

**CIFA PART II SECTION 4**  
**EQUITY INVESTMENTS ANALYSIS**

**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) Explain the following terms as used in equity markets:
- (i) Board lot. (1 mark)
  - (ii) Close price. (1 mark)
  - (iii) Internet trading. (1 mark)
  - (iv) Thin market. (1 mark)
- (b) Discuss five stages of an industry life cycle. (5 marks)
- (c) Summarise three responsibilities of a financial analyst in the equity valuation process. (3 marks)
- (d) Equimax Holdings Limited's current revenue stands at Sh.20 million. The company's future performance will be tracked relative to sales.

Sales growth and net profit margin are projected per year as shown in the following table:

Year	1	2	3	4	5	6
Sales growth rate (%)	30	25	20	15	10	5
Net profit margin (%)	8.0	7.5	7.0	6.0	5.5	5.0

**Additional information:**

1. Fixed capital investment net of depreciation is projected to be 30% of the sales increase in each year.
2. Working capital requirements are 7.0% of the projected shilling increase in sales in each year.
3. Debt will finance 40% of the net fixed capital investment and working capital investment.
4. The company has a 12% required rate of return on equity.
5. The firm has one million ordinary shares outstanding.

**Required:**

The value of equity for Equimax Holdings Limited using the two stage free cash flow to equity (FCFE) model.  
(Assume long-term growth rate of 5%).

(8 marks)

**(Total: 20 marks)**

**QUESTION TWO**

- (a) Examine three types of technical analysis indicators. (6 marks)
- (b) GCC Limited paid an annual dividend of Sh.1.25 per share yesterday and maintained its historic annual growth rate of 7%. You plan to purchase GCC Limited's shares today because you believe that the dividend growth rate will increase to 8% for the next three years and the company's market price per share will be Sh.40.00 at the end of year 3.

**Required:**

- (i) The price that you would be willing to pay for the company's shares assuming that you required a 12% rate of return. (4 marks)
- (ii) The maximum price that you would be willing to pay for GCC Limited's share assuming that the 8% growth rate would be maintained indefinitely and that you require a 12% rate of return. (2 marks)
- (iii) The price of the share at the end of year 3 assuming that the growth rate of 8% is maintained indefinitely and a 12% rate of return is expected. (2 marks)

(c) An equity analyst has gathered the following information about ABC Ltd's shares:

Current market price per share (MPS)	Sh.22.56
Current annual dividend per share (DPS)	Sh.1.60
Annual dividend growth rate for years 1 – 4	9%
Annual dividend growth rate for year 5 onwards	4%
Required rate of return	12%

**Required:**

Determine the percentage by which the intrinsic value exceeds the market price per share. (6 marks)

**(Total: 20 marks)**

**QUESTION THREE**

(a) Venus Limited's share is currently trading at Sh.95 at the securities exchange and its book value per share was Sh.100 at the end of last year. The research department at a leading investment bank has published an investment opinion on Venus Limited's share forecasting a return on equity (ROE) of 10% and dividend payout ratio of 30% into perpetuity.

**Additional information:**

- 1. The risk-free rate is 3%.
- 2. The share market risk premium is 7%.
- 3. The company's estimated beta is 1.1.

**Required:**

- (i) Based on the forecasts from the bank's research department, calculate the expected rate of return on Venus Limited's shares at the current share price. (3 marks)
- (ii) Determine whether Venus Limited's shares are trading at a discount or at a premium assuming that the capital asset pricing model (CAPM) holds. (2 marks)

(b) Fredrick Mugendi, an equity analyst, is valuing Bora Limited. He has made the following assumptions about the company:

- 1. Book value per share (BVPS) is estimated at Sh.9.62 on 31 December 2017.
- 2. Earnings per share (EPS) will be 22% of the beginning BVPS for the next eight years.
- 3. Cash dividends paid will be 30% of EPS.
- 4. At the end of the eight-year period, the market price per share (MPS) will be three times the BVPS.
- 5. The required rate of return is 8.3%.

**Required:**

Estimate the value per share of Bora Limited using the residual income model. (8 marks)

(c) Benson Ireri, a financial analyst at Wema Financial Services intends to use the cash flow return on investment (CFROI) measure to value Heavy Machinery Ltd.

He has gathered the following data:

Gross cash investment	Sh.2,925.863 million
Gross annual cash flow	Sh.427.156 million
Non-depreciated assets	Sh.522.968 million
Asset life	18 years

**Required:**

- (i) Calculate the CFROI for Heavy Machinery Ltd. (4 marks)
- (ii) Discuss three reasons why the CFROI approach is attractive in the equity valuation process. (3 marks)

**(Total: 20 marks)**

**QUESTION FOUR**

- (a) Highlight three advantages of the free cash flow model in the equity valuation process. (3 marks)
- (b) Uwezo Limited uses bonds, preference shares and ordinary shares as its sources of financing. The market value of each of these sources and their respective before-tax required rates of return are provided below:

	Market value Sh."million"	Required return (%)
Bonds	400	8
Preference shares	100	8
Ordinary shares	500	12

**Additional information:**

1.	Income available to shareholders	Sh.110 million
2.	Preference dividends	Sh.8 million
3.	Depreciation	Sh.40 million
4.	Investment in fixed capital	Sh.70 million
5.	Investment in working capital	Sh.20 million
6.	Net borrowing	Sh.25 million
7.	Corporation tax rate	30%
8.	Stable growth rate of free cash flow to firm (FCFF)	4.0%
9.	Stable growth rate of free cash flow to equity (FCFE)	5.0%

**Required:**

- (i) Weighted average cost of capital (WACC). (1 mark)
- (ii) The forecasted value of free cash flow to the firm (FCFF). (3 marks)
- (iii) The total value of the firm and the value of equity based on forecasted FCFF obtained in (b) (ii) above. (4 marks)
- (iv) The forecasted value of free cash flow to equity (FCFE). (2 marks)
- (v) The value of equity based on forecasted FCFE obtained in (b) (iv) above. (2 marks)
- (c) Brenda Akinyi, an equity analyst at Soi Capital is analysing the following market data relating to Binstar Limited:

1.	Current market price per share (MPS)	Sh.80
2.	Trailing annual earnings per share (EPS)	Sh.4.75
3.	Dividend growth rate	10%
4.	Risk-free rate	10.5%
5.	Equity risk premium	6.5%
6.	Beta versus Binstar Limited Index	0.89
7.	Trailing annual dividend per share (DPS)	Sh.2.50

**Required:**

- (i) Justified trailing price-to-earnings (P/E) ratio using the Gordon growth model. (2 marks)
- (ii) Justified leading price-to-earnings (P/E) ratio using the Gordon growth model. (2 marks)
- (iii) Determine whether the company is overvalued or undervalued based on your results in (c) (i) and (c) (ii) above. (1 mark)

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

- (a) Pizo Limited is a large firm operating in an industry where its sales and costs are subject to price inflation. Martin Wambua, a financial analyst, has been tasked with forecasting the company's costs.

**Required:**

- Assess three courses of action that Martin Wambua should consider in his analysis. (3 marks)

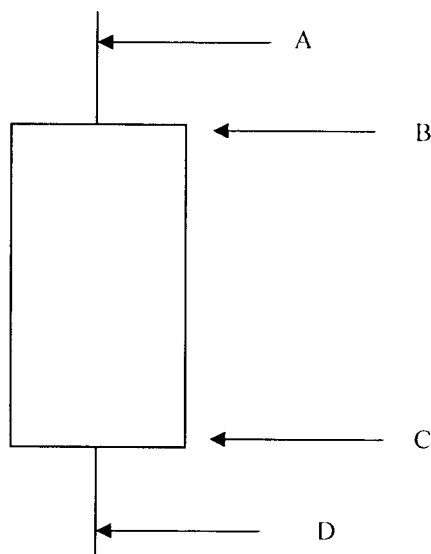
(b) An analyst gathered the following data for Waka Limited:

Recent share price	Sh.22.50
Shares outstanding	40 million
Market value of debt	Sh.137 million
Cash and marketable securities	Sh.62.3 million
Investments	Sh.327 million
Net income	Sh.137.5 million
Interest expense	Sh.6.9 million
Depreciation and amortisation	Sh.10.4 million
Taxes	Sh.95.9 million

**Required:**

- (i) Calculate Waka Limited's enterprise value to earnings before interest, tax, depreciation and amortisation (EBITDA). (3 marks)
- (ii) Examine two limitations of enterprise value to EBITDA. (2 marks)

(c) The following diagram relates to a candlestick chart used by technical analysts in assessing market movement:



**Required:**

- (i) Identify points A, B, C and D above. (2 marks)
  - (ii) Explain three benefits of candlestick charts in technical analysis. (3 marks)
- (d) Examine three characteristics of a well-functioning financial system in your country. (3 marks)
- (e) Company analysis takes place after the analyst has gained an understanding of the company's external environment and includes answering questions about how the company will respond to the threats and opportunities presented by the external environment.

In light of the above statement, describe two competitive strategies that a company should use in order to respond to the threats and opportunities presented by the external environment as postulated by Michael Porter. (4 marks)

**(Total: 20 marks)**

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

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

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	12%	14%	15%	16%	18%	20%	24%	28%	32%	36%
1	.9901	.9804	.9709	.9615	.9524	.9434	.9346	.9259	.9174	.9091	.8929	.8772	.8696	.8621	.8475	.8333	.8065	.7813	.7576	.7353
2	.9803	.9612	.9426	.9246	.9070	.8900	.8734	.8573	.8417	.8264	.7972	.7695	.7561	.7432	.7182	.6944	.6504	.6104	.5739	.5407
3	.9706	.9423	.9151	.8890	.8638	.8396	.8163	.7938	.7722	.7513	.7118	.6750	.6575	.6407	.6086	.5787	.5245	.4768	.4348	.3975
4	.9610	.9238	.8885	.8548	.8227	.7921	.7629	.7350	.7084	.6830	.6355	.5921	.5718	.5523	.5158	.4823	.4230	.3725	.3294	.2923
5	.9515	.9057	.8626	.8219	.7835	.7473	.7130	.6806	.6499	.6209	.5674	.5194	.4972	.4761	.4371	.4019	.3411	.2910	.2495	.2149
6	.9420	.8880	.8375	.7903	.7462	.7050	.6663	.6302	.5963	.5645	.5066	.4556	.4323	.4104	.3704	.3349	.2751	.2274	.1890	.1580
7	.9327	.8706	.8131	.7599	.7107	.6651	.6227	.5835	.5470	.5132	.4523	.3996	.3759	.3538	.3139	.2791	.2218	.1776	.1432	.1162
8	.9235	.8535	.7894	.7307	.6768	.6274	.5820	.5403	.5019	.4665	.4039	.3506	.3269	.3050	.2660	.2326	.1789	.1388	.1085	.0854
9	.9143	.8368	.7664	.7026	.6446	.5919	.5439	.5002	.4604	.4241	.3606	.3075	.2843	.2630	.2255	.1938	.1443	.1084	.0822	.0628
10	.9053	.8203	.7441	.6756	.6139	.5584	.5083	.4632	.4224	.3855	.3220	.2697	.2472	.2267	.1911	.1615	.1164	.0847	.0623	.0462
11	.8963	.8043	.7224	.6496	.5847	.5268	.4751	.4289	.3875	.3505	.2875	.2366	.2149	.1954	.1619	.1346	.0938	.0662	.0472	.0340
12	.8874	.7885	.7014	.6246	.5568	.4970	.4440	.3971	.3555	.3186	.2567	.2076	.1869	.1685	.1372	.1122	.0757	.0517	.0357	.0250
13	.8787	.7730	.6810	.6006	.5303	.4688	.4150	.3677	.3262	.2897	.2292	.1821	.1625	.1452	.1163	.0935	.0610	.0404	.0271	.0184
14	.8700	.7579	.6611	.5755	.5051	.4423	.3878	.3405	.2992	.2633	.2046	.1597	.1413	.1252	.0985	.0779	.0492	.0316	.0205	.0135
15	.8613	.7430	.6419	.5553	.4810	.4173	.3624	.3152	.2745	.2394	.1827	.1401	.1229	.1079	.0835	.0649	.0397	.0247	.0155	.0099
16	.8528	.7284	.6232	.5339	.4581	.3936	.3387	.2919	.2519	.2176	.1631	.1229	.1069	.0930	.0708	.0541	.0320	.0193	.0118	.0073
17	.8444	.7142	.6050	.5134	.4363	.3714	.3166	.2703	.2311	.1978	.1456	.1078	.0929	.0802	.0600	.0451	.0258	.0150	.0089	.0054
18	.8360	.7002	.5874	.4936	.4155	.3503	.2959	.2502	.2120	.1799	.1300	.0946	.0808	.0691	.0508	.0376	.0208	.0118	.0068	.0039
19	.8277	.6864	.5703	.4746	.3957	.3305	.2765	.2317	.1945	.1635	.1161	.0829	.0703	.0596	.0431	.0313	.0168	.0092	.0051	.0029
20	.8195	.6730	.5537	.4564	.3769	.3118	.2584	.2145	.1784	.1486	.1037	.0728	.0611	.0514	.0365	.0261	.0135	.0072	.0039	.0021
25	.7798	.6095	.4776	.3751	.2953	.2330	.1842	.1460	.1160	.0923	.0588	.0378	.0304	.0245	.0160	.0105	.0046	.0021	.0010	.0005
30	.7419	.5521	.4120	.3083	.2314	.1741	.1314	.0994	.0754	.0573	.0334	.0196	.0151	.0116	.0070	.0042	.0016	.0006	.0002	.0001
40	.6717	.4529	.3066	.2083	.1420	.0972	.0668	.0460	.0318	.0221	.0107	.0053	.0037	.0026	.0013	.0007	.0002	.0001		
50	.6080	.3715	.2281	.1407	.0872	.0543	.0339	.0213	.0134	.0085	.0035	.0014	.0009	.0006	.0003	.0001				
60	.5504	.3048	.1697	.0951	.0535	.0303	.0173	.0099	.0057	.0033	.0011	.0004	.0002	.0001						

\* The factor is zero to four decimal places

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

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

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

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