KASNEB

CIFA PART II SECTION 4

EQUITY INVESTMENTS ANALYSIS

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) Differentiate between a "low-cost strategy" and "product differentiation strategy" as used in company analysis. (4 marks)

(b) Discuss four external factors that could affect an industry's sales and profitability. (8 marks)

(c) (i) Outline three adjustments that could be made to the financial statements to improve the accuracy of the residual income model. (3 marks)

(ii) The following information shows the expected earnings per share (EPS) and dividend per share (DPS) for Phamtex Ltd. for three consecutive years:

Year	**1**	**2**	**3**
EPS (Sh.)	2.00	2.50	4.00
DPS (Sh.)	1.00	1.25	12.25

Additional information:

1. It is expected that the last dividend will be a liquidating dividend.
2. Phamtex Ltd. will cease its operations after the end of year 3.
3. The current book value per share is Sh.6.00.
4. The estimated required rate of return on equity is 10 percent.

Required:

The intrinsic value of Phamtex Ltd.'s share using the residual income model. (5 marks)

(Total: 20 marks)

QUESTION TWO

(a) Explain the following terms as used in equity investments analysis:

(i) Defensive shares. (1 mark)

(ii) Growth shares. (1 mark)

(iii) Top-down economic analysis. (1 mark)

(iv) Bottom-up economic analysis. (1 mark)

(b) Biostar Ltd. uses bonds, preferred shares and ordinary shares as a source of its finance. The current market value of each of these sources of financing and the required rates of return before tax for each of the sources of financing are as given below:

	Market value Sh. "million"	**Required rate of return (%)**
Bonds	400	8.0
Preferred shares	100	8.0
Ordinary shares	500	12.0
Total	**1,000**	

Additional information:

1. The net income available to ordinary shareholders is Sh.110 million.
2. Interest expenses amount to Sh.32 million.
3. Depreciation is Sh.40 million.
4. Investment in fixed capital is Sh.70 million.
5. Investment in working capital is Sh.20 million.

6. Net borrowing is Sh.25 million.
7. Corporation tax rate is 30%.
8. Stable growth rate of free cash flow to the firm (FCFF) is 4%.
9. Stable growth rate of free cash flow to equity (FCFE) is 5%.

Required:

(i) The firm's weighted average cost of capital (WACC). (2 marks)

(ii) The current value of free cash flow to the firm (FCFF). (3 marks)

(iii) The total value of the firm. (2 marks)

(iv) The value of the firm's equity. (1 mark)

(v) The current value of free cash flow to equity (FCFE). (2 marks)

(vi) The value of equity based on the forecasted free cash flow to equity obtained in (b) (v) above. (2 marks)

(c) (i) Babito Limited pays an annual dividend of Sh.3 per share. The company is expected to continue paying this dividend with no future growth in dividends. Investors require a 9% rate of return on investment (ROI). The current risk-free rate is 4%.

Required:

The current value of Babito Limited's share. (2 marks)

(ii) ABC Limited has just paid a dividend of Sh.2 per share. The required rate of return is 12%. The share is currently trading at Sh.35 per share at the securities exchange.

Required:

The growth rate using the Gordon's growth model. (2 marks)

(Total: 20 marks)

QUESTION THREE

(a) Propose three stock specific factors that could affect the value of private companies. (6 marks)

(b) (i) The following information relates to Fadhili Limited for the year ended 31 December 2016:

- Earnings before interest and tax (EBIT) is Sh.2.5 million.
- Corporation tax rate is 30%.
- Weighted average cost of capital (WACC) is at a rate of 11%.
- Total debt is Sh.10 million.
- Total equity is Sh.10 million.

Required:

The company's economic value added (EVA) for the year ended 31 December 2016. (3 marks)

(ii) Highlight two limitations of economic value added (EVA) obtained in (b) (i) above. (2 marks)

(c) Dave and Sons Ltd.'s shares are currently trading at Sh.38.50 per share. The trailing twelve months (TTM) earnings per share (EPS) and dividend per share (DPS) of the company is Sh.1.36 and Sh.0.91 respectively. The return on equity (ROE) is 27%, the profit margin on sales is 10.9%. The treasury bond rate is 4.9%, the equity risk premium is 5.5% and Dave and Sons Ltd.'s beta is 1.2. Both dividend and earnings growth rate are 9%.

Required:

Compute the following:

(i) Justified price to earnings (P/E) ratio. (3 marks)

(ii) Justified price to book (P/B) ratio. (3 marks)

(iii) Justified price to sales (P/S) ratio. (3 marks)

(Total: 20 marks)

QUESTION FOUR

(a) Examine three advantages and three disadvantages of using price to earnings (P/E) multiple in equity valuation. (6 marks)

(b) Diana Kamau, an equity analyst is researching on the valuation of Futures Technologies Ltd. as at the beginning of November 2016. On 8 November 2016, Futures Technologies Ltd.'s shares closed the day at a price of Sh.25.72 per share. The company experienced a severe cyclical contraction in consumer electronics division in the year 2016 resulting in a loss of Sh.1.94 per share which prompted Diana Kamau to normalise earnings. Diana believes that the period between the year 2010 to the year 2015 reasonably captures average profitability over a business cycle. Data on earnings per share (EPS), book value per share (BVPS) and return on equity (ROE) are as follows:

Year	**2016**	**2015**	**2014**	**2013**	**2012**	**2011**	**2010**
EPS	(1.94)	2.11	1.15	0.87	1.16	0.55	1.14
BVPS	13.87	16.62	9.97	11.68	6.57	6.43	6.32
ROE	NM	0.129	0.104	0.072	0.168	0.083	0.179

Where:

NM	=	Not meaningful
EPS	=	Earnings per share
BVPS	=	Book value per share
ROE	=	Return on investment

Required:

(i) Normal EPS for the company based on the historical average EPS. (1 mark)

(ii) Price to earnings (P/E) ratio based on the estimated normal EPS in (b) (i) above. (1 mark)

(iii) Normal EPS for the company based on the average ROE method. (1 mark)

(iv) P/E based on the normal EPS obtained in (b) (iii) above. (1 mark)

(v) Explain the source of the difference in the normal EPS calculated under the average ROE method and the historical average EPS method. Contrast the impact of the difference on the estimated normal P/E ratio. (2 marks)

(c) Moses Agina is considering valuing AGZ Ltd. using the H-Model approach. The relevant inputs for valuation are as follows:

1. Current dividend per share is Sh.1.
2. The dividend growth rate is 29.28% declining linearly over a 16-year period to a final and perpetual growth rate of 7.26%.
3. The risk-free rate is 5.34%.
4. The market risk premium is 5.32%.
5. The beta estimate is 1.37.

Required:

(i) The required rate of return for the company. (2 marks)

(ii) The per share value estimate of the company using the H-model. (6 marks)

(Total: 20 marks)

QUESTION FIVE

(a) Describe the following terms in relation to equity markets:

(i) Quote-driven market. (1 mark)
(ii) Electronic crossing networks. (1 mark)
(iii) Brokered markets. (1 mark)

(b) Summarise four services that could be provided by securities brokers in your country. (4 marks)

(c) The following information relates to Quadrant Limited Securities trades in a given week in the month of April 2017:

- On Tuesday, the share price of Quadrant Limited closes the day at Sh.20 per share.
- On Wednesday morning before the market opens, the equity manager decides to buy Quadrant Limited's shares and submits a limit order for 1,000 shares at Sh.19.95. The price does not fall to Sh.19.95 during the day, so the order expires unfulfilled. The share closes the day at Sh.20.05.

- On Thursday, the order is revised to a limit of Sh.20.06. The order is partially filled that day as 800 shares are bought at Sh.20.06. The commission is Sh.18. The share closes at Sh.20.09 and the order for the remaining 200 shares is cancelled.

Required:

(i) The gain or loss on the paper portfolio. (2 marks)

(ii) The gain or loss on the real portfolio. (2 marks)

(iii) Implementation shortfall. (2 marks)

(d) Johnson Simiyu, an investment consultant has been approached by the management of Zee Ltd., a private company, to assist in valuation of Zee Ltd. The firm has an annual sales of Sh.200 million. Johnson Simiyu assumes for the next twelve months that Zee Ltd.'s revenue will increase by the long-term annual growth rate of 3%. He also makes the following assumptions:

1. Gross profit margin will be 45%.
2. Depreciation will be 2% of revenues.
3. Selling, general and administration expenses are 24% of revenues.
4. Capital expenditure will be 125% of depreciation to support the current levels of revenues.
5. Additional capital expenditure of 15% of incremental revenues will be needed to fund future growth.
6. Working capital investment equals 8% of incremental revenues.
7. Marginal tax rate is 30%.

Required:

The free cash flow to the firm (FCFF). (7 marks)

(Total: 20 marks)

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

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

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