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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:

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		
0.10	305,000	0.40	60,000

Additional information:
1. The cost of capital is 10%.
2. Life of the project is expected to be 10 years.
3. 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:

1. The beta coefficient of KIF can be determined as a weighted average of the fund's investment.
2. The current risk-free rate of return is 8%.
3. 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	80,000
Shareholders' funds	240,000

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)

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

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

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

* The factor is zero to four decimal places

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

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

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