

- (d) The finance department of Kimulot Ltd. has gathered the following information:

The carrying cost per unit of inventory is Sh.10.

The fixed cost per order is Sh.20.

The number of units required per year is 30,000.

The variable cost per unit ordered is Sh.2.

The purchase cost price per unit is Sh.30.

Assume that an year has 365 days:

**Required:**

Determine the time gap between the two orders.

(3 marks)

(Total: 20 marks)

.....

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	.7865	.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 Periods	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	11.4639	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



# KASNEB

## CIFA PART II SECTION 3

### CORPORATE FINANCE

WEDNESDAY: 23 November 2016.

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) "Mergers and acquisitions have become an essential tool for corporate growth in today's global market place. However, there are instances where firms may seek to acquire their competitors to eliminate competition in the market and obtain market power. To prevent such anticompetitive mergers, most competition authorities have come up with some form of merger review mechanism". Willard Mwemba, Commission Manager for mergers and acquisitions, Common Markets for Eastern and Southern Africa Competition Commission, July 2015.

#### Required:

In the context of the above statement, discuss the following post-offer takeover defence mechanisms:

- (i) Litigation. (1 mark)
  - (ii) Greenmail. (1 mark)
  - (iii) Leveraged recapitalisation. (1 mark)
  - (iv) Crown jewel. (1 mark)
  - (v) White knight. (1 mark)
  - (vi) White square. (1 mark)
- (b) Explain four mechanisms that could be used to motivate managers to act in the best interest of shareholders in a corporate firm. (4 marks)
- (c) Fabtex Ltd. is an expanding clothing retailer which is all equity financed by ordinary share capital of Sh.10 million with a par value of Sh.0.50. The company's annual results have just been announced at the end of October 2016 as follows:
- 1. Pre-tax profits were Sh.4.6 million. Earnings are expected to grow at a rate of 5% per annum in the coming year and for the foreseeable future.
  - 2. Another company, Toddler Garments Ltd., a children's clothing group, has unissued share capital of Sh.33 million with a par value of Sh.1.00. The company's pre-tax profits for the year ended 31 October 2016 were Sh.5.2 million. There is no growth forecast for the current year due to a recent reorganisation and rationalisation program, but subsequently, constant growth in earnings of approximately 6% per annum is predicted.
  - 3. Fabtex Ltd. has approached the shareholders of Toddler Garments Ltd. with a bid of two new shares in Fabtex Ltd. for every three shares of Toddler Garments Ltd. There is a cash alternative of Sh.1.35 per share.
  - 4. Following the announcement of the bid, the market price of Fabtex Ltd. shares reduced while the market price of shares in Toddler Garments Ltd. increased. Statistics for Fabtex Ltd. and two other listed companies in the same industry immediately prior to the bid announcement are as shown below:

2015		Company	Dividend yield (%)	Price to earnings (P/E) ratio
Market price per share High Sh.	Low Sh.			
2.25	1.85	Fabtex Ltd.	3.4	15
1.45	1.15	Toddler Garments Ltd.	3.6	13
1.87	1.22	HR Garments Ltd.	6.0	12
2.30	1.59	SZ Garments Ltd.	2.4	17
5. Both Fabtex Ltd. and Toddler Garments Ltd. pay corporation tax at the rate of 30%.				
6. Fabtex Ltd. cost of capital is 12% while the cost of capital for Toddler Garments Ltd. is 11%.				

Assume you are a corporate financial analyst with a major fund manager. You have funds invested in both Fabtex Ltd. and Toddler Garments Ltd.

**Required:**

- (i) Assess whether the proposed share for the offer is likely to be beneficial to the shareholders of Fabtex Ltd. and Toddler Garments Ltd. (9 marks)
  - (ii) Recommend an investment strategy based on your calculations in (c) (i) above. (1 mark)
- (Total: 20 marks)**

**QUESTION TWO**

- (a) Differentiate between the "trade off theory" and the "pecking order theory" as used in the analysis of capital structure of a firm. (4 marks)
- (b)
  - (i) Explain the term "cash sweep" in relation to leveraged buyouts (LBO). (2 marks)
  - (ii) A leveraged buyout transaction is measured at Sh.1,000 million and has the following characteristics:
    1. Exit occurs in five years at a projected multiple of 1.80 of the company's initial cost.
    2. It is financed with 60% debt and 40% equity.
    3. The Sh.400 million equity investment is composed of:
      - Sh.310 million in preference shares held by the private equity firm.
      - Sh.80 million in equity held by the private equity firm.
      - Sh.10 million held by management equity participation.
    4. Preference shares are guaranteed a 14% compound annual return payable at exit.
    5. The equity of the private equity firm is promised 90% of the company's residual value at exit after creditors and preference shares have been paid.
    6. Management equity receives the other 10% residual value.
    7. By exit, the company will have paid off Sh.350 million of the initial Sh.600 million in debt using operating cash flow.

**Required:**

The payoff multiple of the equity claimants (6 marks)

- (c) The following is an extract of a statement of financial position of ABC Limited for the year ended 31 December 2015:

	Sh."million"		Sh."million"
Cash	150	Accounts payable	600
Accounts receivable	800	Short-term debt	250
Inventories	700	Total current liabilities	850
Total current assets	1,650	Bonds	800
Non-current assets	1,850	Deferred tax	350
Total assets	3,500	Shareholders equity	1,500
		Total equity and liabilities	3,500

**Additional information:**

1. The short term debt relates to a Sh.250 million bank loan with an interest rate of 6% per annum.
2. The bonds have a face value of Sh.800 million and are straight bonds maturing in 2025 with a coupon rate of 7.8% paid annually at the end of the year. At the end of the year 2015, the yield-to-maturity was 8.1% with a bond price of Sh.98.00 per Sh.100 par value.
3. ABC Limited has 50 million ordinary shares issued and outstanding. At the end of year 2015, the share price was Sh.40.
4. The risk free rate is 5%, the stock market risk premium is 6%, and the beta for ABC Limited shares is 1.20.
5. An investment bank proposes a deal in which ABC Limited would reduce its weighted average cost of capital (WACC) by issuing bonds worth Sh.300 million and using the proceeds to repurchase shares, thereby increasing ABC's debt ratio and allowing it to take advantage of increased tax benefits.
6. The corporate tax rate is 30%.

**Required:**

The change in the weighted average cost of capital (WACC) after the change in capital structure as proposed.

(8 marks)

**(Total: 20 marks)**

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Out of 5



### QUESTION THREE

- (a) Explain how the following financial transactions could be used in the management of trade receivables:
- (i) Invoice discounting. (2 marks)
  - (ii) Factoring. (2 marks)
- (b) Citing three reasons, summarise the importance of working capital management in corporate finance. (3 marks)
- (c) Tidco Ltd. is considering extension of credit to a new group of customers. It is expected that the annual sales to this new customer group will be Sh.750,000. This group will on average pay their bills after 60 days. The bad debt losses are expected to be 9% of sales. The credit and allocation department expenses will increase by Sh.45,000 if credit is extended to this group. The company pays corporate tax at the rate of 30%, and its variable costs are 80% of sales. The risk to this group of customers requires a discount rate of 16%.

**Required:**

Determine whether Tidco Ltd. should extend credit to this group of customers. (4 marks)

- (d) The data provided below relates to three firms' dividend payouts over the last six years. None of the companies has issued or cancelled any shares over the period.

	(Sh. "million")					
	2010	2011	2012	2013	2014	2015
<b>Company A</b>						
Shares issued: 1,200 million						
Profit after tax	600	630	580	600	640	660
Dividends declared	240	252	232	240	256	264
<b>Company B</b>						
Shares issued: 2,000 million						
Profit after tax	1,200	1,300	1,580	1,800	1,240	1,460
Dividends declared	120	132	145	160	176	194
<b>Company C</b>						
Shares issued: 3,500 million						
Profit after tax	2,200	1,400	2,100	1,950	2,200	2,560
Dividends declared	200	0	100	0	200	560

**Required:**

- (i) Using appropriate calculations, describe the dividend policy that each of the above three companies appears to be following. (6 marks)
  - (ii) Justify each of the policies identified in (d) (i) above to the shareholders of each of the respective companies. (3 marks)
- (Total: 20 marks)**

### QUESTION FOUR

- (a) (i) Explain four reasons for the Islamic prohibition of interest (riba). (4 marks)
- (ii) Describe three challenges faced by Islamic banking. (3 marks)
- (b) Indept Ltd. has a debt/equity ratio of 20%. The equity beta is 1.30. The risk-free rate is 10% and a return of 16% is expected from the market portfolio. The corporate tax rate is 30%. Indept Ltd. proposes to undertake a project requiring an initial outlay of Sh.10 million, financed partly by equity and partly by debt. The project, a perpetuity, is thought to be able to support the borrowing of Sh.3 million at an annual interest rate of 12%, thus imposing interest charges of Sh.360,000. It is expected to generate pre-tax cash flows of Sh.2.3 million per year.

**Required:**

Using the adjusted present value (APV) approach, advise the management on whether this project is worthwhile. (6 marks)

- (c) Kenyamatt Ltd.'s financial statements extract for the year ended 31 December 2015 is presented below:

**Kenyamatt Ltd.**  
**Financial statements extract for the year ended 31 December 2015**

	Sh."million"
Total revenue	590
Operating variable costs	210
Operating fixed costs	175
Operating income (EBIT)	205
Interest expense	82
Taxes	49
Net income	74

Earnings per share (EPS)	Sh.7.4
Dividends per share (DPS)	Sh.0.18

	Sh."million"
Total assets	975
Long-term debt	820
Total shareholders equity	97

Number of outstanding shares    10 million

Simon Nderitu, a corporate financial analyst is interested in analysing the extent to which the company is utilising leverage.

**Required:**

Compute the following leverage measures for Kenyamatt Ltd. for the year ended 31 December 2015:

- (i) Degree of operating leverage. (2 marks)
  - (ii) Degree of financial leverage. (2 marks)
  - (iii) Degree of total leverage. (3 marks)
- (Total: 20 marks)**

**QUESTION FIVE**

- (a) Describe the following terms in relation to corporate restructuring:

- (i) Equity curve-out. (1 mark)
- (ii) Spin-off. (1 mark)
- (iii) Split-off. (1 mark)
- (iv) Divestiture. (1 mark)
- (v) Liquidation. (1 mark)

- (b) Madeni Ltd. is considering various levels of debt. At present, it has no debt and has a total market value of Sh.15 million. By undertaking financial leverage, it believes that it can achieve a net corporate and personal tax advantage of 20% of the market value of the debt. However, the company is concerned with bankruptcy and agency costs as well as with lenders increasing their required interest rate if the firm borrows too much. The company believes that it can borrow up to Sh.5 million without incurring any of these additional costs. However, each additional Sh.5 million increment in borrowing is expected to result in these three costs being incurred. Moreover, these costs are expected to increase at an increasing rate with financial leverage.

The following table illustrates the present value cost of bankruptcy, agency cost and interest cost under various levels of debt:

Debt level Sh."million"	5	10	15	20	25	30
Present value cost of bankruptcy, agency and increased interest rates (Sh."million")	0	0.6	1.2	2	3.2	5

**Required:**

The optimal amount of debt for the company.

(4 marks)



- (c) Microcam Ltd. operates a number of high definition cameras and is evaluating whether it is optimal to operate new cameras for two, three or four years before replacing them. The managers have estimated the investment outlay, annual after tax operating expenses and after tax salvage cash flows for each of the service lives. The cost of funds is 10%.

Service life (years)	Investment Sh.	Year 1 Sh.	Year 2 Sh.	Year 3 Sh.	Year 4 Sh.	Salvage Sh.
2	(40,000)	(12,000)	(15,000)			20,000
3	(40,000)	(12,000)	(15,000)	(20,000)		17,000
4	(40,000)	(12,000)	(15,000)	(20,000)	(25,000)	12,000

**Required:**

Compute the optimal service life for Microcam Ltd.'s high definition cameras.

(6 marks)

- (d) Kirimatt Ltd. has a debt to equity ratio of 40% and 60% respectively. The required rate of return on debt and equity is 7% and 12.5% respectively. The corporate tax rate is 30%. The firm is considering investing in a new project with perpetual stream of pre-tax cash flows of Sh.11.3 million per annum. The project has the same risk as the average project of the firm. The initial investment is Sh.125 million which is financed by 20% debt.

**Required:**

- (i) Using adjusted weighted average cost of capital (AWACC) approach, compute the net present value (NPV) of the project.

(4 marks)

- (ii) Advise the management on the viability of the project.

(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:

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

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



# KASNEB

## CIFA PART II SECTION 3

### CORPORATE FINANCE

WEDNESDAY: 25 May 2016.

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) Summarise three disadvantages of common models used for predicting corporate failure. (3 marks)
- (b) (i) Propose three reasons why a company could participate in a share repurchase exercise. (3 marks)
- (ii) Describe three methods that could be used by companies to repurchase shares. (3 marks)
- (c) EAPL Limited is considering raising money for repurchasing 200,000 shares. The company's outstanding shares before the share repurchase exercise are 6.2 million and the respective earnings per share (EPS) is Sh.8.00. The market price per share (MPS) at the time of repurchase is Sh.100.00. The prevailing after-tax cost of borrowing is 12%.

**Required:**

The earnings per share (EPS) after the share repurchase. (4 marks)

- (d) The dividend policy of Clyton Ltd. can be represented by a gradual adjustment to a target dividend payout ratio. The earnings per share (EPS) and dividend per share (DPS) of the company for the previous financial year were Sh.9.00 and Sh.1.80 respectively. It is estimated that the EPS will be Sh.12.00 for the current year. Clyton Ltd. has a 20% target dividend payout ratio and uses a 10-year period to adjust its dividend.

**Required:**

The expected dividend per share for the current year. (3 marks)

- (e) An investment analyst gathered the following information about a private company and its publicly traded competitor:

Comparable companies	Tax rate (%)	Debit/equity	Equity beta
Private company	27	1.00	N/A
Public company	30	0.80	1.86

Note: N/A means "not applicable".

**Required:**

The estimated equity beta for the private company using the pure-play method. (4 marks)

**(Total: 20 marks)**

#### QUESTION TWO

- (a) Highlight five benefits that could accrue to a corporation that continuously measures the performance of its managers. (5 marks)
- (b) Beyond the pure comparison of the capital structures, it is equally or even more imperative to identify and understand the country-specific factors that explain the cross-country differences.

**Required:**

In relation to the above statement, examine three factors that might be used to explain most capital structure differences in an international comparison. (3 marks)

- (c) Citam Investment Group (CIG) owns a significant shareholding in Millennium Bank Ltd. (MBL). MBL contemplates increasing the proportion of debt in their company's capital structure. Raichura Ranchu, an investment and financial analyst who consults for CIG, is concerned that any changes in MBL's capital structure would negatively affect the value of CIG's investment.

Raichura has gathered the following information regarding MBL to evaluate the potential impact of such a capital structure change on CIG's investment:

Current selected financial information for MBL	
Yield to maturity on debt	16%
Market value of debt	Sh.200 million
Number of shares	20 million
Current market price per share (MPS)	Sh.60.00
Cost of capital (if the firm is all equity financed)	11.2%
Marginal tax rate	30%

It is expected that an increase in MBL's financial leverage would lead to an increase in its cost of debt and equity. According to previous statistics of firms in MBL's industry, Raichura estimates the cost of debt and the cost of equity at various debt-to-total capital ratios to be as shown in the table below:

Estimates of MBL's before-tax costs of debt and equity		
Debt-to-total capital ratio (%)	Cost of debt (%)	Cost of equity
21	8.9	13.6
32	9.5	14.1
43	10.4	15.3
54	11.5	17.2

**Required:**

- (i) The current capital structure of MBL. (3 marks)
  - (ii) The current after-tax cost of debt and cost of equity for MBL. (4 marks)
  - (iii) Debt-to-total capital ratio that would minimise MBL's weighted average cost of capital (WACC). (5 marks)
- (Total: 20 marks)**

**QUESTION THREE**

- (a) Interpret the following terms as used in Islamic finance:
  - (i) Murabaha. (1 mark)
  - (ii) Ijara. (1 mark)
  - (iii) Muduraba. (1 mark)
  - (iv) Musharaka. (1 mark)
  - (v) Sukuk. (1 mark)
- (b) Outline three objectives of short-term borrowing strategy. (3 marks)
- (c) Kagio Traders Ltd. (KTL) is a small company with high prospects of growth. In the last one year, KTL has experienced problems in developing a sound short-term borrowing strategy. In relation to this, KTL has recently consulted Samson Mwashumba, an investment and financial analyst to help the company in developing the most cost effective form of short-term borrowing strategy. Mwashumba's initial task is to evaluate three possible means of borrowing Sh.2 million for one month as indicated below:
  1. Drawing down on a line of credit with an interest rate of 14.4% per annum and a 0.5% per annum commitment fee on the full amount with no compensating balances.
  2. A bankers acceptance at an interest rate of 14.2% per annum, an all inclusive rate.
  3. A commercial paper at an interest rate of 13.8% per annum with a dealer's commission of 0.25% and a backup line cost of a 0.33% per annum, both of which would be assessed on the Sh.2 million commercial paper issued.

**Required:**

The form of borrowing that would result in the lowest cost of credit.

(12 marks)  
**(Total: 20 marks)**  
**CF32 Page 2**  
**Out of 4**

#### QUESTION FOUR

- (a) Evaluate three disadvantages of using comparable company analysis approach of valuing firms undertaking mergers and acquisitions. (3 marks)
- (b) Kimbo Ltd. is planning to acquire Kasuku Ltd. As a corporate financial analyst, you have been tasked by Kimbo Ltd. to estimate a fair acquisition price for Kasuku Ltd.

##### Additional information:

1. Kasuku Ltd. has 20,000,000 outstanding shares and no debt. It is estimated that the post-merger free cash flows (FCF) from Kasuku Ltd. would be Sh.30 million, Sh.34 million, Sh.40 million and Sh.46 million at the end of year 1, year 2, year 3 and year 4 respectively.
2. After year 4, it is projected that the free cash flow would grow at a constant rate of 7.5% annually. The appropriate discount rate is estimated to be 12%. It is also estimated that after four years, Kasuku Ltd. would be worth 25 times its free cash flow at the end of year 4.
3. Three companies, Joma Ltd., Elianto Ltd. and Golden Ltd. are comparable to Kasuku Ltd. Three recent takeover transactions similar to the takeover of Kasuku Ltd. have been identified, namely Peto Ltd., Diso Ltd. and Kero Ltd. and it is further believed that price-to-earnings, price-to-sales, and price-to-book value price multiples of these companies could be used to estimate the value of Kasuku Ltd.

The relevant data for the three comparable companies together with that of Kasuku Ltd. are as follows:

Valuation variables	Joma Ltd. Sh.	Elianto Ltd. Sh.	Golden Ltd. Sh.	Kasuku Ltd. Sh.
Market price per share	45.00	24.00	52.00	32.00
Earnings per share	4.02	2.26	3.04	2.86
Sales per share	21.32	15.44	19.30	18.36
Book value per share	16.32	8.36	12.50	11.02

In addition, the relevant data for the three recently acquired companies is as shown in the table below:

Valuation variables	Peto Ltd. Sh.	Diso Ltd. Sh.	Kero Ltd. Sh.
Pre-takeover share price	25.80	44.40	30.00
Acquisition share price	29.00	53.00	35.10
Earnings per share (EPS)	2.80	3.20	2.70
Sales per share	11.06	21.82	30.86
Book value per share	9.38	11.28	10.34

##### Required:

- (i) The present value per share of Kasuku Ltd. using the discounted cash flow approach if the terminal value of Kasuku Ltd. is based on using the constant growth model to determine terminal value. (3 marks)
- (ii) The value per share of Kasuku Ltd. using the discounted cash flow approach if the terminal value of Kasuku Ltd. is based on using the cash flow multiple method to determine terminal value. (3 marks)
- (iii) The average share price of Kasuku Ltd. for the three relative valuation ratios, given that it is traded at the mean of the three valuations. (4 marks)
- (iv) Estimate the fair acquisition price of Kasuku Ltd. based on the comparable company approach, taking into account the mean takeover premium on recent comparable takeovers. (3 marks)
- (v) The fair acquisition share price of Kasuku Ltd. using the comparable transaction approach. (4 marks)

(Total: 20 marks)



### QUESTION FIVE

- (a) Although the principles of capital budgeting might seem straight forward, applying the principles to real world investment opportunities could be challenging.

**Required:**

Discuss three mistakes that corporate financial analysts might make when analysing capital budgeting projects. (3 marks)

- (b) Although the capital budgeting model is widely employed in measuring income and valuing projects, financial analysts also use other procedures to divide up the cash flows from a company or project and then value them using discounted cash flow methods.

**Required:**

Describe the following models for measuring income and valuing assets:

- (i) Economic profit model. (2 marks)
- (ii) Residual income model. (2 marks)
- (iii) Claims valuation model. (2 marks)
- (c) Edward Mutemi, an investment and financial analyst working with Fiduciary Financial Services (FFS) is evaluating a project for one of his clients operating in the electronics sector, Fantec Solutions Ltd.

The following information relates to the project:

- Fixed capital outlay is Sh.3 billion.
- Investment in net working capital is Sh.0.8 billion.
- The project is expected to have a useful life of 12 years.

**Additional information:**

1. Fantec Solutions Ltd. adopts a straight-line depreciation method over a 6-year period with zero salvage value.
2. Additional annual revenues are expected to be Sh.0.2 billion.
3. Annual cash operating expenses will be reduced by Sh.0.5 billion.
4. The capital equipment will be sold for Sh.1.00 billion in year 12.
5. The corporate tax rate is 30%.
6. The project required rate of return is 10%.

**Required:**

- (i) The annual after-tax operating cash flows for year 1 to year 6. (2 marks)
- (ii) The annual after-tax operating cash flows for year 7 to year 12. (1 mark)
- (iii) The initial project outlay. (2 marks)
- (iv) The terminal year after-tax non-operating cash flow. (3 marks)
- (v) The net present value of the project. (3 marks)

**(Total: 20 marks)**

.....

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	.4655	.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:

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

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

# KASNEB

## CIFA PART II SECTION 3

### CORPORATE FINANCE

WEDNESDAY: 25 November 2015.

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) Outline four reasons why organisations undertake corporate restructuring. (4 marks)
- (b) Queens Ltd. is considering a project with the following cash flows:

Year	Cost of Plant Sh. "000"	Running costs Sh. "000"	Savings Sh. "000"
0	20,000		
1		8,000	24,000
2		10,000	28,000

Queens Ltd.'s cost of capital is 18%.

#### Required:

- (i) The sensitivity of the project to changes in the levels of cost of plant, running costs and savings.

**Hint:** Consider each factor at a time and assume each factor is varied adversely by 10%. (8 marks)

- (ii) Comment on the factor which is most sensitive to adverse variations. (1 mark)

- (c) The following information was extracted from the financial statements of BMK Ltd:

#### Sh. "million"

Credit sales	50,000
Cost of goods sold	40,000
Accounts receivable	5,000
Opening inventory	4,000
Closing inventory	4,600
Accounts payable	3,400

Assume a year has 365 days.

#### Required:

BMK Ltd.'s net operating cycle.

(7 marks)

**(Total: 20 marks)**

#### QUESTION TWO

- (a) Nobel prize winning economists Franco Modigliani and Merton Miller (MM) advanced the capital structure irrelevance theory that postulates that given certain assumptions, a firm's choice of capital structure does not affect its value.

#### Required:

In relation to the above statement, explain three assumptions underlying the capital structure irrelevance theory.

(6 marks)

- (b) Highlight five indicators of a possible business failure. (5 marks)

- (c) Bitco Ltd. is considering a project involving the purchase of a new equipment with the following characteristics:

1. The equipment costs Sh.350,000 and an additional Sh.110,000 is needed to install it.
2. The equipment will be depreciated using straight-line basis to zero over a five-year life period.



3. The equipment will generate an additional annual revenue of Sh.265,000 and will have annual cash operating expenses of Sh.83,000.
4. The equipment will be sold for Sh.85,000 after five years.
5. An inventory investment of Sh.73,000 is required during the life of the investment.
6. Bitco Ltd. is in the 30% tax bracket.
7. The cost of capital is 10%.

**Required:**

- (i) The net present value (NPV) of the project. (8 marks)
  - (ii) Advise the management of Bitco Ltd. on whether to purchase the equipment. (1 mark)
- (Total: 20 marks)**

**QUESTION THREE**

- (a) Examine five pre-offer takeover mechanisms available to a target company prior to any hostile takeover action by a predator. (10 marks)
- (b) Kubwa Ltd. intends to undertake a complete share acquisition of Ndogo Ltd. Kubwa Ltd. is offering three of its shares for every two shares of Ndogo Ltd. The information below relates to the two companies:

	Kubwa Ltd. Sh.	Ndogo Ltd. Sh.
Earnings to ordinary shareholders	6,270,930	3,430,000
Earnings per share (EPS)	15.9	30.50
Market price per share (MPS)	236	340

The corporate tax is 30%.

**Required:**

- (i) The maximum offer price that will not dilute the EPS of Kubwa Ltd. (3 marks)
- (ii) The premium payable to the shareholders of Ndogo Ltd. (4 marks)
- (iii) The combined growth rate of the two companies given that the rate of growth of Kubwa Ltd. is 9% per annum and that of Ndogo Ltd. is 13% per annum. (3 marks)

**(Total: 20 marks)**

**QUESTION FOUR**

- (a)
  - (i) Describe the term "real options" as used in capital budgeting. (2 marks)
  - (ii) Assess four types of real options. (8 marks)
- (b) Mkombozi Ltd. operates a machine with the following characteristics:

1. The purchase cost of the machine is Sh.25,000,000.
2. The running costs (cash expenses) and resale value (end of year) values of the machine are as shown in the table below:

	Year 1	Year 2	Year 3	Year 4
Running costs (Sh. "000")	7,500	11,000	12,500	15,000
Resale value (Sh. "000")	15,000	10,000	7,500	2,500

3. The company's cost of capital is 10%.

**Required:**

Evaluate how frequently the machine should be replaced.

(10 marks)  
**(Total: 20 marks)**

### QUESTION FIVE

- (a) While Islamic finance industry represents a fraction of the global financial markets, it has grown at double-digit rates in recent years. By some estimates, total assets held globally under Islamic finance has surpassed 1 trillion United States dollar mark. In addition, Islamic banks have proved to be more resilient than conventional banks to the immediate effects of the international financial crisis and global economic downturn. Some analysts have attributed this resilience to the adherence to strict Islamic principles.

**Required:**

In relation to the above statement, discuss five principles of Islamic finance.

(10 marks)

- (b) Makwetu Ltd., a firm listed at AFDAQ Securities Exchange is financed by 20,000,000 ordinary shares and 10% Sh.100 million irredeemable debentures. The market price per ordinary share is Sh.22 (ex-div) with an expected perpetual dividend of Sh.5 per annum.

**Additional information:**

1. The debentures are considered to be risk-free and are valued at par.
2. The board of directors of Makwetu Ltd. is contemplating investing in a project which costs Sh.25 million and generates annual before tax cash inflows of Sh.4.4 million indefinitely.
3. The beta of the project is estimated to be 1.5.
4. The return from a well-diversified market portfolio is 18%.

**Required:**

- (i) The weighted average cost of capital of the company. (3 marks)
- (ii) The beta of the company. (2 marks)
- (iii) The beta of an equivalent ungeared company (ignore taxes). (2 marks)
- (iv) Advise the company on whether the project should be accepted. (3 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:

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

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



# KASNEB

## CIFA PART II SECTION 3

### CORPORATE FINANCE

#### PILOT PAPER

September 2015.

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) Explain the prime objective of inventory management. (3 marks)
- (b) The following information relates to the inventory of MK Ltd.:
1. Annual purchases amount to Sh.1,080,000.
  2. Purchase price per unit is Sh.30.
  3. Carrying cost is 15% of the purchase price.
  4. Cost per order is Sh.120.
  5. Desired stock level is 1,500 units. The stock level was achieved at the start.
  6. Lead time is 7 days.

#### Required:

- (i) The economic order quantity. (4 marks)
- (ii) The optimal number of orders to be placed in a year. (2 marks)
- (iii) The re-order level. (3 marks)
- (iv) Assume that for any orders of at least 1,800 units, the firm will get 5% discount on the purchase price. Analyse whether the company should take advantage of the discount or not. (8 marks)

(Total: 20 marks)

#### QUESTION TWO

- (a) Highlight any four factors to be taken into account when making capital structure decisions. (6 marks)
- (b) A Ltd. and B Ltd. are two firms operating in the printing industry. The companies have the same business risk and are almost identical in all material aspects except in their capital structures as indicated below:

	A Ltd. Sh."million"	B Ltd. Sh."million"
Ordinary shares	20	25
Share premium	45	8
Retained profit	<u>36.5</u>	<u>44</u>
	101.5	77
12% debenture	<u>-</u>	<u>25</u>
	<u>101.5</u>	<u>102</u>

The nominal value of each share of A Ltd. is Sh.25 and is currently trading at Sh.140 each. The nominal value of each share of B Ltd. is Sh.100 and is currently trading at Sh.400 each. Debentures of B Ltd. are currently selling at par of Sh.100 per bond. Earnings before interest and tax in both firms are Sh.25 million per annum and corporate tax is payable at the rate of 30%.

#### Required:

- (i) Assume you own 10% of ordinary shares of B Ltd. Using the Modigliani and Miller (MM) arguments, explain what action you would take in the above scenario to maximise your return. (Hint: use the arbitrage approach) (5 marks)
- (ii) Calculate the arbitrage profit, if any from your action in (b) (i) above. (5 marks)
- (iii) If A Ltd. borrows Sh.20 million, calculate its effect on the company's cost of capital according to MM theory. (4 marks)

(Total: 20 marks)

### QUESTION THREE

- (a) The Alpha Company Ltd. expects with some degree of certainty to generate the following net income and to have the following capital expenditure during the next five years:

Year	1	2	3	4	5
Net income Sh."million"	200	150	200	230	160
Capital expenditure Sh."million"	100	150	300	150	200

The company currently has 100 million shares of ordinary stock outstanding and pays dividends of Sh.1 per share. The company's target debt/equity ratio is 0.25.

#### Required:

- The dividend per share and total external financing from the issue of debt and issue of new equity required in each year if dividend policy is treated as a residual decision. (3 marks)
  - The dividend per share and amount of debt and new equity to be issued if a dividend payout ratio of 50% is maintained. (3 marks)
  - The amount in new issues of debt and equity to be raised each year if the present dividend per share is maintained. (3 marks)
- (b) Maridadi Ltd. is considering buying an equipment for its manufacturing processes. The equipment would cost Sh.24,500,000. The company has made the following estimates of the after tax cash flows in each year over the equipment's possible life of 2 years.

Year 1		Year 2	
Net Cash Flow Sh.	Probability	Net Cash Flow Sh.	Probability
15,350,000	0.5	12,280,000	0.7
		18,430,000	0.3
12,500,000	0.5	24,050,000	0.4
		30,700,000	0.6

The outcome of year 2 cash flow is dependent on the outcome of year 1 cash flow. The company uses 12% discounting rate for the appraisal of investment projects.

#### Required:

- The equipment's expected net present value (NPV). (7 marks)
- The project's net present value (NPV) and its probability if the worst outcome occurs. (2 marks)
- The projects net present value (NPV) and its probability if the best outcome occurs. (2 marks)

(Total: 20 marks)

### QUESTION FOUR

- In the context of corporate setup, explain any four causes of conflict between shareholders and the management. (4 marks)
  - Discuss the signs (symptoms) of financial distress in an organisation. (4 marks)
- The following is the summarised financial information of Keys Ltd.:

Income statement			
	2012 Sh."000"	2013 Sh."000"	2014 Sh."000"
Turnover	76,270	89,410	102,300
Taxable income	10,140	12,260	14,190
Taxation	(3,549)	(4,291)	(4,966)
Net income	6,591	7,969	9,224
Dividend	(2,335)	(2,557)	(2,800)
Retained earnings	4,256	5,412	6,424

**Statement of financial position:****2014**

	Sh. "000"	Sh. "000"
Non-current assets		54,000
Current assets	39,700	
Current liabilities	(26,200)	<u>13,500</u>
		<u>67,500</u>
<b>Financed by:</b>		
Ordinary shares (Sh.10 par)		20,000
Reserves		32,500
10% debentures (Sh.100 par)		<u>15,000</u>
		<u>67,500</u>

As a result of recent capital investment, stock market analysts expect post tax earnings and dividends to increase by 25% per annum for the next two years and then to revert to the company's existing growth rate. Key Ltd.'s overall asset beta is 0.763 and the beta coefficient of equity is 0.82. The risk free rate is 12% and the market return is 17%. The current market price of Key Ltd.'s ordinary shares is Sh.35.40 cum 2014 dividend and the debenture price is Sh.89.50 ex-interest. Corporate tax rate is 30%.

**Required:**

- (i) Estimate what a fundamental analyst might consider to be the current intrinsic value of the company's shares. (Hint: cost of equity may be estimated using APM). (10 marks)
- (ii) Comment on the significance of your estimate for the fundamental analyst in (b) (i) above. (2 marks)

**(Total: 20 marks)****QUESTION FIVE**

- (a) Tala Pharmaceutical Company Ltd., a public quoted company, intends to raise additional share capital through a rights issue. The number of issued ordinary shares currently stands at 100 million ordinary shares. Each shareholder will have a right to purchase one ordinary share for every five shares currently held. The current market price per share is Sh.60 while the subscription price has been fixed at Sh.50 per share.

**Required:**

- (i) The theoretical ex-right market price per share. (3 marks)
- (ii) The theoretical value of each right. (2 marks)
- (iii) Evaluate the impact of the rights issue on the value of wealth of a shareholder who owns 500,000 ordinary shares of the company and Sh.5,000,000 in his savings account assuming that the shareholder will:
  - Exercise all his rights. (3 marks)
  - Sell all his rights. (3 marks)
  - Exercise 70% of his rights and sell the balance. (3 marks)
  - Ignore the rights issue. (2 marks)
- (b) Nono Ltd. is contemplating acquiring Konda Ltd. on a share for share exchange. Nono Ltd. is offering 3 of its shares for every 2 shares of Konda Ltd.

The financial data relating to the two companies are shown below:

	Nono Ltd. Sh.	Konda Ltd. Sh.
Earnings attributable to owners	5,190,360	2,340,000
Earnings per share (EPS)	14.80	29.25
Market price per share (MPS)	222	322

The corporate tax rate is 30%.

**Required:**

- (i) The maximum offer price that will not dilute the earnings per share (EPS) of Nono Ltd. (2 marks)
- (ii) The total premium payable to the shareholders of Konda Ltd. (2 marks)

**(Total: 20 marks)**