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CPA PART III SECTION 5

ADVANCED FINANCIAL MANAGEMENT

THURSDAY: 20 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) Citing four reasons, argue the case why firms undertake capital rationing decisions in your country. (4 marks)

(b) You have been appointed by Biosoft Limited to review three investment project proposals. The investment funds are limited to Sh.8,000,000 in the current financial year. Details of the three possible investment projects, none of which can be delayed are given below:

Project 1: An investment of Sh.3,000,000 in workstation assessments. Each assessment would be on an individual employee basis and would lead to a saving in labour costs from increased efficiency and reduced absenteeism. In money terms, the savings in labour costs are expected to be as follows:

Year	1	2	3	4	5
Cash Flow (Sh. "000")	850	900	950	1,000	950

Project 2: An investment of Sh.4,500,000 in individual workstations for staff that is expected to reduce administration costs by Sh.1,408,000 per annum in money terms for the next five years.

Project 3: An investment of Sh.4,500,000 in new ticket machines. A net cash savings of Sh.1,200,000 per annum is expected in current money terms and is projected to increase by 3.6% per annum due to inflation during the five years life of the machines.

The money cost of capital for Biosoft Limited is 12%.

Required:

Advise the company on the project(s) to invest the available funds and calculate the resultant net present value (NPV) assuming:

(i) The three projects are divisible. (7 marks)

(ii) None of the projects is divisible. (3 marks)

(c) Dafina Limited is an export - import firm based in Kenya.

On 1 August 2020, the company exported tea to the United States of America (USA) on a 3-month credit amounting to US\$10,000,000.

Additional information:

1. The rates in the forex and money market were as follows:

	Ksh/1US\$
1 August 2020	105
1 December 2020	101
	Interest rates (per annum)
Kenya	18%
USA	12%

2. The customer will settle the amount on 1 December 2020.

Required:

- (i) Using the interest rate parity, determine the expected 3-months forward exchange rate as at 1 December 2020. (2 marks)
- (ii) Using suitable computations, advise Dafina Limited on the better hedging strategy between a forward market and money market hedge. (4 marks)
- (Total: 20 marks)**

QUESTION TWO

- (a) In this era of globalisation, the functions of finance executives of multinational corporations (MNCs) have become complex.

Propose five factors that the Chief Finance Officer (CFO) of a MNC should consider in making international financial management decisions. (5 marks)

- (b) The arbitrage pricing theory (APT) and the capital asset pricing model (CAPM) have received much attention from practitioners and academicians for their use in asset pricing and valuation.

Required:

Explain the difference between APT and the CAPM with respect to:

- (i) Investor utility functions. (2 marks)
- (ii) Distribution of returns. (2 marks)
- (iii) The market portfolio. (2 marks)
- (c) Zachary Mosomi, an investor holds the following portfolio of four risky assets and a deposit in a risk-free asset.

He has provided the information below:

Asset	Weighting (%)	Current return (%)	Beta
A	20	12	1.5
B	10	18	2.0
C	15	14	1.2
D	25	8	0.9
Risk-free asset	30	5	0

The overall return on the market portfolio of risky assets is 11%.

Required:

- (i) Portfolio return and beta. (2 marks)
- (ii) Using the results in (i) above, deduce the type of investor Zachary is. (1 mark)
- (iii) Using suitable computations, determine the assets that are inefficient, efficient or super efficient. (4 marks)
- (iv) Calculate the equilibrium return for the portfolio. (2 marks)
- (Total: 20 marks)**

QUESTION THREE

- (a) (i) Explain the meaning of the term "unbundling" as used in corporate restructuring and reorganisation. (2 marks)
- (ii) Describe four forms of unbundling a firm. (4 marks)

- (b) Bamboo Ltd. is currently an unlevered firm. The firm is expected to generate a constant operating profit (EBIT) of Sh.20 million per annum in perpetuity. The firm's current market value is Sh.80 million.

The management is considering undertaking an expansion activity by use of debt financing. The firm's financial analysts have estimated that the present value of any future financial distress cost is Sh.8 million. However, the probability of distress would increase with leverage according to the following schedule:

Value of debt Sh. "million"	Probability of financial distress (%)	Pre-tax cost of debt (%)
2.5	0.00	4
5.0	1.25	6
7.5	2.5	10
10	6.25	15
12.5	12.50	18
15	31.25	20
20	75	22

Corporation tax rate applicable is 30%.

Required:

- The current cost of equity and weighted average cost of capital (WACC) of the firm. (2 marks)
 - Using the "pure" Modigliani and Miller (MM) with tax model, determine the optimal level of debt. (4 marks)
 - Evaluate the firm's optimal capital structure when financial distress costs are included. (8 marks)
- (Total: 20 marks)

QUESTION FOUR

- Evaluate five defensive tactics available to a firm threatened by a hostile takeover in the industry. (5 marks)
- Apco Limited is considering to acquire Alpha Limited. The following are the financial data for the two companies:

	Apco Limited	Alpha Limited
Net sales (Sh.)	350,000	45,000
Profit after tax (Sh.)	18,130	3,750
Number of outstanding ordinary shares	7,500	1,500
Earnings per share (EPS)	3.75	2.50
Dividend per share (DPS)	1.30	0.60
Total market capitalization (Sh.)	420,000	45,000

Required:

- Determine the pre-merger market value per share for both companies. (2 marks)
 - Determine the post merger EPS, market price per share (MPS) and price earnings (P/E) ratio. (3 marks)
 - Compare Apco Limited's EPS assuming Alpha Limited's shareholders are offered Sh.100,000, 5% convertible debenture for each share held in Alpha Limited.
- Assume a corporate tax rate of 30%. (2 marks)
- Makazi Ltd.'s current earnings per share is Sh.6.0. The firm has in issue 50 million ordinary shares which have a par value of Sh.20 each. The firm's total revenue and capital reserves amounts to Sh.500 million.

The company has an asset beta of 0.9 and a retention ratio of 60%.

The management of Makazi Ltd. intends to undertake a financial reconstruction which will result in a debt-equity ratio change from 0.45 to 0.2.

Additional information:

1. The risk free rate of return is 8%.
2. Expected rate of return of a market portfolio is 18%.
3. Corporation tax rate is 30%.
4. The firm's return on equity before and after the financial reconstruction will remain unchanged.

Required:

Evaluate the impact of the financial reconstruction on the firm's share price.

(8 marks)

(Total: 20 marks)

QUESTION FIVE

- (a) Discuss four circumstances in which a decision could be made to liquidate a failing company rather than attempt to carry out a reconstruction. (4 marks)
- (b) Examine four advantages of investing in real estate. (4 marks)
- (c) Zedtech Ltd. wishes to design a new product so as to catch the interest of their target market which is currently very competitive.

The company will have to invest Sh.100,000 at the beginning of the first year (year 0) for the design and model testing of the new product.

The company's marketing manager believes that there is an 80% chance that this phase will be successful and the project will continue. If phase 1 is not successful, the project will be abandoned with zero salvage value.

The next phase, if undertaken would consist of making the moulds and producing ten prototype products at a cost of Sh.500,000 at the end of the first year. If the products test well, the company would go into full scale production. If they do not, the moulds and prototypes will all be sold for Sh.400,000. The manager estimates that there is a 90% probability that the products will pass testing and phase 3 will be undertaken.

Phase 3 consists of changing over the firm's current production line so as to be able to produce the new products. This will cost Sh.1,000,000 at the end of year 2. If the economic conditions are favourable at this juncture, the net value of the firm's cash flows are estimated to be Sh.3,500,000, while if the economic conditions are unfavourable the net cash inflows are estimated at Sh.2,500,000. Both net cash flows are expected at the end of year 3, and the two states of economy are equally likely.

The firm's opportunity cost of capital is 11%.

Required:

- (i) Construct a decision tree to depict payoffs, and hence determine the expected net present value (NPV) of the project. (6 marks)
- (ii) The project's expected standard deviation and coefficient of variation. (5 marks)
- (iii) Assuming the firm's average project had a coefficient of variation of between 1.0 and 2.0, explain whether the project would be of high, low or average risk. (1 mark)

(Total: 20 marks)

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(b)

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	0.7834	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	0.5129	0.4552
4	0.9610	0.9238	0.8985	0.8748	0.8527	0.8319	0.8125	0.7946	0.7784	0.7630	0.7483	0.7342	0.7206	0.7075	0.6949	0.6828	0.6123	0.5483	0.5367	0.4791
5	0.9515	0.9057	0.8826	0.8619	0.8425	0.8243	0.8073	0.7915	0.7766	0.7624	0.7488	0.7357	0.7230	0.7107	0.6988	0.6873	0.6083	0.5443	0.5327	0.4751
6	0.9420	0.8880	0.8675	0.8493	0.8320	0.8158	0.8007	0.7866	0.7733	0.7606	0.7484	0.7365	0.7250	0.7138	0.7028	0.6920	0.6050	0.5409	0.5293	0.4717
7	0.9327	0.8706	0.8521	0.8359	0.8195	0.8043	0.7899	0.7764	0.7638	0.7516	0.7397	0.7281	0.7168	0.7057	0.6948	0.6840	0.5989	0.5347	0.5231	0.4655
8	0.9235	0.8535	0.8370	0.8217	0.8062	0.7918	0.7781	0.7652	0.7527	0.7405	0.7286	0.7170	0.7057	0.6946	0.6837	0.6729	0.5887	0.5244	0.5128	0.4552
9	0.9143	0.8358	0.8204	0.8059	0.7903	0.7765	0.7634	0.7509	0.7387	0.7267	0.7149	0.7034	0.6921	0.6810	0.6701	0.6593	0.5750	0.5106	0.4990	0.4414
10	0.9053	0.8203	0.8059	0.7922	0.7765	0.7634	0.7509	0.7387	0.7267	0.7149	0.7034	0.6921	0.6810	0.6701	0.6593	0.6485	0.5641	0.4996	0.4880	0.4304
11	0.8963	0.8043	0.7909	0.7779	0.7621	0.7498	0.7379	0.7262	0.7147	0.7033	0.6921	0.6810	0.6701	0.6593	0.6485	0.6378	0.5533	0.4887	0.4771	0.4195
12	0.8874	0.7885	0.7761	0.7639	0.7480	0.7356	0.7239	0.7124	0.7011	0.6900	0.6791	0.6683	0.6575	0.6468	0.6361	0.6254	0.5408	0.4761	0.4645	0.4069
13	0.8787	0.7730	0.7616	0.7493	0.7334	0.7210	0.7094	0.6981	0.6871	0.6762	0.6654	0.6547	0.6440	0.6333	0.6226	0.6120	0.5273	0.4625	0.4509	0.3933
14	0.8700	0.7579	0.7475	0.7351	0.7191	0.7067	0.6950	0.6839	0.6730	0.6622	0.6514	0.6407	0.6300	0.6193	0.6086	0.5980	0.5132	0.4483	0.4367	0.3791
15	0.8613	0.7430	0.7336	0.7211	0.7051	0.6927	0.6809	0.6698	0.6589	0.6481	0.6373	0.6266	0.6159	0.6052	0.5945	0.5839	0.4989	0.4339	0.4223	0.3647
16	0.8528	0.7284	0.7200	0.7074	0.6914	0.6790	0.6671	0.6561	0.6453	0.6345	0.6238	0.6131	0.6024	0.5917	0.5810	0.5704	0.4853	0.4199	0.4083	0.3507
17	0.8444	0.7142	0.7068	0.6941	0.6781	0.6657	0.6538	0.6428	0.6320	0.6212	0.6105	0.6000	0.5893	0.5786	0.5680	0.5574	0.4722	0.4066	0.3950	0.3374
18	0.8360	0.7002	0.6938	0.6810	0.6650	0.6526	0.6407	0.6297	0.6189	0.6081	0.5974	0.5867	0.5760	0.5653	0.5547	0.5441	0.4588	0.3931	0.3815	0.3239
19	0.8277	0.6864	0.6809	0.6680	0.6520	0.6396	0.6277	0.6167	0.6059	0.5951	0.5844	0.5737	0.5630	0.5523	0.5417	0.5311	0.4457	0.3799	0.3683	0.3107
20	0.8195	0.6730	0.6685	0.6555	0.6395	0.6271	0.6152	0.6042	0.5934	0.5826	0.5719	0.5612	0.5505	0.5398	0.5291	0.5185	0.4330	0.3671	0.3555	0.2979
21	0.8114	0.6598	0.6563	0.6432	0.6272	0.6148	0.6029	0.5919	0.5811	0.5703	0.5596	0.5489	0.5382	0.5275	0.5168	0.5062	0.4206	0.3546	0.3430	0.2854
22	0.8034	0.6468	0.6443	0.6311	0.6151	0.6027	0.5908	0.5798	0.5690	0.5582	0.5475	0.5368	0.5261	0.5154	0.5047	0.4941	0.4084	0.3423	0.3307	0.2731
23	0.7954	0.6342	0.6327	0.6194	0.6034	0.5910	0.5791	0.5681	0.5573	0.5465	0.5358	0.5251	0.5144	0.5037	0.4930	0.4824	0.3965	0.3303	0.3187	0.2611
24	0.7876	0.6217	0.6202	0.6068	0.5908	0.5784	0.5665	0.5555	0.5447	0.5339	0.5232	0.5125	0.5018	0.4911	0.4804	0.4698	0.3837	0.3174	0.3058	0.2482
25	0.7798	0.6095	0.6080	0.5945	0.5785	0.5661	0.5542	0.5432	0.5324	0.5216	0.5109	0.5002	0.4895	0.4788	0.4681	0.4575	0.3713	0.3049	0.2933	0.2357
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	0.3086	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	0.2231	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	1.3699
3	2.9410	2.8339	2.8086	2.7751	2.7332	2.6730	2.6243	2.5771	2.5313	2.4869	2.4437	2.4018	2.3612	2.3216	2.2832	2.2459	2.1055	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	2.5867	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	2.9605	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	3.6049	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	4.7998	4.6399	4.4873	4.3436	3.8372	3.4212	3.3289	2.9247
9	8.5660	8.1522	7.7851	7.4353	7.1078	6.8017	6.5152	6.2469	5.9952	5.7590	5.5370	5.3282	5.1317	4.9464	4.7716	4.6085	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	5.6889	5.4527	5.2337	5.0288	4.3271	3.7757	3.6554	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	7.9039	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	9.8996	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	10.390	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	4.7745	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	7.4894	7.0248	6.6231	6.2593	5.9289	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	7.5820	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.



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CPA PART III SECTION 5

ADVANCED FINANCIAL MANAGEMENT

FRIDAY: 27 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) Discuss four reasons for restructuring and reorganising an organisation. (8 marks)
- (b) Professor Edward Altman's model for prediction of bankruptcy is given as follows:

$$Z - \text{score} = 1.2x_1 + 1.4x_2 + 3.3x_3 + 0.6x_4 + 0.999x_5$$

x_1, x_2, x_3, x_4 and x_5 are the financial ratios which according to Prof. Altman have the discriminating power.

Where:

x_1	=	Networking capital/Total assets
x_2	=	Retained earnings/Total assets
x_3	=	Operating profit (EBIT)/Total assets
x_4	=	Market value of equity shares/Book value of debt including preference share capital
x_5	=	Sales/Total assets

Given below are summarised financial statements of Alpha Limited for the year ended 31 December 2019:

Alpha Limited

Income statement for year ended 31 December 2019

	Sh. "000"
Sales	400,000
Cost of sales	(300,000)
Gross earnings	100,000
Operating expenses	(60,000)
Operating profit	40,000
Financing cost: Interest	(10,000)
Profit before tax	30,000
Corporation tax @ 30%	(9,000)
Profit after tax	21,000
Ordinary dividend proposed and paid	(11,000)
Retained profit for the year	<u>10,000</u> ✓

Alpha Limited

Statement of financial position as at 31 December 2019

	Sh. "000"
Assets:	
Non-current assets	300,000
Current assets	<u>100,000</u> ✓
Total assets	<u>400,000</u>
Financed by:	
Ordinary share capital (Sh.10 each)	100,000
Retained profit	120,000
Share premium	<u>40,000</u>
Equity capital	<u>260,000</u> ✓

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	Sh. "000"
Total current liabilities	20,000
12% preference share capital	40,000
10% debenture capital	80,000
Total equity and liabilities	<u>400,000</u>

In this model, a Z – score of 2.7 or more indicates no signs of failure and a Z – score of 1.8 or less indicates there are signs of failure. The firm's ordinary shares are currently trading at Sh.15 each.

Required:

- (i) The Z – score for Alpha Limited. (5 marks)
- (ii) Comment on the results obtained in (b) (i) above. (1 mark)
- (c) Chanzu Ltd. is considering a project which would cost Sh.5,000,000 now. The annual benefits for four years, would be a fixed income of Sh.2,500,000 per annum plus other savings of Sh.500,000 in year 1, rising by 5% each year because of inflation. Running costs will be Sh.1,000,000 in the first year but would increase at a rate of 10% each year because of inflating labour costs.

The general rate of inflation is expected to be 7.5% per annum and the firm's required nominal rate of return is 16%.

Required:

- (i) Advise the management of Chanzu Limited on whether to undertake the project. (4 marks)
- (ii) Comment on the impact of inflation in (c) (i) above. (2 marks)
- (Total: 20 marks)**

QUESTION TWO

- (a) The following information relates to two mutual funds operating in your country:

	Omega Mutual fund	Beta Mutual fund
Realised return	13%	18%
Beta	1.0	2.0
Standard deviation	19%	15%

Additional information:

- The return on the market index is 12%.
- The risk free rate is 8%.

Required:

For each of the above mutual funds, compute the following performance index scores:

- (i) Jensen's alpha. $R_s + B(e_{2m} - R_f) = \pi$ (2 marks)
- (ii) Treynor's alpha. (2 marks)
- (iii) Sharpe index for the funds and the market. $\frac{e_{2m} - R_f}{\sigma_{2m}}$ (3 marks)
- (b) The estimated factor sensitivities of Diamond Ltd. to Fama-French factors and the Pastor-Stambaugh model factors and the risk premium associated with those factors are given in the table below:

	Factor sensitivity	Risk premium (%)
Market factor	1.05	5.00
Size factor	-0.65	2.50
Value factor	-0.20	4.50
Liquidity factor	0.20	4.50

The treasury bill rate is 5%

Required:

- (i) The required rate using the Fama-French model. (3 marks)
- (ii) The required rate of return using the Pastor-Stambaugh model (PSM). (3 marks)

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- (c) You have recently been hired as a financial manager at Panblock Limited, a locally incorporated company that deals in imported building materials from the United States of America (USA). As the person in charge of negotiating the exchange rates, you have noted the following indicative exchange rates and interest rates:

3-months forward exchange rates	105 KES/USD
Spot exchange rate	100 KES/USD
3-months interest rate in Kenya	8% per annum
3-months interest rate in USA	5.8% per annum

Assume that Panblock Limited can borrow as much as KES 1,000,000.

Required:

- Determine whether the interest rate parity (IRP) is currently holding. (2 marks)
- Demonstrate how you could undertake a covered interest arbitrage assuming that IRP is not holding. (4 marks)
- Determine the arbitrage profit. (1 mark)

(Total: 20 marks)

QUESTION THREE

- (a) Explain the difference between the following terms as applied in mortgage and financial markets:
- "Primary mortgage market" and "secondary mortgage market". (2 marks)
 - "Fixed-rate mortgage" and "adjustable-rate mortgage". (2 marks)
 - "Lien" and "recourse". (2 marks)
- (b) The shareholders of Mali Investment Holdings have for the last two years managed to save an accumulated fund of Sh.15 million available for investment. A financial analyst they hired to appraise some possible projects they can invest in, has availed the following information:

Project	Initial cash outlay Sh."000"	Expected return (%)	Standard deviation (%)
P	9,000	12	2.5
Q	7,000	21	1.8
R	6,000	16	2.3
S	8,000	14	1.6

The co-variances between various projects contribution are as follows:

Project pairing	Covariance
PQ	-3.1
PR	1.3
PS	-4.1
QR	1.5
QS	1.7
RS	2.7

PQ =

Additional information:

- The management is planning to invest by pairing the projects.
- The maximum capital that can be invested is the accumulated fund as shown above.
- Any paired project is mutually exclusive and none of the projects is divisible.

$$\text{Corr} = \frac{\text{cov}}{\sigma_x \sigma_y}$$

Required:

- For each possible project pair combination, calculate the expected return, correlation coefficient and standard deviation. (12 marks)
- Advise the shareholders of Mali Investment Holdings on the optimal project pair based on the mean variance criterion. (2 marks)

(Total: 20 marks)

QUESTION FOUR

(a) Explain the following terms as used in the context of international parity conditions:

- (i) Interest rate parity.
- (ii) Purchasing power parity.
- (iii) International Fisher effect.

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(2 marks)
(2 marks)

(b) An investor has acquired a call option whose exercise price is Sh.100. The option's premium is Sh.5 per option.

The following are the possible market prices (in shillings) of the option:

114 112 110 108 106 105 104 102 100 98 96 94

Required:

- (i) Determine the options value based on each of the above market prices. (3 marks)
- (ii) Determine the profit or loss associated with the option on the basis of each of the possible market prices. (3 marks)
- (iii) Represent the information in (b) (ii) above in a diagram where the x – axis represents market price and y – axis represents profit or loss for the option buyer. (3 marks)
- (iv) Interpret the graph in (b) (iii) above. (1 mark)

(c) Describe four types of real options available to the management while making strategic capital budgeting decisions of a firm. (4 marks)

(Total: 20 marks)

QUESTION FIVE

(a) Explain six reasons why mergers and acquisition deals fail despite good planning.

Assumption while acquiring
- culture change
- better strategy
(6 marks)

(b) Zeltex Ltd. is an unlevered firm. The firm expects to generate operating profit (EBIT) of Sh.20 million each year to perpetuity.

The firm's current market value is Sh.80 million and pays corporation tax at the rate of 30%. The management of the firm is considering the use of debt financing. The firm's financial analysts have estimated that the present value of any future financial distress costs is Sh.8 million and that the probability of financial distress would increase with leverage according to the following schedule:

Value of debt (Sh.m)	Probability of financial distress	Pre-tax cost of debt (%)
2.5	0.00	6
5.0	0.0125	7.5
7.5	0.025	9
10	0.0625	10
12.5	0.125	11.5
15	0.3125	12.5
20	0.75	14

Additional information:

1. The firm's ungeared asset beta is 0.60.
2. The risk free rate of return is 8%.
3. Expected return of the market portfolio is 15%.
4. The cost of equity of a levered firm shall be captured using capital asset pricing model (CAPM).
5. The Hamada model shall be applied to capture the levered equity Beta.

Required:

- (i) The current cost of equity and weighted average cost of capital (WACC). (2 marks)
- (ii) The firm's optimal level of debt using the "pure" Modigliani and Miller with corporation tax model. (4 marks)
- (iii) The firm's optimal weighted average cost of capital (WACC) and hence its optimal capital structure proportions. (8 marks)

(Total: 20 marks)

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

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

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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	0.3758	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	0.6138	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	0.8965	0.8043	0.7224	0.6480	0.5817	0.5209	0.4751	0.4280	0.3875	0.3505	0.3173	0.2875	0.2607	0.2360	0.2140	0.1954	0.1346	0.0900	0.0850	0.0550
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	0.1458	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	0.7050	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	0.0213	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	2.1665	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	8.5680	8.1622	7.8661	7.4935	7.1478	6.8177	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	5.4208	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	10.820	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	6.1992	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



kasneb

CPA PART III SECTION 5

ADVANCED FINANCIAL MANAGEMENT

WEDNESDAY: 27 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) (i) Distinguish between “insolvency” and “bankruptcy” as used in business restructuring. (2 marks)
- (ii) Highlight four causes of business failure. (4 marks)
- (b) Sunny Technologies Ltd. is considering investing Sh.50 million in a new machine to manufacture computer micro chips with an expected useful life of 5 years and no salvage value. It is expected that 20 million units of micro chips will be sold each year at Sh.3.00 per unit. Variable production costs are expected to be Sh.1.65 per unit, while incremental fixed costs will be Sh.10 million per annum.

The cost of capital is 12%.

Required:

Evaluate the sensitivity of the project’s net present value (NPV) to the following changes:

- (i) Sales volume. (3 marks)
- (ii) Sales price. (3 marks)
- (iii) Variable costs. (3 marks)
- (c) Further analysis of the company in (b) above suggests that sales volumes could depend on expected economic state as follows:

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

Required

The expected net present value (NPV) of the project using scenario analysis.

(5 marks)

(Total: 20 marks)

QUESTION TWO

- (a) Kanga Limited is considering the design of a new conveyor system. The management must choose among the following three alternative courses of action:

Option 1

The firm could sell the design outright to another corporation with payments over 2 years.

Option 2

The firm could license the design to another manufacturer for a period of 5 years which is likely to be the product life cycle of the conveyor system.

Option 3

The company could manufacture and market the system itself. This alternative will result in 6 years of cash inflows.

Cash flows associated with each alternative are as shown below:

Alternative	Sell	License	Manufacture
Initial investment, I_0 (Sh.)	400,000	400,000	900,000
Year	Cash inflows (Sh.)		
1	400,000	500,000	400,000
2	500,000	200,000	500,000
3	-	160,000	400,000
4	-	120,000	400,000
5	-	80,000	400,000
6	-	-	400,000

The company has a cost of capital of 12%.

Required:

Advise Kanga Limited on the best alternative based on:

- Net present value (NPV) approach. (3 marks)
 - Annualised net present value (ANPV) approach. (3 marks)
 - Compare and contrast your results obtained in (a) (i) and (ii) above. (2 marks)
- (b) The finance director of Babito Ltd. wishes to determine the company's optimal capital structure. The cost of debt varies according to the level of gearing of the company as follows:

Percentage debt (%)	Pre-tax cost of debt (%)
10	6.5
20	7.1
30	7.8
40	8.5
50	10
60	12
70	15

Additional information:

- The company's ungeared equity beta is 0.85.
- The risk-free interest rate is 6%.
- The market return is 14%.
- Corporate tax rate is 30%.

Required:

Advise the company on the optimal weighted average cost of capital (WACC).

(12 marks)
(Total: 20 marks)

QUESTION THREE

- Summarise five functions of the International Monetary Fund (IMF). (5 marks)
- Duncan Kipchumba has an investment capital of Sh.1,000,000. He wishes to invest the fund in two securities, X and Y in the following proportion; Sh.200,000 in security X and Sh.800,000 in security Y.

The return on these two securities depend on the state of the economy, as shown below:

State of economy	Probability	Returns on security X	Returns on security Y
Boom	0.40	18%	24%
Normal	0.50	14%	22%
Recession	0.10	12%	21%

Required:

- The expected return on the portfolio. (3 marks)
- The correlation coefficient between security X and security Y. (4 marks)

- (iii) The portfolio risk. (2 marks)
- (iv) The reduction in risk due to portfolio diversification. (2 marks)
- (c) Job Ochieng, an investor, believes that there are three important factors that determine the expected return for a particular common stock. Job uses the following factor betas and factor risk premiums:

Factor	Factor beta	Factor risk premium
1	0.70	2.5%
2	1.20	5.0%
3	-0.10	6.0%

The risk-free rate is 5%.

Required:

- (i) The expected return for the stock using the arbitrage pricing theory (APT) model. (2 marks)
- (ii) Explain two differences between capital asset pricing model (CAPM) and arbitrage pricing theory (APT) model. (2 marks)
- (Total: 20 marks)

QUESTION FOUR

- (a) Distinguish between the following terms as used in the context of derivatives market: (2 marks)

- (i) "Currency option" and "currency swap". (2 marks)
- (ii) "Interest rate swap" and "interest rate collar". (2 marks)
- (iii) "Hedgers" and speculators".

- (b) Property A and property B are categorised under the real estate category. Property A is all equity financed while property B is financed partly using debt and partly by equity finance.

Both properties generated operating profit (EBIT) of Sh.41,245,900 annually. This is expected to remain constant each year in perpetuity. Unlike property A which is wholly equity financed, property B is financed partly by equity and partly by 10% debt of Sh.215,000,000.

The cost of equity is 12% for both properties and there are no corporation taxes. Each unit of debt is trading at par.

Required:

The current value of each property using the Net Income (NI) approach. (4 marks)

- (c) Smoothdrive Ltd., a motor vehicle assembly company issued a 10 year, 16%, Sh.100 million par value bond five years ago. The bond was issued at 2% discount and issuing costs amounted to Sh.2 million.

Due to the decline in Treasury bill rates in the recent past, interest rates in the money market have been falling presenting favourable opportunities for refinancing. A financial analyst engaged by the company to assess the possibility of refinancing the debt reports that a new Sh.100 million par value, 12%, 5-year bond could be issued by the company. Issuing costs for the new bond will be 5% of the par value and a discount of 3% will have to be given to attract investors.

The old bond can be redeemed at 10% premium and in addition, two months interest penalty will have to be paid on redemption. All bond issue expenses (including the interest penalty) are amortised on a straight-line basis over the life of the bond and are allowable for corporate tax purposes.

The applicable corporate tax rate is 40% and the after tax cost of debt to the company is approximately 7%.

Required:

- (i) The initial investment required to issue the new bond. (4 marks)
- (ii) Annual cash flow savings (if any) expected from the bond refinancing decision. (4 marks)

- (iii) The net present value (NPV) of the refinancing decision. (1 mark)
- (iv) Advise the company on whether to refinance the bond based on your results in (c) (iii) above. (1 mark)
- (Total: 20 marks)

QUESTION FIVE

(a) Briefly describe the following types of mergers:

- (i) Horizontal. (1 mark)
- (ii) Vertical. (1 mark)
- (iii) Congeneric. (1 mark)
- (iv) Conglomerate. (1 mark)

(b) A Ltd. and B Ltd. are companies operating in the same line of business. In the past few years, A Ltd. has experienced stiff competition from B Ltd. to an extent that A Ltd. is now contemplating acquiring B Ltd. in order to consolidate its market share.

The following financial data is available about the two companies:

	A Ltd.	B Ltd.
Annual sales (Sh. million)	400	60
Net income (Sh. million)	40	9
Ordinary shares outstanding (million)	10	3
Earnings per share (EPS)	Sh.4.0	Sh.3.0
Market price per share (MPS)	Sh.60	Sh.30

Both companies are in the 30% income tax bracket.

Required:

- (i) The maximum exchange ratio that A Ltd. should agree to assuming that it does not expect dilution in its post acquisition earnings per share (EPS). (2 marks)
- (ii) The total premium the shareholders of B Ltd. would agree to receive at the exchange ratio in (b) (i) above. (2 marks)
- (iii) A Ltd.'s post acquisition earnings per share (EPS) assuming that the two companies agree on an offer price of Sh.30. (2 marks)
- (iv) A Ltd.'s post acquisition earnings per share (EPS) assuming that for every 100 ordinary shares of B Ltd., the shareholders are offered two, 12 % debentures of Sh.500 par value. (3 marks)
- (c) Twiga Limited has 500,000 ordinary shares trading at Sh.150 each in the Securities Exchange.

Additional information:

- The dividend payable in one year period is Sh.3 per share.
- An investment opportunity worth Sh.25 million is to be undertaken. The profit to be earned is Sh.15 million.
- The cost of capital for the company is 10%.

Required:

Using Modigliani and Miller approach, show that the payment of dividends does not affect the value of the firm.

(7 marks)

(Total: 20 marks)

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

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

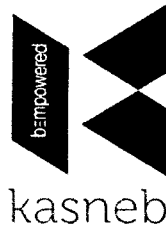
Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	12%	14%	15%	16%	18%	20%	24%	28%	32%	36%
1	.9901	.9804	.9709	.9615	.9524	.9434	.9346	.9259	.9174	.9091	.8929	.8772	.8696	.8621	.8475	.8333	.8065	.7813	.7576	.7353
2	.9803	.9612	.9426	.9246	.9070	.8900	.8734	.8573	.8417	.8264	.7972	.7695	.7561	.7432	.7182	.6944	.6504	.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	.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	3.5712	3.1250
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



CPA PART III SECTION 5

ADVANCED FINANCIAL MANAGEMENT

THURSDAY: 23 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) Discuss four applications of the capital asset pricing model (CAPM). (8 marks)
- (b) Dzikunze Manufacturing Limited is considering to raise an extra Sh.10 million in order to finance an expansion programme.

The company's current capital structure is given as follows:

	Sh. "000"
Ordinary share capital (Sh.20 par value)	50,000
Reserves	20,000
14% debenture capital	20,000
10% preference share capital	<u>10,000</u>
	<u>100,000</u>

Additional information:

1. The company is considering raising the funds using two alternative financing options namely:

Option I:

To raise all the funds through the issue of new ordinary shares at par.

Option II:

To raise half of the funds through the issue of new ordinary shares at par and the balance through the issue of new 12% debentures at par.

2. The corporation tax rate is 30%.

Required:

- (i) Earnings before interest and tax (EBIT) at the point of indifference in company's earnings for each financing option. (8 marks)
- (ii) Earnings per share (EPS) at the point of indifference in (b) (i) above. (4 marks)

(Total: 20 marks)

QUESTION TWO

- (a) The Unclaimed Financial Assets Authority (UFAA) was created under the Unclaimed Financial Assets Act, No.40 of 2011 to administer unclaimed financial assets.

Required:

With reference to the above statement, summarise six specific roles of the Unclaimed Financial Assets Authority or equivalent authority in your country. (6 marks)

- (b) ABC Ltd. is a company listed in the local securities exchange. The company is foreseeing a growth rate of 12% per annum in the next two years. The growth rate is likely to be 10% per annum for the third and fourth year, then it will stabilise at 8% per annum in perpetuity.

The latest dividend to be paid was Sh.1.50 per share.

The required rate of return is 16%.

Required:

The intrinsic value of the share.

(4 marks)

- (c) Umoja Group of companies belongs to a risk class of which the appropriate capitalisation rate is 10%.

The company currently has in issue 200,000 ordinary shares selling at Sh.50 each. The company is contemplating the declaration of dividend at the rate of Sh.3 per share at the end of the current financial year which has just begun.

Required:

Using Modigliani and Miller proposition on dividend irrelevance, determine:

- (i) The price of the ordinary shares at the end of the year, assuming a dividend is not declared. (2 marks)
- (ii) The price of the ordinary shares at the end of the year, assuming a dividend is declared. (2 marks)
- (iii) Assuming that the company generates a net income of Sh.2,000,000 and makes new investments of Sh.4,000,000 during the period.

Show that under the Modigliani and Miller's assumption, payment or non-payment of dividends has no effect on the company's value. (6 marks)

(Total: 20 marks)

QUESTION THREE

- (a) Discuss four types of risks associated with investment in real estate investment trust (REITs) securities. (8 marks)
- (b) Zomolo Limited is a firm operating in the manufacturing industry. The firm's current capital structure is given as follows:

	Sh. "000"
Ordinary share capital (Sh.10 par value)	80,000
Reserves	20,000
10% irredeemable debenture capital (Sh.100 par value)	30,000
8% preference share capital (Sh.20 par value)	20,000
	<u>150,000</u>

Additional information:

- The current market price per share (MPS) of the firm's ordinary shares is Sh. 34.80 cum-dividend.
- The firm adopts a 60% dividend payout ratio.
- The most recent earnings per share (EPS) of the firm is Sh.8.00.
- The historical dividend per share (DPS) over the last four years are given as follows:

Year	Dividend per share (DPS) (Sh.)
2015	4.00
2016	4.20
2017	4.50
2018	4.80
- The firm's management is contemplating to invest in a project which would cost Sh.40 million. The project is expected to generate Sh.9 million each year in perpetuity.
- The project has an estimated beta of 1.50.
- The return from a well diversified market portfolio is 18%.
- The debentures are considered to be risk-free and are valued at par.
- The existing 8% irredeemable preference shares are currently trading at Sh.25 each.
- The corporation tax rate is 30%.

Required:

- (i) The firm's return on equity (ROE) using Gordon's growth approximation method. (3 marks)
- (ii) The firm's existing weighted average cost of capital (WACC). (6 marks)
- (iii) The project's risk adjusted discounting rate (RADR). (3 marks)

(Total: 20 marks)

QUESTION FOUR

- (a) Kadzenga Limited is a Kenyan company with a substantial proportion of its trade with companies in the United States (US). Kadzenga Ltd. invoiced a US firm 60,000 United States Dollars (USD) receivable 3 months from now.

Additional information:

1. The borrowing rate is 3% above the bank base rate while the investing rate is 2% below the bank base rate. These rates apply both in Kenya and the United States.
2. The bank base rates in Kenya and the US are 15% and 10% per annum respectively.
3. The exchange rates in the forex market between the Kenya Shilling (Ksh) and the United States Dollar (USD) are as follows:

	Ksh/1 US (\$)
Spot exchange rate:	103-105
One month forward rate:	102-103
3-months forward rate:	101-102

Required:

Calculate the amount to be received by Kadzenga Limited using:

- (i) Forward contract hedge. (2 marks)
 - (ii) Money market hedge. (6 marks)
 - (iii) Using the results obtained in (a) (i) and (a) (ii) above, advise the management of Kadzenga Limited on the best hedging strategy. (2 marks)
- (b) Ziani Limited, an unlevered firm has in issue 10 million ordinary shares that are currently selling at the securities exchange for Sh.20 each.

Additional information:

1. The firm's most recent earnings per share (EPS) is Sh.4.0 and adopts a 100% dividend payout.
2. It is expected that the firm's future dividends in each year will remain constant in perpetuity.
3. The firm is considering to issue 12% new debentures to raise Sh.50 million in order to finance an expansion programme. This will effectively change the status of the firm from unlevered to a levered firm.
4. The firm pays corporation tax at the rate of 30%.

Required:

Using Modigliani and Miller's propositions, determine:

- (i) The cost of equity before and after issue of the long-term debt. (3 marks)
- (ii) The weighted average cost of capital (WACC) before and after issue of the debt. (3 marks)
- (iii) The current market value of the firm before and after issue of the debt. (2 marks)
- (iv) Advise the management of Ziani Limited on whether to change its capital structure. (2 marks)

(Total: 20 marks)

QUESTION FIVE

- (a) Jeza Tours and Travel is a private limited company in the tourism industry. In order to improve customer service and provide the management with timely and quality information, the company is contemplating to purchase 8 micro-computers at a cost of Sh.100,000 each.

Installation cost for all the computers will amount to Sh.80,000. It is estimated that once installed, the computers will increase the company's earnings before depreciation and tax from Sh.12,000,000 to Sh.12,500,000 annually.

The computers are expected to last for 10 years after which they will be obsolete with no resale value.

The Operations Manager proposes that the computers will be useful for 15 years with no resale value.

The Marketing Manager, on the other hand argues that the company needs the computers for only 5 years, after which they can be disposed of at Sh. 50,000 each.

The probability distribution of the useful life of the computers is given as follows:

Probability	Useful life of computers (years)
0.20	5
0.50	10
0.30	15

The company is in the 30% tax bracket.

The company's cost of capital is 24% and uses the straight-line method of depreciation.

Required:

- (i) The expected net present value of the project. (4 marks)
- (ii) The standard deviation of the expected net present value. (3 marks)
- (iii) If the net present value (NPV) of the project is less than Sh.200,000, the firm will be exposed to a financial distress.
Determine the probability that the firm will avoid financial distress. (Assume normal distribution). (3 marks)

- (b) Excellent Ltd. is considering acquiring Best Ltd. a firm in the same industry in order to consolidate its market share. Best Ltd. has been less profitable, so it has paid an average of only 20% in taxes during the last several years. In addition, it has used little debt having a debt ratio of 25%. If the acquisition would be implemented, Excellent Ltd. could operate Best Ltd. as a separate, wholly owned subsidiary. This will increase Excellent Ltd.'s gearing ratio to 40%.

The following is a forecasted financial data for Best Ltd. over the next five years:

Year	1	2	3	4	5
	Sh. "million"	Sh. "million"	Sh. "million"	Sh. "million"	Sh. "million"
Net sales	50	60	75	70	65
Operating costs	5	10	15	15	12
Selling and administration costs	10	10	8	9	11
Acceptable investment project costs	0.5	0.70	1.60	1.20	0.20

Additional information:

1. The risk-free rate of return is 8% and debt is considered to be risk-free.
2. Expected return of the market portfolio is 13%.
3. The firm's levered equity beta after acquisition is estimated at 0.80.
4. After 5 years, the net cash flows of Best Ltd. shall increase at a constant rate of 6% per annum in perpetuity.
5. Corporation tax rate is 30%.
6. The firm's gross profit margin is 40%.
7. Best Ltd. incurs fixed financing cost of Sh.2 million per annum.
8. The firm's equity shares and bonds are currently trading at par.

Required:

Determine the maximum price payable to acquire Best Ltd. using the discounted free cash flow basis. (10 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	9.7731	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	4.9395	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

we have answers to these past papers



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CPA PART III SECTION 5

ADVANCED FINANCIAL MANAGEMENT

THURSDAY: 29 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) In the context of corporate restructuring and reorganisation, differentiate between the following terms:
- (i) “Leveraged buy-out” and “management buy-out” (2 marks)
 - (ii) “Divestiture” and “spin-off” (2 marks)
 - (iii) “Unbundling” and “sell-off”. (2 marks)
- (b) Mavueni Limited is considering undertaking a financial reconstruction during which it would repurchase its outstanding ordinary shares using debt. This will raise its debt to equity ratio to 1.20. The following information was available for the company:
- 1. Existing debt to equity ratio is 0.80.
 - 2. The asset beta (ungeared beta of equity) is 0.30.
 - 3. The risk-free rate of return is 8%.
 - 4. The return of market portfolio is 14%.
 - 5. The company adopts 50% payout ratio as its dividend policy.
 - 6. The company expects to generate earnings per share (EPS) of Sh.6.
 - 7. Debt finance is considered to be risk-free.
 - 8. The corporate tax rate is 30%.

Required:

Evaluate the impact of financial reconstruction on Mavueni Ltd.’s weighted average cost of capital (WACC).

(8 marks)

- (c) The following data relate to the probability distributions and returns of securities A and B:

Probability (P_i)	Security returns (%)	
	Security A	Security B
0.10	-5	10
0.25	10	15
0.40	15	10
0.25	20	0

Required:

The proportion of each security to be invested in the portfolio in order to attain a zero portfolio risk. (6 marks)

(Total: 20 marks)

QUESTION TWO

- (a) Discuss three practical challenges that could be encountered when making capital investment decisions. (6 marks)
- (b) Galanema Ltd. is considering to introduce new cheap plastic rulers into the market. This will involve investing in a new plant at a cost of Sh.280 million.

The plant is expected to have a useful life of 5 years at the end of which salvage value will be nil. The firm’s policy is to depreciate all of its fixed assets on a straight line basis.

Due to market uncertainties, the unit selling price, unit variable cost and annual sales volume of the new plastic rulers have been estimated stochastically as follows:

Unit selling price		Unit variable cost		Annual sales volume	
Value	Probability	Value	Probability	Value	Probability
(Sh.)		(Sh.)		(Sh. "million")	
35	0.30	15	0.20	4	0.10
30	0.40	10	0.50	7	0.60
50	0.30	25	0.30	9	0.30

Additional information:

- The firm expects to incur fixed operating costs excluding depreciation of Sh.30 million in each year.
- The company's cost of capital is 17%.
- The corporate tax rate is 30%.

Required:

- The expected net present value (NPV) of the new product. (6 marks)
- Simulate the net present values (NPV) using the following random numbers:

(802560 638351 057530 150353 603785 553525 245239 369948 160252 857015) and compute the expected net present value of the project. (8 marks)

(Total: 20 marks)

QUESTION THREE

- The following are summarised financial statements of Dzikunze Limited as at 31 December 2015 to 31 December 2017:

Income statement for the year ended 31 December:

	2015	2016	2017
	Sh. "000"	Sh. "000"	Sh. "000"
Turnover	90,000	100,000	120,000
Operating profit	15,000	20,000	25,000
Interest	(2,000)	(4,000)	(5,000)
Profit before tax	13,000	16,000	20,000
Taxation (30%)	(3,900)	(4,800)	(6,000)
Profit after tax	9,100	11,200	14,000
Proposed dividends	(2,100)	(2,500)	(3,000)
Retained profit	7,000	8,700	11,000

Statement of financial position as at 31 December 2017:

	Sh. "000"
Non-current assets	60,000
Current assets	40,000
	<u>100,000</u>
Financed by:	
Ordinary share capital (Sh.20 par value)	30,000
Reserves	20,000
10% long term debentures (Sh.100 par value)	30,000
Short-term debts	20,000
	<u>100,000</u>

Additional information:

- Stock market analysts expect post-tax earnings and dividends to grow at the rate of 25% per annum for the next three years. Thereafter, the annual growth rate will revert to the company's growth rate and remain constant in each year to perpetuity.
- Dzikunze Ltd.'s overall beta is 0.80 and the beta of equity is 0.75.
- The risk-free rate of return is 12%.
- The market rate of return is 28%.
- The current market price of ordinary share is Sh.67.70 cum-dividend.
- The debenture price is Sh.89.50 ex-interest.
- The corporation tax rate is 30%.

Required:

- Evaluate whether Dzikunze Ltd.'s share is currently overvalued or undervalued by the market forces. (8 marks)
- Advise a prospective investor whether to buy the ordinary shares of Dzikunze Limited. (2 marks)

- (b) Chigiri Investment Limited is a company based in Kenya. The company exported goods on credit to a firm in the United States of America (USA). The company expects to receive US\$ 800,000 in one year's time.

The current spot exchange rate is 1US\$ = KES.60.

However, Chigiri Investment Limited created a probability distribution for the forward spot rate in one year as follows:

Probability	Forward spot rate KES/1 US \$
0.20	61
0.50	63
0.30	67

Additional information:

- One year put options on the US\$ are available with an exercise price of KES.63 and a premium of KES. 4 per US\$.
- One year call options are available on the US\$ with an exercise price of KES.60 and a premium of KES 3 per US\$.
- The future spot rate is estimated in a year's time to be KES. 62 per 1US\$.
- The following are the money market annual rates:

	Kenya Annual rates (%)	USA Annual rates (%)
Borrowing	18	12
Deposit	9	6

Required:

- Determine whether a forward market hedge, money market hedge or currency option hedge would be the most appropriate hedging strategy for the company. (9 marks)
 - Advise a prospective investor, the most appropriate hedging strategy if no hedging takes place. (1 mark)
- (Total: 20 marks)**

QUESTION FOUR

- (a) A financial analyst is interested in using the Black-Scholes Model (BSM) to value call options on the stock.

The following information is available:

- The price of the stock is Sh.35.
- The strike price is Sh.30.
- The option matures in 9 months.
- The volatility of returns of the stock is 0.30.
- The risk-free rate is 10%.

Required:

The value of a call option using the Black-Scholes Model.

(4 marks)

- (b) The following information relate to two securities, namely A and B and the market portfolio for the year 2018:

Probability	Forecasted rate of returns (%)		
	Security A	Security B	Market portfolio
0.20	15	12	16
0.50	10	15	12
0.30	8	10	7

The treasury bills yield rate is expected to be 8%.

Required:

- The Beta coefficient of securities A and B. (4 marks)
- Using capital asset pricing model (CAPM), determine the minimum required rate of returns for securities A and B. (2 marks)

- (c) Chilulu Industries Limited is considering acquisition of Roka Corporation Ltd. in a share for share exchange. The financial data for the two companies are given below:

	Chilulu Ltd. (Sh.)	Roka Ltd. (Sh.)
Sales (millions)	500	100
Net earnings (millions)	30	12
Ordinary shares outstanding (millions)	6	2
Ordinary share market price, per share (MPS)	50	40
Dividend per share (DPS)	2	1.50

Additional information:

- Chilulu Limited is not willing to incur an initial dilution in its earnings per share (EPS).
- Chilulu Limited will have to offer a minimum of 25% of Roka Ltd.'s current share market price.

Required:

- The relevant offer price range. (4 marks)
- If Roka Ltd.'s shareholders accept an offer by Chilulu Ltd. of Sh.40 per share in a share for share exchange. Determine the post-merger earnings per share (EPS). (4 marks)
- Using the results obtained in (c) (ii) above and assuming that Chilulu Ltd.'s price-earning (P/E) ratio will remain unchanged after the merger, determine the post acquisition market price of a share of Chilulu Limited. (2 marks)

(Total: 20 marks)

QUESTION FIVE

- Analyse three assumptions of the income approach of valuing real estates business in your country. (6 marks)
- A large manufacturing firm based in Kenya is tendering for an order in South Africa. The tender conditions state that payment will be made in South African Rands (ZAR) in 24 months' time from now. The company is unsure of what price to tender. The company's marginal cost of production at the time of tendering is estimated to be Kenya shillings (KES) 2,000,000 and a 20% mark-up is applicable for the company.

Exchange rates:
KES/1 ZAR

Spot rate: 8.025 – 8.125

Additional information:

- No forward rate exists for 24 months' time.
- Market information between Kenya and South Africa:

	South Africa	Kenya
Annual inflation rates	6%	8%
Annual interest rates available to the manufacturing firm:		
Borrowing rate	12%	18%
Investment rate	8%	6%

Required:

Using the purchasing power parity model, recommend the tender price to be used. (7 marks)

- Embakasi Investment Ltd. contemplates to determine its optimal capital structure which currently consists of only debt and common equity.

The company does not use preference shares in its capital structure and does not plan to do so in the near future.

In order to estimate how much its debt would cost at different debt levels, the company's financial controller has consulted with investment banks and the following information was obtained:

Debt to equity ratio	Bond rating	Before tax cost of debt (%)
0.00	A	0
0.25	BBB	8.5
0.60	BB	10
1.70	C	14
2.50	D	16

Additional information:

1. The company uses the capital asset pricing model (CAPM) to estimate the cost of capital.
2. The risk-free rate of return is 5%.
3. The market risk premium is 8%.
4. The corporate tax rate is 30%.
5. The company uses the Hamada model to determine its levered equity Beta.
6. The asset Beta (unlevered equity Beta) is 1.20.

Required:

- (i) The optimal capital structure of Embakasi Investment Ltd. (6 marks)
 - (ii) The optimal weighted average cost of capital (WACC) of Embakasi Investment Ltd. (1 mark)
- (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	.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

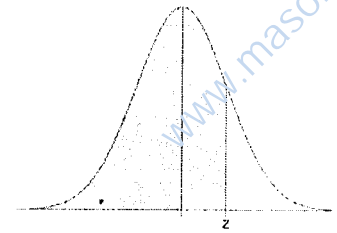
Present Value of an Annuity of 1 Per Period for n Periods:

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

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

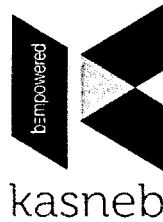
we have answers to these past papers

Standard Normal Cumulative Probability Table



Cumulative probabilities for POSITIVE z-values are shown in the following table:

z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.5000	0.5040	0.5080	0.5120	0.5160	0.5199	0.5239	0.5279	0.5319	0.5359
0.1	0.5398	0.5438	0.5478	0.5517	0.5557	0.5596	0.5636	0.5675	0.5714	0.5753
0.2	0.5793	0.5832	0.5871	0.5910	0.5948	0.5987	0.6026	0.6064	0.6103	0.6141
0.3	0.6179	0.6217	0.6255	0.6293	0.6331	0.6368	0.6406	0.6443	0.6480	0.6517
0.4	0.6554	0.6591	0.6628	0.6664	0.6700	0.6736	0.6772	0.6808	0.6844	0.6879
0.5	0.6915	0.6950	0.6985	0.7019	0.7054	0.7088	0.7123	0.7157	0.7190	0.7224
0.6	0.7257	0.7291	0.7324	0.7357	0.7389	0.7422	0.7454	0.7486	0.7517	0.7549
0.7	0.7580	0.7611	0.7642	0.7673	0.7704	0.7734	0.7764	0.7794	0.7823	0.7852
0.8	0.7881	0.7910	0.7939	0.7967	0.7995	0.8023	0.8051	0.8078	0.8106	0.8133
0.9	0.8159	0.8186	0.8212	0.8238	0.8264	0.8289	0.8315	0.8340	0.8365	0.8389
1.0	0.8413	0.8438	0.8461	0.8485	0.8508	0.8531	0.8554	0.8577	0.8599	0.8621
1.1	0.8643	0.8665	0.8686	0.8708	0.8729	0.8749	0.8770	0.8790	0.8810	0.8830
1.2	0.8849	0.8869	0.8888	0.8907	0.8925	0.8944	0.8962	0.8980	0.8997	0.9015
1.3	0.9032	0.9049	0.9066	0.9082	0.9099	0.9115	0.9131	0.9147	0.9162	0.9177
1.4	0.9192	0.9207	0.9222	0.9236	0.9251	0.9265	0.9279	0.9292	0.9306	0.9319
1.5	0.9332	0.9345	0.9357	0.9370	0.9382	0.9394	0.9406	0.9418	0.9429	0.9441
1.6	0.9452	0.9463	0.9474	0.9484	0.9495	0.9505	0.9515	0.9525	0.9535	0.9545
1.7	0.9554	0.9564	0.9573	0.9582	0.9591	0.9599	0.9608	0.9616	0.9625	0.9633
1.8	0.9641	0.9649	0.9656	0.9664	0.9671	0.9678	0.9686	0.9693	0.9699	0.9706
1.9	0.9713	0.9719	0.9726	0.9732	0.9738	0.9744	0.9750	0.9756	0.9761	0.9767
2.0	0.9772	0.9778	0.9783	0.9788	0.9793	0.9798	0.9803	0.9808	0.9812	0.9817
2.1	0.9821	0.9826	0.9830	0.9834	0.9838	0.9842	0.9846	0.9850	0.9854	0.9857
2.2	0.9861	0.9864	0.9868	0.9871	0.9875	0.9878	0.9881	0.9884	0.9887	0.9890
2.3	0.9893	0.9896	0.9898	0.9901	0.9904	0.9906	0.9909	0.9911	0.9913	0.9916
2.4	0.9918	0.9920	0.9922	0.9925	0.9927	0.9929	0.9931	0.9932	0.9934	0.9936
2.5	0.9938	0.9940	0.9941	0.9943	0.9945	0.9946	0.9948	0.9949	0.9951	0.9952
2.6	0.9953	0.9955	0.9956	0.9957	0.9959	0.9960	0.9961	0.9962	0.9963	0.9964
2.7	0.9965	0.9966	0.9967	0.9968	0.9969	0.9970	0.9971	0.9972	0.9973	0.9974
2.8	0.9974	0.9975	0.9976	0.9977	0.9977	0.9978	0.9979	0.9979	0.9980	0.9981
2.9	0.9981	0.9982	0.9982	0.9983	0.9984	0.9984	0.9985	0.9985	0.9986	0.9986
3.0	0.9987	0.9987	0.9987	0.9988	0.9988	0.9989	0.9989	0.9989	0.9990	0.9990
3.1	0.9990	0.9991	0.9991	0.9991	0.9992	0.9992	0.9992	0.9992	0.9993	0.9993
3.2	0.9993	0.9993	0.9994	0.9994	0.9994	0.9994	0.9994	0.9995	0.9995	0.9995
3.3	0.9995	0.9995	0.9995	0.9996	0.9996	0.9996	0.9996	0.9996	0.9996	0.9997
3.4	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9998



CPA PART III SECTION 5
ADVANCED FINANCIAL MANAGEMENT

THURSDAY: 24 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) The objectives of a corporate governance system are to eliminate or mitigate conflicts of interest among stakeholders, particularly between managers and shareholders, and to ensure that the assets of the company are used efficiently and productively in the best interest of the investors and other stakeholders.

Required:

In the context of the above statement, discuss four core attributes of an effective corporate governance system.

(4 marks)

- (b) In relation to investment appraisal, evaluate four limitations of sensitivity analysis. (4 marks)
- (c) Tabby Ltd. has a potential investment opportunity for which the initial cash outlay and future cash flows are uncertain. The analysis carried out provided the following probability estimates:

Cash outlay		Annual cash inflows	
Probability	Amount Sh."000"	Probability	Amount Sh."000"
0.40	250,000	0.20	45,000
0.25	280,000	0.40	50,000
0.25	300,000	0.40	60,000
0.10	305,000		

Additional information:

- The cost of capital is 10%.
- Life of the project is expected to be 10 years.
- The salvage value is zero.

Required:

- (i) Construct a decision tree for the investment to show pay offs, probabilities and net present value (NPV) for each alternative. (6 marks)
- (ii) The expected NPV of the project. (3 marks)
- (iii) If the NPV of the project is less than Sh.5 million, Tabby Ltd. would be exposed to a hostile takeover. Compute the probability that Tabby Ltd. will avoid a hostile takeover. (Assume a normal distribution and that the variance of the NPV is Sh.1,861.47 million). (3 marks)

(Total: 20 marks)

QUESTION TWO

- (a) The capital asset pricing model (CAPM) is subject to theoretical and practical limitations. Theoretical limitations are inherent in the structure of the model, whereas practical limitations arise in implementing the model.

Required:

Summarise two practical limitations of CAPM.

(2 marks)

- (b) A portfolio manager creates the following portfolio:

Security	Expected annual return (%)	Expected standard deviation (%)
1	16	20
2	12	20

Required:

- (i) The proportion invested in Security 1, if the portfolio of the two securities has an expected return of 15%. (1 mark)
- (ii) The expected standard deviation of an equal-weighted portfolio, if the correlation of returns between the two securities is -0.15. (2 marks)
- (iii) The expected standard deviation of an equal-weighted portfolio, if the returns of the two securities are uncorrelated. (2 marks)

- (c) Kent Investment Fund (KIF) in which you plan to invest has a total capital of Sh.500 million invested in the shares of five companies as follows:

Company	Amount invested in shares Sh."million"	Beta coefficient
Alpha Ltd.	140	0.8
Beta Ltd.	80	1.5
Chatter Ltd.	120	3.0
Dinner Ltd.	100	1.0
Eastern Ltd.	60	2.5

Additional information:

- The beta coefficient of KIF can be determined as a weighted average of the fund's investment.
- The current risk-free rate of return is 8%.
- The market returns have the following estimated probability distribution for the next period:

Probability	Market return (%)
0.1	7
0.2	9
0.4	11
0.2	13
0.1	15

Required:

- (i) The estimated equation of the security market line (SML). (3 marks)
- (ii) The fund's required rate of return for the next period. (3 marks)
- (iii) Suppose Anthony Muli, the Chief Investment Officer (CIO) of KIF receives a proposal to invest in a new company. The investment needed to take a position in the new company's shares is Sh.50 million. The forecasted rate of return from this investment and the probability of their occurrence in different states of nature, are given as follows:

State of Nature	Probability	Forecasted rate of return (%)
A	0.1	10
B	0.2	15
C	0.4	20
D	0.2	10
E	0.1	15

Using the capital asset pricing model (CAPM), advise Anthony Muli on whether to invest in the new company's shares. (7 marks)

(Total: 20 marks)

QUESTION THREE

(a) Describe the following pre-offer takeover defensive mechanisms:

- (i) Poison pills. (1 mark)
- (ii) Golden parachutes. (1 mark)
- (iii) Fair price amendments. (1 mark)
- (iv) Supermajority voting provisions. (1 mark)
- (v) Restricted voting rights. (1 mark)

(b) Explain five factors that Multinational Corporations (MNCs) should consider when making long-term investment decisions. (5 marks)

(c) Nangina Ltd. is considering acquiring Bwiri Ltd. Nangina Ltd. is contemplating financing of the acquisition of Bwiri Ltd. using any of the following options:

Option 1: An ordinary share for ordinary share exchange

Under the terms of acquisition, Nangina Ltd. will offer one of its ordinary shares for every two shares in Bwiri Ltd.

Option 2: Ordinary shares for debentures exchange

Nangina Ltd. expects to offer 2 units of 10% debentures for every 100 ordinary shares in Bwiri Ltd. Each unit of debenture has a par value of Sh.100 each.

The summarised financial information relating to the two companies for the year ended 30 November 2017 was as follows:

	Nangina Ltd.	Bwiri Ltd.
Profit after tax (Sh.)	120 million	30 million
Number of shares	20 million	6 million
Earnings per Share (EPS) (Sh.)	6	5
Market price per share (Sh.)	50	25
Price earnings ratio	8.33 times	5 times

The corporate tax rate is 30%.

Required:

Determine the combined operating profit of the two firms and the post acquisition earnings per share (EPS) at the point of indifference in the firm's earnings under financing options (1) and (2) above. (10 marks)

(Total: 20 marks)

QUESTION FOUR

(a) In relation to derivatives markets and contracts:

- (i) Highlight four characteristics that are common to both forward contracts and futures contracts. (4 marks)
- (ii) Differentiate between a "straddle" and a "strangle". (2 marks)
- (iii) Outline three methods of terminating a swap contract. (3 marks)

(b) Lagdara Ltd., an unlevered firm, operates in the textile industry. The firm's current capital structure is summarised as follows:

	Sh. "000"
Ordinary share capital (Sh.50 par value)	120,000
Share premium	40,000
Retained earnings	<u>80,000</u>
Shareholders' funds	<u>240,000</u>

The firm is considering borrowing 10% debt finance of Sh.40 million in order to finance an expansion programme, making it a levered firm.

Additional information:

1. Annual earnings before interest and tax (EBIT) generated by the firm are Sh.60 million. This is expected to remain constant each year in perpetuity.
2. The firm's ordinary shares are currently trading at a market price per share (MPS) of Sh.200 at the securities exchange.
3. The corporate tax rate applicable is 30%.

Required:

- (i) Using the Modigliani-Miller (M-M) approach and the information provided above, analyse the financial implications of the change in capital structure of Lagdara Ltd. (9 marks)
 - (ii) Justifying your answer, advise the management of Lagdara Ltd. on whether to change its capital structure. (2 marks)
- (Total: 20 marks)**

QUESTION FIVE

- (a) Assess five limitations of applying the free cash flow (FCF) approach using the weighted average cost of capital (WACC) as a discount rate when evaluating projects with different risks or debt capacity. (5 marks)
- (b) The issue of taxation relating to international trade has become important as business transactions become more complicated. Transfer pricing is one such area which has come under scrutiny by tax authorities all over the world. Transfer pricing has been of great concern to the government as it has made the government lose huge tax revenues.

Required:

In relation to the above statement, summarise three objectives of transfer pricing other than reducing tax liability. (3 marks)

- (c) Kikumi Ltd. expects to receive 750,000 Euros from a credit customer in the European Union in 6 months' time. The spot exchange rate is 2.349 Euros (EUR) per United States Dollar (USD) and the 6-month forward rate is 2.412 Euros per USD.

The following commercial interest rates are available to Kikumi Ltd.

	Deposit rate per annum (%)	Borrowing rate per annum (%)
EUR	4.0	8.0
USD	2.0	3.5

Kikumi Ltd. does not have any surplus cash to use in hedging the future Euro receipt.

Required:

Evaluate whether the money market hedge or a forward hedge would be preferred. (7 marks)

- (d) Kisima Ltd. expects free cash flows of Sh.7.36 million this year and a future growth rate of 4% per annum. Currently, the firm has Sh.30 million in debt outstanding. This leverage will remain fixed during the year but at the end of each year, Kisima Ltd. is expected to increase or decrease its debt to maintain a constant debt/equity ratio.

Kisima Ltd. pays 5% interest on its debt and has an unlevered cost of capital of 12%.

The corporate tax rate is 40%.

Required:

Compute the value of Kisima Ltd.

(5 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	.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	3.1292	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

we have answers to these past papers



CPA PART III SECTION 5
ADVANCED FINANCIAL MANAGEMENT

THURSDAY: 30 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) Discuss how corporate governance might impact the dividend policy of a firm. (6 marks)
- (b) Viwanda Ltd. is considering purchasing a machine at a cost of Sh.40 million. The company will incur an additional Sh.20 million to modify the machine for special use.

The machine is expected to have a useful life of 3 years and a scrap value of Sh.15 million after 3 years.

This investment will require an increase in net working capital of Sh.2 million at the beginning of its useful life.

The additional investment in working capital will return to normal at the end of the machine's useful life.

The machine's purchase will not affect revenues but it is expected to save the company Sh.25 million each year in before tax operating costs, mainly labour.

The corporation tax rate is 30% and the company's cost of capital is 10%.

Required:

- (i) Advise Viwanda Ltd. on whether to buy the machine. (6 marks)
- (ii) Suppose the firm's management is unsure about the savings in before tax operating costs. Carry out a sensitivity analysis on this variable assuming that the variable shall vary adversely by 10%. (8 marks)
- (Total: 20 marks)**

QUESTION TWO

- (a) Discuss three reasons why economic value added (EVA) is gaining prominence as an alternative measure of a company's financial performance. (6 marks)
- (b) With reference to financial management in the global context, distinguish between the following terms:
- (i) A "Eurobond" and a "Euro note". (2 marks)
- (ii) An option being "in the money" and "out of the money". (2 marks)
- (c) Wekeza Investments has initiated an investment fund called "Faidika" the funds of which will be invested only in stocks and bonds of infrastructure and construction companies.

60% of the fund value is invested in companies engaged in commercial construction services and the other 40% in companies engaged in developing residential properties. The average beta of returns from development of residential properties is 1.9 and that of commercial construction services is 1.4.

The benchmark market return is 11.2% while Treasury bonds carry an interest rate of 4.25%.

The following information on the net asset values (NAV) per share is provided:

Month	January	February	March	April	May	June
Closing NAV "Sh"	18.60	17.80	18.20	18.00	17.80	16.80
Dividend payout "Sh"	-	0.75	-	-	-	1.20

Month	July	August	September	October	November	December
Closing NAV "Sh"	17.20	17.80	17.90	18.10	18.80	18.50
Dividend payout "Sh"	-	-	-	-	-	-

The opening NAV for January is Sh.17.75.

Required:

Calculate Jensen's alpha relating to "Faidika" and use it to evaluate the fund's performance.

(10 marks)

(Total: 20 marks)

QUESTION THREE

(a) Discuss three reasons why acquisitions often fail to enhance shareholder value. (6 marks)

(b) Mkuki Ltd. is considering making a bid for 100% of the shares of Ngao Ltd., a company in a completely different industry. The bid of Sh.200 million, which is expected to be accepted, will be financed entirely by new debt with a post-tax cost of debt of 7%.

1. **Pre-acquisition information:**

Mkuki Ltd.

The company has debt finance totalling Sh.60 million at a pre-tax rate of 10%.

The company has 50 million equity shares each with a current market value of Sh.22. The equity beta is 1.37.

The post-tax operating cash flows of Mkuki Ltd. are as follows:

Year	1	2	3	4	5
Sh"million"	60.3	63.9	67.8	71.8	76.1

Ngao Ltd.

The company has an equity beta of 2.5 and 65 million equity shares in issue with a total current market value of Sh.156 million.

The company's debt, which will also be taken over by Mkuki Ltd., stands at Sh.12.5 million at a post-tax rate of 7%.

2. **Post-acquisition information:**

Land with a value of Sh.14 million will be sold.

The post-tax operating cash flows of Ngao Ltd's current business will be:

Year	1	2	3	4	5
Sh"million"	15.2	15.8	16.4	17.1	17.8

3. If the acquisition goes ahead, Mkuki Ltd. will experience an improvement in its credit rating and all existing debts will be charged at a post-tax rate of 7%.
4. Cash flows after year 5 will grow at the rate of 1.5% per annum.
5. The risk-free rate is 5.2% and the market risk premium is 3%.
6. The corporate tax rate is 30%.

Required:

Advise whether the acquisition should proceed.

(14 marks)

(Total: 20 marks)

QUESTION FOUR

- (a) Two CPA graduates have formed a company to write, market and distribute text books and revision manuals. The company's text books and revision manuals have already been piloted and the market prospects are good. All that is lacking is adequate financing to continue the project. A small group of private investors is interested in financing the new company. Two financing proposals are being evaluated.

1. **Financing option one:**

This is an all equity capital structure. Three million shillings would be raised by selling ordinary shares at Sh.40 per share.

2. **Financing option two:**

This will involve the use of financial leverage.

One million shillings would be raised by selling corporate bonds with an effective interest rate of 14 per cent per annum. The remaining Sh. 2 million would be raised by selling ordinary shares at Sh.40 per share. The use of financial leverage is considered to be a permanent part of the firm's capital so no fixed maturity date is needed for the analysis.

3. The corporation tax rate appropriate for this analysis is 30%.

Required:

- (i) Find the operating profit (EBIT) indifference level associated with the two financing plans. (4 marks)
- (ii) Construct an EPS-EBIT graph for the two financing plans. (4 marks)
- (iii) Determine the range of operating profit (EBIT) within which each financing plan above would be recommended. (2 marks)

- (b) The following data relate to two companies; Alpha Ltd. and Beta Ltd. which belong to the same risk class.

	Alpha Ltd.	Beta Ltd.
Number of ordinary shares outstanding	90,000,000	150,000,000
Market price per share	Sh.18	Sh.10
6% debentures (market value)	Sh.60,000,000	-
Profit before interest and tax	Sh.18,000,000	Sh.18,000,000

All profits after debenture interest are distributed as dividends.

Required:

- (i) Using suitable calculations, demonstrate how under the Modigliani and Miller approach (without taxes), an investor holding 10 per cent of Alpha Ltd's shares will be better off in switching his holding to Beta Ltd. (8 marks)
- (ii) Explain when, according to Modigliani and Miller (without taxes), the process described in (b) (i) above would come to an end. (2 marks)

(Total: 20 marks)

CA53 Page 3
Out of 4

QUESTION FIVE

(a) In relation to financial management in a global context, explain how the following theories could be used to forecast exchange rates:

(i) Interest rate parity. (4 marks)

(ii) Purchasing power parity. (4 marks)

(b) Jacques Ltd. is a company based in France where the Euro (€) is widely used. The company has recently imported raw materials from the USA and has been invoiced for US Dollars (\$) 240,000 payable in 3 months' time.

In addition, the company has exported finished goods to the USA and Australia. The customer in the USA has been invoiced for US Dollars (\$) 69,000 payable in 3 months' time and the Australian customer has been invoiced for Australian dollars (ASD) 395,000 payable in 4 months' time.

The current spot and forward exchange rates are given as follows:

US Dollars (\$) / 1 Euro (€)

Spot rate 0.9830 – 0.9850

3 months' forward 0.9520 – 0.9525

Euro (€) / 1 ASD

Spot rate 1.8890 – 1.8920

4 months' forward 1.9510 – 1.9540

The current money market interest rates per annum are given as follows:

	Lending	Borrowing
USA	10%	12%
Australia	14%	16%
France	11.5%	13%

Required:

Show how the company can hedge its foreign exchange exposure using:

(i) Forward market cover. (6 marks)

(ii) Money market cover. (6 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	2.8691
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

we have answers to these past papers

KASNEB

CPA PART III SECTION 5

ADVANCED FINANCIAL MANAGEMENT

THURSDAY: 25 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) Explain two ways in which increased investment in corporate social responsibility (CSR) activities might enhance the value of a firm. (4 marks)
- (b) Kenzel Ltd. has the following capital structure which it considers optimal under both the present and forecasted conditions:

Source of capital	%
Long-term debt	45
Equity capital	55
Total	100

The management of Kenzel Ltd. forecasts the after-tax earnings for the forthcoming year at Sh.2.5 million. The company has been paying 60 per cent of its earnings as dividend and this payment ratio is expected to continue into the foreseeable future. The company's present loan commitment will allow it to incur additional leverage according to the schedule presented below:

Loan amount (Sh.)	Interest rate on incremental debt
0 - 500,000	9%
500,000 - 900,000	11%
900,000 and above	13%

The company's corporate tax rate is 30%. The current market price of the equity shares of the company is Sh.22. The last dividend on equity shares was paid at Sh.2.20 per share and the expected growth rate is 5%. New equity shares can be sold at a floatation cost of 10% of the issue price.

Kenzel Ltd. has the following investment opportunities for the coming year:

Project	Cash outlay Sh.	Annual net cash flow Sh.	Project life (years)	Internal rate of return %
A	675,000	155,401	8	?
B	900,000	268,484	5	15
C	375,000	161,524	3	?
D	562,500	185,194	4	12
E	750,000	127,351	10	11

Required:

- (i) The amounts in shillings at which breaks in the marginal cost of capital (MCC) schedule occur. (3 marks)
- (ii) The weighted marginal cost of capital (WMCC) in each of the intervals between the breaks in the MCC schedule. (6 marks)
- (iii) The internal rate of return (IRR) for project A and project C. (4 marks)
- (iv) Using the investment opportunities schedule (IOS), advise on which project(s) should be accepted. (3 marks)
- (Total: 20 marks)**

QUESTION TWO

- (a) Analyse three factors that might be responsible for financial distress in a firm. (6 marks)
- (b) The following information relates to the performance of six portfolios over a seven-year period:

Portfolio	Average annual returns (%)	Standard deviation of the average annual returns (%)	Correlation with market returns
P	18.6	27.0	0.81
Q	14.8	18.0	0.65
R	15.1	8.0	0.98
S	22.0	21.2	0.75
T	-9.0	4.0	0.45
U	26.5	19.3	0.63
Market return	12.0	12.0	
Risk-free rate	9.0		

Required:

Rank the performance of the above portfolios using:

- (i) Sharpe's method. (4 marks)
- (ii) Treynor's method. (6 marks)
- (c) Compare the rankings using the two methods in (b) above and explain two reasons behind the differences. (4 marks)
- (Total: 20 marks)**

QUESTION THREE

- (a) Examine four strategies that a company could adopt to defend itself against a hostile takeover. (8 marks)
- (b) The following data relate to two companies namely; V Ltd. and J Ltd. operating in the same line of business.

Financial data as at 30 April 2017:

	V Ltd.	J Ltd.
Market value of debt (Sh."billion")	6.60	11.60
Market value of equity (Sh."billion")	19.80	13.40
Number of shares in issue ("million")	680.00	880.00
Share options outstanding ("million")	50.80	-
Exercise price per option (Sh. per share)	22.00	-
Corporate tax rate	30%	30%
Equity beta	1.85	0.95
Default risk premium	1.6%	3.0%
Net operating profit after tax and net re-investment (Sh."million")	900.00	410.00
Current earnings per share (Sh. per share)	1.19	0.44

Additional information:

- The global equity risk premium is 4% and the most appropriate risk-free rate derived from government securities is 3%.
- The share options held by the employees were exercisable subject to the employees working for the company for the next three years.
- The company has an annual employee attrition rate of 5% as employees leave and out of those remaining, 20% are expected not to have achieved the standard of performance required to exercise the options.
- The options have a time value of Sh.7.31.
- J Ltd. operates a defined benefit pension scheme which, at its current actuarial valuation, shows a deficit of Sh.860 million.
- V. Ltd. which has managed to sustain a 5% growth rate in earnings per annum, is considering a debt-financed acquisition of J Ltd. In addition, V Ltd. believes that J Ltd. could register a growth rate of 4% per annum under its current management.

Required:

- (i) The weighted average cost of capital (WACC) of both J Ltd. and V Ltd. (4 marks)
- (ii) The current value of both J Ltd. and V Ltd. (8 marks)

(Total: 20 marks)

CA53 Page 2
Out of 3

QUESTION FOUR

- (a) Explain three functions of the African Development Bank. (6 marks)
- (b) Biashara Ltd. is an import-export company based in Kenya. On 1 January 2017, the company exported coffee worth US \$140,000 to the United States (US) of America on a five-month credit.

Additional information:

1. The exchange rates in the forex markets were (are expected to be) as follows:

	KSh/1 US\$
1 January 2017	100
31 May 2017	102

2. The lending and borrowing rates in the two countries are as follows:

	Annual lending rate	Annual borrowing rate
Kenya	18%	19%
USA	14%	15%

3. The importer will settle the outstanding amount on 31 May 2017.

Required:

- (i) Using the interest rate parity relationship, compute the expected 5-month forward exchange rate as at 31 May 2017. (4 marks)
- (ii) Advise Biashara Ltd. on which is the better hedging strategy between a forward contract and a money market hedge. (10 marks)

(Total: 20 marks)

QUESTION FIVE

- (a) A Ltd. is considering acquiring B Ltd. The selected financial data for the two companies are as follows:

	A Ltd.	B Ltd.
Annual sales (Sh."million")	600	120
Net income (Sh."million")	35	3
Ordinary shares outstanding ("millions")	10	2
Earnings per share (EPS) - Sh.	3.5	1.5
Market price per share (MPS) - Sh.	40	15

Both companies are in the 30% tax bracket.

Required:

- (i) The maximum exchange ratio that A Ltd. should agree to if it expects no dilution in earnings per share. (2 marks)
- (ii) Total premium that the shareholders of B Ltd. would receive at the exchange ratio calculated in (a) (i) above. (2 marks)
- (iii) A Ltd.'s post acquisition earnings per share, if the two companies settle on a price of Sh.20 per share. (2 marks)
- (iv) A Ltd.'s post-acquisition earnings per share if every 50 ordinary shares of B Ltd. were exchanged for one 8% debenture of a par value of Sh.1,000 each. (2 marks)
- (b) Chuma Ltd. operates a machine which has the following maintenance costs and resale values over its four-year life. The purchase price of the machine is Sh.25,000,000.

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

The company's cost of capital is 10%.

Required:

Advise the management of Chuma Ltd. on how frequently the machine should be replaced.

(12 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

we have answers to these past papers

KASNEB

CPA PART III SECTION 5

ADVANCED FINANCIAL MANAGEMENT

THURSDAY: 24 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) Summarise three assumptions of the Grossman-Hart Model (1986). (6 marks)
- (b) SKB Ltd. is considering a proposal to manufacture a new drug named "Millenium". The drug will be manufactured using a machine which will cost Sh.13 million.

The cash flows and drug life relating to "Millenium" have been estimated as stochastic exogenous variables with the following distributions:

Annual after tax cash flow (Sh."000")	Probability	Drug life in years	Probability
1,000	0.02	3	0.05
1,500	0.03	4	0.10
2,000	0.15	5	0.30
2,500	0.15	6	0.25
3,000	0.30	7	0.15
3,500	0.20	8	0.10
4,000	0.15	9	0.03
		10	0.02

The minimum required rate of return from this investment is 16%.

The company has approached you as a financial management expert to perform an analysis of the above project.

Required:

- (i) Using the following random numbers, perform 10 simulation runs of the net present value (NPV) of this project.

5397	6699	3081	1909	3167	8170	3875
4883	9033	5852				

(12 marks)

- (ii) Determine the expected net present value (NPV) of the project.

(2 marks)

(Total: 20 marks)

QUESTION TWO

- (a) Explain three challenges likely to be encountered in the application of the capital asset pricing model (CAPM). (6 marks)
- (b) Moses Mapesa is in the process of evaluating investments in two companies whose percentage returns in the last 10 years are as shown below:

Year	1	2	3	4	5	6	7	8	9	10
Company and percentage return										
FS Ltd. (%)	37	24	-7	6	18	32	-5	21	18	6
SN Ltd. (%)	32	29	-12	1	15	30	0	18	27	10

Required:

- (i) Correlation coefficient of the companies' returns. (6 marks)
- (ii) Portfolio risk assuming equal weighting. (2 marks)

CA53 Page 1
Out of 4

- (c) Mary Chege has been investing in the shares of various companies quoted on the securities exchange. Currently, she holds a portfolio of shares in four companies; W, X, Y and Z.

The following information has been provided:

Company	Number of shares held	Equity beta	Market price per share (Sh.)	Expected return on equity
W	10,000	1.12	130	18%
X	15,000	0.89	100	23%
Y	15,000	0.70	90	11%
Z	10,000	1.60	160	17%

The current market return is 14% per annum and the Treasury Bill's yield is 9% per annum.

Required:

- (i) The risk of Mary Chege's portfolio relative to that of the market. (4 marks)
- (ii) Determine whether Mary Chege should change the composition of her portfolio. (2 marks)
- (Total: 20 marks)**

QUESTION THREE

- (a) Explain three assumptions of the traditional theories of capital structure. (6 marks)
- (b) Majuu Ltd. is just about to commence operations as an international trading company. The firm will have a book value of assets of Sh.320 million and it expects to earn 16% return on these assets before interest and taxes. However, because of certain tax arrangements with foreign governments, the company will not pay any taxes.

It is known that the capitalisation rate for an all equity firm in this business is 12%. The company can borrow debt finance at the rate of 7% per annum. The management is in the process of deciding how to raise the required Sh.10 million debt finance. Assume that the Modigliani and Miller (MM) assumptions apply.

Required:

Using the MM model without taxes, determine:

- (i) The current value of the unlevered firm. (2 marks)
- (ii) The current value of a levered firm if it uses Sh. 10 million of 7% debt. (2 marks)
- (iii) The weighted average cost of capital (WACC) of a levered firm at a debt level of 7%, Sh.10 million. (3 marks)
- (c) Assuming that the company in (b) above now pays taxes at the rate of 30%, compute the following in a Modigliani and Miller (MM) world:
- (i) The current value of the firm if it uses no debt. (2 marks)
- (ii) The current value of the firm if it uses the debt level of 7%, Sh.10 million. (2 marks)
- (iii) The weighted average cost of capital (WACC) at 7% debt level of Sh.10 million. (3 marks)
- (Total: 20 marks)**

QUESTION FOUR

- (a) In relation to corporate restructuring and re-organisation, distinguish between the following terms:
- (i) "Boot strapping" and "management buyout". (2 marks)
- (ii) "Sell off" and "spin off". (2 marks)
- (b) Kubwa Ltd., a supermarket chain, is proposing to take-over Small Ltd., a smaller firm in the same industry. In its bid, Kubwa Ltd. has offered four of its shares for every three shares of Small Ltd.

The following are the latest summarised accounts of the two companies:

Statements of financial position				
		Kubwa Ltd.		Small Ltd.
	Sh."million"	Sh."million"	Sh."million"	Sh."million"
Non-current assets:				
Land		966		84.6
Other non-current assets		<u>300</u>		<u>34</u>
		1,266		118.6
Current assets:				
Inventory	656		102.8	
Accounts receivable	24		12.6	
Cash	<u>88</u>		<u>10.6</u>	
	768		126.0	
Current liabilities:				
Trade payables	894		92.2	
Other accruals	<u>68</u>		<u>8</u>	
	962		100.2	
Net current assets		(194)		25.8
Long-term liabilities:				
14% loan stock	400		-	-
Floating rate loans	<u>228</u>		<u>35</u>	
		(628)		(35)
Total net assets		444		109.4
Shareholders' funds:				
Ordinary share capital		150		40
Reserves		<u>294</u>		<u>69.4</u>
Total shareholders' funds		444		109.4

Income statement		
	Kubwa Ltd.	Small Ltd.
	Sh."million"	Sh."million"
Turnover	2,260	362
Earnings before interest and tax	230	28
Interest	<u>(80)</u>	<u>(4)</u>
Profit before tax	150	24
Taxation	<u>(50)</u>	<u>(8)</u>
Earnings available to shareholders	100	16
Dividends	<u>(48)</u>	<u>(10)</u>
Retained earnings	52	6

Additional information:

- The par value of the shares of Kubwa Ltd. is Sh.0.50 while the par value of Small Ltd's shares is Sh.1.00.
- The current share price of Kubwa Ltd. is Sh.4.64 while that of Small Ltd. is Sh.5.90. The current loan stock price of Small Ltd. is Sh. 125.
- Recent annual growth trends are as follows:

	Kubwa Ltd.	Small Ltd.
Dividends	7%	8%
Earnings per share	7%	10%

- The following will take place after the acquisition:
 - Surplus warehousing facilities will be sold for Sh.13.6 million.
 - Sh. 18 million will be paid out for redundancy of employees.
 - There will be savings of Sh.5.4 million from wages every year for at least five years.
- Kubwa Ltd. has an estimated cost of equity of 14.5% and a weighted average cost of capital of 12%.
- Small Ltd. has an estimated cost of equity of 13%.

Required:

- Evaluate whether the bid is likely to be viewed favourably by the shareholders of both Kubwa Ltd. and Small Ltd. (10 marks)
- Discuss three factors that are likely to influence the views of the shareholders in the analysis in (b) (i) above. (6 marks)

(Total: 20 marks)

CA53 Page 3

Out of 4

QUESTION FIVE

- (a) Explain how currency swaps could be used to hedge against the foreign exchange operating exposure of a firm. (4 marks)
- (b) International Bank expects that the Mexican Peso (MXP) will depreciate against the US dollar (USD) from its spot rate of \$0.15 to \$0.14 in ten days. The following interbank lending and borrowing rates exist:

	Annual lending rate	Annual borrowing rate
US dollars (USD)	8.0%	8.3%
Mexican Peso (MXP)	8.5%	8.7%

Assume that International Bank has a borrowing capacity of either 10 million USD or 70 million MXP in the interbank market, depending on which currency it wants to borrow. Further, assume that one year has 360 days.

Required:

- (i) Demonstrate how International Bank could capitalise on its expectations without using deposited funds. (5 marks)
- (ii) Estimate the profits that could be generated from the strategy adopted in (b) (i) above. (1 mark)
- (c) Assume all the information provided in (b) above with this exception: International Bank expects the MXP to appreciate from its present spot rate of \$0.15 to \$0.17 in 30 days.

Required:

- (i) Demonstrate how International Bank could capitalise on its expectations without using deposited funds. (5 marks)
- (ii) Estimate the profits that could be generated from the strategy adopted in (c) (i) above. (1 mark)
- (d) Highlight two shortcomings of the Black-Scholes option pricing model. (4 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	.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

we have answers to these past papers

KASNEB

CPA PART III SECTION 5

ADVANCED FINANCIAL MANAGEMENT

THURSDAY: 26 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) In the context of appraisal of capital investments under conditions of uncertainty, explain four limitations of utility analysis. (8 marks)
- (b) Planet Ltd. is considering undertaking a 20-year project which requires an initial investment of Sh.250 million in a real estate partnership and whose present value (PV) of expected cash flows is Sh.254 million. Planet Ltd. has the option to abandon the project any time in the next five years for Sh.150 million. The variance in the present value (PV) of the cash flows is 0.09 and the 5-year risk-free rate is 7%.

Required:

- (i) The net present value (NPV) of the project including the option to abandon the project. (10 marks)
- (ii) Comment on the results of your analysis in (b)(i) above. (2 marks)

Note:

1. The Black-Scholes Option Pricing Model

$$C = P_a N(d_1) - P_e N(d_2)e^{-rt}$$

Where:

$$d_1 = \frac{\ln \left(\frac{P_a}{P_e} \right) + (r + 0.5s^2)t}{s\sqrt{t}}$$

$$d_2 = d_1 - s\sqrt{t}$$

2. The Put-Call Parity Relationship

$$P = C - P_a + P_e e^{-rt}$$

(Total: 20 marks)

QUESTION TWO

- (a) Biashara Ltd. wishes to invest in stocks M and N in two different industries. The following information relates to the two stocks:

	Stock M	Stock N
Expected return (%)	18	16
Standard deviation (%)	8	6
Beta coefficient	1.80	1.50
Amount of money invested (Sh.)	1,200,000	800,000

Required:

- (i) The expected portfolio return. (4 marks)
- (ii) Explain the effect on the portfolio risk if the returns of stocks M and N were perfectly positively correlated. Include suitable calculations. (6 marks)

- (b) Mapeni Ltd's investment fund comprises four major projects. The details of the projects are as follows:

Project	Market value of the fund (%)	Expected return (%)	Standard deviation (%)	Coefficient of correlation with the market
1	28	10	15	0.55
2	17	18	20	0.75
3	31	15	14	0.84
4	24	13	18	0.62

The risk-free rate is 5% and the market return is 14%. The standard deviation of the market return is 13%.

Required:

- (i) The beta coefficient of the investment fund. (4 marks)
 - (ii) By comparing the expected return and the required return, advise whether Mapeni Ltd. should change the composition of its portfolio. (6 marks)
- (Total: 20 marks)**

QUESTION THREE

On 1 January 2016, Mavuno Limited was in the process of raising funds to undertake four investment projects. These projects required a total of Sh.30 million.

Given below are details relating to the four investment projects:

Project	Required initial investment Sh. "million"	Internal rate of return (%)
A	8	26
B	7	16
C	9	20
D	6	22

Additional information:

1. The company had Sh.9 million available from retained earnings as at 1 January 2016. Any extra equity finance would have to be sourced through an issue of new ordinary shares.
2. The market price per ordinary share on 1 January 2016 was Sh.25.60 ex-dividend. Information on earnings per share (EPS) and dividend per share (DPS) over the last 6 years is as follows:

Year ended 31 December	2010	2011	2012	2013	2014	2015
EPS (Sh.)	4.5	4.8	4.9	5.2	5.5	6.0
DPS (Sh.)	2.5	2.8	2.9	3.0	3.2	3.5

3. Issue of new ordinary shares would attract a flotation cost of Sh.4.60 per share.
4. 9% irredeemable debentures (par value of Sh.1,000 each) could be sold with net proceeds of 95% due to a discount on issue of 2% and a flotation cost of Sh.30 per debenture. The maximum amount available from the issue of the 9% irredeemable debenture would be Sh.4 million after which debt could only be obtained at 12% interest with net proceeds of 90% of par value.
5. 10% preference shares can be issued at a par value of Sh.80.
6. The company's capital structure, which is considered optimal, is as follows:

	%
Equity capital	45
Preference share capital	30
Debenture capital	<u>25</u>
	<u>100</u>
7. The corporate tax rate applicable is 30%.
8. The company has to exhaust internally generated funds before raising extra funds from external sources.

Required:

- (a) The levels of total new financing at which breaks occur in the weighted marginal cost of capital (WMCC) curve. (2 marks)
- (b) The weighted marginal cost of capital (WMCC) for each of the 3 ranges of levels of total financing as determined in (a) above. (10 marks)

- (c) (i) Advise Mavuno Limited on the project(s) to undertake assuming that the projects are divisible. (6 marks)
- (ii) Determine the optimal capital budget. (2 marks)
- (Total: 20 marks)**

QUESTION FOUR

- (a) With reference to corporate valuation, describe the importance of enterprise value (EV). (6 marks)
- (b) Huge Ltd. intends to take over Tiny Ltd., another company in the same industry. Tiny Ltd. is expected to post earnings of Sh.86 million next year.

If Huge Ltd. acquires Tiny Ltd., the expected results of Tiny Ltd., for the next three years will be as follows:

	Year after acquisition		
	Year 1	Year 2	Year 3
	Sh. "000"	Sh. "000"	Sh. "000"
Sales	200,000	280,000	320,000
Cash costs/expenses	120,000	160,000	180,000
Capital allowance	20,000	30,000	40,000
Interest charges	10,000	10,000	10,000
Cash to replace assets and finance growth	25,000	30,000	35,000

From year 4 onwards, it is expected that the annual cash flows from Tiny Ltd. will increase by 4% each year into perpetuity.

Tax is payable at the rate of 30% and this tax is paid in the same year the profits to which it relates are earned.

If Huge Ltd. acquires Tiny Ltd., it estimates that the gearing after the acquisition will be 35% measured as the value of debt as a proportion of the total equity and debt. After the acquisition of Tiny Ltd., Huge Ltd. would have a cost of debt of 7.4% before tax and a beta of 1.60.

The risk-free rate is 6% and the return on the market portfolio is 11%.

Required:

- (i) The offer price for Tiny Ltd., if Huge Ltd. were to value Tiny Ltd. on a forward price earnings (P/E) multiple of 8.0 times. (2 marks)
- (ii) The weighted average cost of capital (WACC) for Huge Ltd. after the acquisition of Tiny Ltd. (2 marks)
- (iii) The offer price for Tiny Ltd. using a discounted cash flow (DCF) based valuation. (10 marks)
- (Total: 20 marks)**

QUESTION FIVE

- (a) Discuss four techniques that a company might use to hedge against the foreign exchange risk involved in foreign trade. (8 marks)
- (b) Jasper Ltd. is a company based in Nairobi, Kenya which does business with companies based in Tanzania. From such trade, Jasper Ltd. expects the following cash flows in the next six months, in the currencies specified:

Payments due in 3 months	: Ksh.116,000
Receipts due in 3 months	: Tsh.1,970,000
Payments due in 6 months	: Tsh.4,470,000
Receipts due in 6 months	: Tsh.1,540,000

The exchange rates in the Nairobi market are as follows:

	Tsh/Ksh
Spot	17.106 – 17.140
Three months forward	0.82 – 0.77 cents premium
Six months forward	1.39 – 1.34 cents premium

Interest rates		
	Borrowing	Lending
Ksh.	12.5%	9.5%
Tsh.	9%	6%

Required:

The net Kenya shilling receipts/payments that Jasper Ltd. might expect for both its three month and six month transactions if the company hedges foreign exchange risk on the:

(i) Forward foreign exchange market. (6 marks)

(ii) Money market. (6 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:

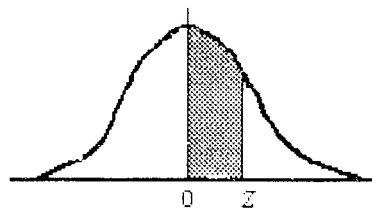
$$PVIF_{r,n} = \sum_{t=1}^n \frac{1}{(1+r)^t} = \frac{1 - \frac{1}{(1+r)^n}}{r}$$

Period 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

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z	0	1	2	3	4	5	6	7	8	9
0.0	.0000	.0040	.0080	.0120	.0160	.0199	.0239	.0279	.0319	.0359
0.1	.0398	.0438	.0478	.0517	.0557	.0596	.0636	.0675	.0714	.0754
0.2	.0793	.0832	.0871	.0910	.0948	.0987	.1026	.1064	.1103	.1141
0.3	.1179	.1217	.1255	.1293	.1331	.1368	.1406	.1443	.1480	.1517
0.4	.1554	.1591	.1628	.1664	.1700	.1736	.1772	.1808	.1844	.1879
0.5	.1915	.1950	.1985	.201	.2051	.2088	.2123	.2157	.2190	.2224
0.6	.2258	.2291	.2324	.2357	.2389	.2422	.2454	.2486	.2518	.2549
0.7	.2580	.2612	.2642	.2673	.2704	.2734	.2764	.2794	.2823	.2852
0.8	.2881	.2910	.2939	.2967	.2996	.3023	.3051	.3078	.3106	.3133
0.9	.3159	.3186	.3212	.3238	.3264	.3289	.3315	.3340	.3365	.3389
1.0	.3413	.3438	.3461	.3485	.3508	.3531	.3554	.3577	.3599	.3621
1.1	.3643	.3665	.3686	.3708	.3729	.3749	.3770	.3790	.3810	.3830
1.2	.3849	.3869	.3888	.3907	.3925	.3944	.3962	.3980	.3997	.4015
1.3	.4032	.4049	.4066	.4082	.4099	.4115	.4131	.4147	.4162	.4177
1.4	.4192	.4207	.4222	.4236	.4251	.4265	.4279	.4292	.4306	.4319
1.5	.4332	.4345	.4357	.4370	.4382	.4394	.4406	.4418	.4429	.4441
1.6	.4452	.4463	.4474	.4484	.4495	.4505	.4515	.4525	.4535	.4545
1.7	.4554	.4564	.4573	.4582	.4591	.4599	.4608	.4616	.4625	.4633
1.8	.4641	.4649	.4656	.4664	.4671	.4678	.4686	.4693	.4699	.4706
1.9	.4713	.4719	.4726	.4732	.4738	.4744	.4750	.4756	.4761	.4767
2.0	.4772	.4778	.4783	.4788	.4793	.4798	.4803	.4808	.4812	.4817
2.1	.4821	.4826	.4830	.4834	.4838	.4842	.4846	.4850	.4854	.4857
2.2	.4861	.4864	.4868	.4871	.4875	.4878	.4881	.4884	.4887	.4890
2.3	.4893	.4896	.4898	.4901	.4904	.4906	.4909	.4911	.4913	.4916
2.4	.4918	.4920	.4922	.4925	.4927	.4929	.4931	.4932	.4934	.4936
2.5	.4938	.4940	.4941	.4943	.4945	.4946	.4948	.4949	.4951	.4952
2.6	.4953	.4955	.4956	.4957	.4959	.4960	.4961	.4962	.4963	.4964
2.7	.4965	.4966	.4967	.4968	.4969	.4970	.4971	.4972	.4973	.4974
2.8	.4974	.4975	.4976	.4977	.4977	.4978	.4979	.4979	.4980	.4981
2.9	.4981	.4982	.4982	.4983	.4984	.4984	.4985	.4985	.4986	.4986
3.0	.4987	.4987	.4987	.4988	.4988	.4989	.4989	.4989	.4990	.4990
3.1	.4990	.4991	.4991	.4991	.4992	.4992	.4992	.4992	.4993	.4993
3.2	.4993	.4993	.4994	.4994	.4994	.4994	.4994	.4995	.4995	.4995
3.3	.4995	.4995	.4995	.4996	.4996	.4996	.4996	.4996	.4996	.4997
3.4	.4997	.4997	.4997	.4997	.4997	.4997	.4997	.4997	.4997	.4998
3.5	.4998	.4998	.4998	.4998	.4998	.4998	.4998	.4998	.4998	.4998
3.6	.4998	.4998	.4999	.4999	.4999	.4999	.4999	.4999	.4999	.4999
3.7	.4999	.4999	.4999	.4999	.4999	.4999	.4999	.4999	.4999	.4999
3.8	.4999	.4999	.4999	.4999	.4999	.4999	.4999	.4999	.4999	.4999
3.9	.5000	.5000	.5000	.5000	.5000	.5000	.5000	.5000	.5000	.5000

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KASNEB

CPA PART III SECTION 5

ADVANCED FINANCIAL MANAGEMENT

THURSDAY: 26 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) In the context of financial management, explain what is meant by "stakeholder theory". (6 marks)
- (b) A company is considering whether to purchase equipment to increase its production and sales volumes. The equipment costs Sh.500,000,000 and has a useful life of three years after which it can be sold as scrap for Sh.80,000,000. For each of the three years of usage, the equipment is expected to increase both sales revenue and operating costs by Sh.600,000,000 and Sh.390,000,000 respectively. The company's cost of capital is 10%.
- Required:**
Compute the percentage change required in each of the following factors for the project to be rejected:
- (i) Initial cost of the equipment. (4 marks)
(ii) Scrap value of the equipment. (2 marks)
(iii) Sales revenue. (4 marks)
- (c) Evaluate four advantages of employing organic growth strategies. (4 marks)
- (Total: 20 marks)

QUESTION TWO

- (a) In most cases, the assumption is that investors are risk-averse, that is, they like returns and dislike risk.
- With reference to the above statement, explain why it is argued that only systematic risk and not total risk is important. (4 marks)
- (b) In the context of portfolio theory, explain the meaning of "beta coefficient". (2 marks)
- (c) The following data have been provided with respect to three shares traded on the Nairobi Securities Exchange (NSE):
- | | Share A | Share B | Share C |
|--------------------------|---------|---------|---------|
| Risk-free rate of return | 12% | 12% | 12% |
| Beta coefficient | 1.340 | 1.000 | 0.750 |
| Return on the NSE index | 0.185 | 0.185 | 0.185 |
- Required:**
- (i) Interpret the beta coefficients of shares A, B and C. (3 marks)
(ii) Using the capital asset pricing model (CAPM), compute the expected return on shares A, B and C. (3 marks)
- (d) The following information relates to portfolios P and N:

	Portfolio P	Portfolio N
Average return	35%	28%
Beta	1.25	1.00
Standard deviation	42%	30%
Non-systematic risk	18%	10%

Assume that the risk free rate is 6% and the average market return is 15%.

Required:

- (i) Sharpe's performance measure for portfolios P and N. (2 marks)
(ii) Treynor's performance measure for portfolios P and N. (2 marks)
(iii) Jensen's performance measure for portfolios P and N. (2 marks)
(iv) The appraisal ratio for portfolios P and N. (2 marks)

(Total: 20 marks)

CA53 Page 1
Out of 3

QUESTION THREE

- (a) Comment on the assertion that capital structure is strongly influenced by managerial behaviour. (4 marks)
- (b) The finance director of Nyuki Ltd. wishes to estimate what impact the introduction of debt finance is likely to have on the company's overall cost of capital. The company is currently financed by equity only.

Nyuki Ltd.- Summarised capital structure

	Sh."000"
Ordinary shares (Sh.2.5 par value)	5,000
Reserves	<u>11,000</u>
	<u>16,000</u>

The company's current share price is Sh.4.20 and up to Sh.4 million of fixed rate five-year debt could be raised at an interest rate of 10% per year. The corporate tax rate is 30%.

Nyuki Ltd.'s current earnings before interest and tax are Sh.2.5 million. These earnings are not expected to change significantly for the foreseeable future.

The company is considering raising either Sh.2 million in debt finance or Sh.4 million in debt finance. In either case, the debt finance will be used to repurchase ordinary shares.

Required:

Using Modigliani and Miller's model in a world with corporate tax, estimate the impact on Nyuki Ltd.'s weighted average cost of capital of raising:

- (i) Sh.2 million in debt finance. (6 marks)
- (ii) Sh.4 million in debt finance. (6 marks)
- (c) Comment on the accuracy of the estimates produced in (b) (i) and (ii) above. (4 marks)
- (Total: 20 marks)

QUESTION FOUR

- (a) (i) Define the term "free cash flow to equity". (2 marks)
- (ii) Explain how free cash flow to equity could be used for valuation. (4 marks)
- (b) Discuss two advantages and two disadvantages of economic value added (EVA). (4 marks)
- (c) The following information relates to Jasho Ltd.:

Statement of profit or loss extracts for the year:

	2013 Sh."million"	2014 Sh."million"
Revenue	326	380
Pre-tax accounting profit	67	84
Taxation	<u>23</u>	<u>29</u>
Profit after tax	44	55
Dividends	<u>15</u>	<u>18</u>
Retained earnings	<u>29</u>	<u>37</u>

Statement of financial position extracts for the year:

	2013 Sh."million"	2014 Sh."million"
Non-current assets	120	156
Net current assets	<u>130</u>	<u>160</u>
	<u>250</u>	<u>316</u>
Financed by:		
Shareholders' funds	195	236
Medium and long-term bank loans	<u>55</u>	<u>80</u>
	<u>250</u>	<u>316</u>

Additional information:

1. Jasho Ltd. had non-capitalised leases valued at Sh.10 million in each year from 2012 to 2014.
2. Capital employed as per the year 2012 financial statements was Sh.223 million.
3. The pre-tax cost of debt was estimated to be 9% in year 2013 and 10% in year 2014.
4. Jasho Ltd.'s cost of equity was estimated to be 15% in year 2013 and 17% in year 2014.
5. The pre-tax accounting profit is obtained after deducting the economic depreciation of the company's non-current assets. This is also the depreciation used for tax purposes.
6. The target capital structure for Jasho Ltd. is 60% equity and 40% debt.
7. The effective tax rate was 30% in both year 2013 and year 2014.
8. Economic depreciation was Sh.30 million in year 2013 and Sh.35 million in year 2014.
9. Other non-cash expenses were Sh.10 million per year in both 2013 and 2014.
10. Interest expense was Sh.4 million in year 2013 and Sh.6 million in year 2014.

Required:

- (i) Stating any assumptions made, estimate the economic value added (EVA) of Jasho Ltd. for both year 2013 and year 2014. (8 marks)
- (ii) Comment on the performance of Jasho Ltd. (2 marks)

(Total: 20 marks)

QUESTION FIVE

- (a) The main driver of option valuation is the volatility of returns of the associated asset.

Support the above statement. (4 marks)

- (b) Explain how triangular arbitrage ensures that currency values are essentially the same in different markets around the world at any given moment. (4 marks)

- (c) Granada Ltd., a UK-based company, imports computer components from the Far East. The trading currency is the Singapore dollar (S\$) and the value of the deal is S\$28 million. Three month's credit is given. The current spot exchange rate is S\$2.8 to one sterling pound (£). Because of recent volatility in the foreign exchange markets, Granada Ltd.'s directors are worried that a rise in the value of the S\$ could wipe out the profits on the deal. Three alternative hedging methods have been suggested as follows:

- A forward market hedge.
- A money market hedge.
- An option hedge.

Granada Ltd.'s treasurer has provided the following information:

1. The three-month forward rate is S\$2.79:£1.
2. Granada Ltd. can borrow Singapore dollars at 2% interest rate per annum and sterling pounds at 5% per annum.
3. Deposit rates are 1% per annum in Singapore and 3% per annum in the UK.
4. A three-month American call option to buy S\$28 million at an exercise rate of S\$2.785:£1 could be purchased at a premium of £200,000 on the London OTC option market.

Required:

- (i) Indicate which would be a better hedge between the forward market hedge and the money market hedge. (6 marks)
- (ii) Evaluate the option hedge if the following spot rates were applicable in three months' time:
 - S\$2.78:£1.
 - S\$2.82:£1.

(6 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	.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	.0089	.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	9.8966	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

we have answers to these past papers

KASNEB

CPA PART III SECTION 5

ADVANCED FINANCIAL MANAGEMENT

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

The managers of Kawaida Ltd. are investigating a potential Sh.25,000,000 investment. The investment would be a diversification away from existing mainstream activities into the food manufacturing industry. Sh.6,000,000 of the investment would be financed by internal funds, Sh.10,000,000 by a rights issue and Sh.9,000,000 by long term loans. The investment is expected to generate pretax net cash flows of approximately Sh.5,000,000 per year for a period of ten years. The residual value at the end of year 10 is forecast to be Sh.5,000,000 after tax. As the investment is in an area that the government wishes to develop, a subsidised loan of Sh.4,000,000 out of the total Sh.9,000,000 is available. This will cost 2% below the company's normal cost of long term debt finance which is 8%.

Kawaida Ltd.'s equity beta is 0.85, and its financial gearing is 60% equity and 40% debt by value. The average equity beta in the food manufacturing industry is 1.2 and average gearing 50% equity and 50% debt by market value.

The risk free rate is 5.5% per annum and the market return is 12% per annum.

Issue costs are estimated to be 1% for debt financing (excluding the subsidised loan) and 4% for equity financing. These costs are not tax allowable.

The corporate tax rate is 30%

Required:

- (a) Estimate the adjusted present value (APV) of the proposed investment. (15 marks)
- (b) Comment upon the circumstances under which APV might be a better method of evaluating a capital investment than net present value (NPV). (5 marks)
- (Total: 20 marks)

QUESTION TWO

- (a) ABC Ltd., a small manufacturing firm, wishes to acquire a new machine that costs Sh.30,000.

Arrangements can be made to lease or purchase the machine. The firm is in the 40% tax bracket. The firm has gathered the following information about the two alternatives:

Purchase: ABC Ltd. can finance the purchase of the machine with a 10%, 6 year loan requiring annual end of year installments. The machine would be depreciated using the reducing balance method. It would have a salvage value of Sh.6,000 after 5 years. The company would pay Sh.1,200 per year for a service contract that covers all maintenance costs. The firm plans to keep the machine and use it beyond its 5 year recovery period.

Lease: ABC Ltd. would obtain a 5 year lease requiring annual end-of-year-lease payments of Sh.10,000.

The lessor would pay all maintenance costs. Insurance and other costs will be borne by the lessee.

ABC Ltd. would be given the right to exercise its option to purchase the machine for Sh.3,000 at the end of the lease term.

Required:

Advise ABC Ltd. on which alternative to take using suitable computations. (16 marks)

- (b) Briefly explain how the arbitrage process may lead to an equilibrium in the financial markets. (4 marks)
- (Total: 20 marks)

CA53 Pilot Paper Page 1 Out of 3

QUESTION THREE

(a) Briefly discuss the meaning and importance of the following terms as used in option pricing:

- (i) Delta. (2 marks)
- (ii) Theta. (2 marks)
- (iii) Vega. (2 marks)
- (iv) Rho. (2 marks)
- (v) Gamma. (2 marks)

(b) Assume that your company has invested in 100,000 shares of Usaidizi Ltd., a manufacturer of light bulbs. You are concerned about the recent volatility in Usaidizi Ltd.'s share price due to the unpredictable weather in Uganda. You wish to protect your company's investments from a possible fall in Usaidizi Ltd. share price until winter in three months time, but do not wish to sell the shares at present.

No dividends are due to be paid by Usaidizi Ltd. during the next three months.

Market data:

- Usaidizi Ltd. current share price: Sh.20
- Call option exercise price: Sh.22
- Time to expiry: 3 months
- Volatility of Usaidizi Ltd. shares 50% (standard deviation per year)

Assume that option contracts are for the purchase or sale of units of 1,000 shares.

Required:

- (i) Devise a delta hedger that is expected to protect investment against changes in the share price until the weather changes. Delta may be estimated using $N(d_1)$. (8 marks)
- (ii) Comment on whether such a hedge is likely to be totally successful. (2 marks)

(Total: 20 marks)

QUESTION FOUR

Omena Ltd. is a firm in the manufacturing industry. The management of this company are considering purchasing a new machine at a cost of Sh.125 million. This investment is expected to reduce manufacturing costs by Sh.45 million annually. The firm will need to increase its net operating working capital by Sh.12.5 million when the machine is installed, but the required operating working capital will return to the original level when the machine is sold after 5 years.

Omena Ltd. will use the straight line method to depreciate the machines and it expects to sell the machine at the end of 5 years operating life for Sh.11.50 million. The company pays corporation taxes at the rate of 30% and uses 10% cost of capital to evaluate projects of this nature.

Required:

- (a) The project's net present value. (3 marks)
- (b) The firm's management are unsure about the annual savings in operating costs that will occur with the new machines acquisition. Management believes that these savings may deviate from their base case value (Sh.45 million) by as much as a plus or minus 10%.

Determine the net present value of the project under both situations and comment on the sensitivity of this variable. (5 marks)

- (c) Suppose the firm's chief finance officer suggest that the firm does a scenario analysis for this project because of the concerns raised about data assumptions, particularly the annual operating cost saving, the salvage value and the net operating working capital (NOWC) requirement. After an extensive analysis, she arrives with the following probabilities and values for the scenario analysis:

Scenario	Probability	Annual operating cost saving Sh."000"	Salvage value Sh."000"	NOWC Sh."000"
Worst case	0.4	36,000	9,000	15,000
Base case	0.4	45,000	11,500	12,500
Best case	0.2	54,000	14,000	10,000

Determine the project's expected net present value (ENPV), standard deviation and its coefficient of variation. (7 marks)

- (d) If net present value of this project is less than Sh.5 million, this company will be exposed to a hostile takeover. Determine the probability that this company will avoid a hostile takeover (Assume normal distribution). (5 marks)
(Total: 20 marks)

QUESTION FIVE

- (a) In relation to corporate restructuring and re-organisation, distinguish between the term "demerger" and "spin off". (3 marks)
- (b) ABC Ltd.'s investment fund comprises of four major projects, details of which are as follows:

Stock	Number of shares	Market price per share	Expected return (%)	Standard deviation of return	Correlation with market
A	2,000,000	30	10	15	0.55
B	1,000,000	25	18	20	-0.75
C	2,000,000	20	15	14	0.84
D	3,000,000	25	13	18	-0.62

The risk free rate of return is 5% and the probability distribution of a market portfolio return are given as follows:

Probability	Forecasted return of market %
0.2	15
0.15	10
0.30	15
0.25	20
0.10	25

The variance of return of the market portfolio is 169%.

Required:

- (i) Using portfolio theory, evaluate whether this portfolio is super-efficient, efficient or inefficient. (6 marks)
- (ii) Using the capital asset pricing model (CAPM), advise whether management of this company should change the composition of their portfolio or not. (6 marks)
- (c) State and explain any three conceptual differences between portfolio theory and the capital asset pricing model (CAPM). (5 marks)
(Total: 20 marks)
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