ZIMBABWE UNIVERSITY

EZEKIEL GUTI

FACULTY OF BUSINESS, ECONOMICS AND ACCOUNTING

DEPARTMENT OF ECONOMICS AND BUSINESS SCIENCES

EXAMINATION PAPER

COURSE CODE	:	CBM204
COURSE TITLE	:	BUSINESS FINANCE
SPECIAL REQUIREMENTS	:	DAL Calculator, Financial Tables (if not attached)
DURATION	:	3 Hours
LEVEL	:	2:2
DATE	:	November/December 2019

19 NOV 2019

INSTRUCTIONS TO CANDIDATES:

1. No cell phones are allowed in the examination venue.
2. Answer any **FOUR (4)** questions, each question carries **25 marks**.
3. Begin each question on a new page.
4. The number of marks for each question or part question is shown in brackets [ ]
5. Reading time is 15 minutes **OR** as shall be advised by the invigilator(s).

Question 1

ZEGU Ltd, an associate of ZEGU, specialises in game balls and accessories and has recently carried out successful trials on a new type of golf ball that has been developed to increase the distance the ball travels when struck. Market research undertaken by the business has shown that the likely product life of the new golf ball (before alternative products are available) is five years. The new golf ball could be sold to retail golf outlets at Z$20 per pack of four balls. For each of the five years of the new product's life, sales demand has been estimated as follows:

Number of four-ball packs	Probability of sale
120,000	0.3
138,000	0.6
152,000	0.1

If ZEGU Ltd decides to launch the new product, the production can begin at once, providing a new piece of equipment costing Z$60,000 is purchased immediately. At the end of the product life the machine could be sold for Z$5,000.

Each pack of four golf balls requires:

- 2 hours of labour at a cost of Z$5.50 per hour
- materials cost of Z$2.00

Additional production workers will be required and total recruitment costs are estimated at Z$2,000. They are not expected to be retained in the business at the end of the five year contract and redundancy costs of Z$800 per person (total of five new staff) will be payable by the business. ZEGU Ltd has a cost of capital of 14%.

Required:

(a) Calculate the expected net present value (NPV) of the new product. **(15 marks)**

(b) State, with reasons, whether ZEGU Ltd should launch the new product. **(5 marks)**

(c) Discuss the strengths and weaknesses of the expected net present value approach for making investment decisions. **(5 marks)**

(Total 25 marks)

Question 2

Chipindura (Pvt) Ltd t/a Chipindura Industries has six million ordinary shares outstanding with current market value of Z$1 per share. The company also has debt with current market value of Z$4 million and a current interest rate of 12%. The market has annual earnings before interest of Z$3 million. The market believes that this performance can be maintained indefinitely. The company has a policy of distributing all its after tax earnings as a dividend and corporate tax is 33%

Required:

(a) Calculate the required rate of return of shareholders in Chipindura (Pvt) Ltd **(4 marks)**.

(b) Determine the company's Weighted Average Cost of Capital (WACC).**(8 marks)**

(c) Use your estimated WACC figure to verify that the total market value of Chipindura (Pvt) Ltd is equal to Z$10 millionn (**4 marks**).

d) Cassava, a newly listed subsidiary of Eco-Chinyi is experiencing a period of rapid growth since listing on the ZSE. Earnings and dividends are expected to grow at a rate of 15% during the next two years at 13% in the 3rd year and a constant growth rate of 6% thereafter.
The company's last dividend was Z$1.15 and the required rate of return on stock is 12%.

Calculate the value of Cassava share today (**9 marks).**

(Total 25 marks)

Question 3

a) State and discuss the three theories of dividends and their applicability to the Zimbabwean companies **(12 marks)**

b) Explain a Finance lease and an Operationg Lease (**4 marks**)

   i. Which of the two do you think is ideal for the current Zimbabwean economy from the view of the lessee (**4 marks**)

c) Explain financial leverage and operating leverage in relation to business risk in Zimbabwe? (**5 marks**).

Question 4

Exchange rate risk management is of key importance to a company that operates internationally or uses considerable debt finance.

Required:

(a) Explain your understanding of the following two terms:
(i) spot rate
(ii) forward rate **(4 marks)**

(b) Consider the following example.
Assume that the exchange rate between the Zimbabwean dollar and SA Rand is as follows:

$ spot rate	1.6647 – 1.6883
One month forward $ rate	1.7001 – 1.8113
Three month forward $ rate	1.8663 – 1.9218

Required:

Describe and explain what is meant by these figures. **(6 marks)**

(c) You are the Finance Executive of a SA Business and you need to finance the purchase of a new moulding machine, in three months' time, at a price of $2,440,000. You have decided to hedge the exchange rate risk by buying a three month Rand call option giving you the right, but not the obligation, to deliver Zimbabwean dollars, in exchange for Rands, at a price of $1.9052, when the machine is delivered in three months' time.

Three months later the Zimbabwean dollars are delivered on the due date and you have to decide whether or not to exercise the right to exchange the Zimbabwean dollars for SA Rand at $1.9052.

Scenario 1
The Zim dollar has strengthened against the Rand to $1.7638.

Scenario 2
The Zim dollar has weakened against the Rand to $2.1062.

Required:
For each of the two scenarios above determine the best course of action for you as the Finance Executive. Give reasons for your answer. **(8 marks)**

(d) State **three** types of risk that operate in the international market place. **(3 marks)**

(e) How do you think Xenophobia attacks in SA would impact on the Zim dollar/Rand exchange rate. **(4 marks)**

(Total 25 marks)

Question 5

RTG, a successful hotel group, has made a bid for Cresta, a large but declining competitor. The following information is available for both companies which are quoted on the Zimbabwe Stock Exchange.

	Cresta	**RTG**
Share price	Z$0.90	Z$0.80
Number of shares	5m	8m

Both a cash bid and a share bid have been made. RTG has offered Cresta two shares in RTG for every share in Cresta. Alternatively, a cash offer of Z$1.00 per share has been made. RTG expects the takeover to generate savings of Z$2m in present value terms.

Required:
(a) Advise the shareholders in Cresta which offer to accept. Include both financial and other factors in your answer. **(15 marks)**

(b) How might RTG expect to achieve the savings of Z$2m? What uncertainties might RTG face in trying to achieve this savings figure? **(10 marks)**
(Total 25 marks)

Question 6

a) Define working capital and briefly explain its significance to SMEs in the manufacturing sector in Zimbabwe(**4 mark**)

b) Describe the three working capital management policies in relation to risk, return and liquidity (**12 marks**).

c) Explain the economic order quantity (EOQ), just in time (JIT) and ABC methods of inventory management, and evaluate their applicability to the Zimbabwean situation (**9 marks**).

Good luck!

ZEGU BUSINESS FINANCE-2019

FINANCIAL & **MATHS TABLES AND FORMULAE**-FOR CBM204

Present value table Especially for use in an Examination

Present value of 1.00 unit of currency, that is $(1 + r)^{-n}$ where r = interest rate; n = number of periods until payment or receipt.

Periods (n)	Interest rates (r)									
	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909
2	0.980	0.961	0.943	0.925	0.907	0.890	0.873	0.857	0.842	0.826
3	0.971	0.942	0.915	0.889	0.864	0.840	0.816	0.794	0.772	0.751
4	0.961	0.924	0.888	0.855	0.823	0.792	0.763	0.735	0.708	0.683
5	0.951	0.906	0.863	0.822	0.784	0.747	0.713	0.681	0.650	0.621
6	0.942	0.888	0.837	0.790	0.746	0.705	0.666	0.630	0.596	0.564
7	0.933	0.871	0.813	0.760	0.711	0.665	0.623	0.583	0.547	0.513
8	0.923	0.853	0.789	0.731	0.677	0.627	0.582	0.540	0.502	0.467
9	0.914	0.837	0.766	0.703	0.645	0.592	0.544	0.500	0.460	0.424
10	0.905	0.820	0.744	0.676	0.614	0.558	0.508	0.463	0.422	0.386
11	0.896	0.804	0.722	0.650	0.585	0.527	0.475	0.429	0.388	0.350
12	0.887	0.788	0.701	0.625	0.557	0.497	0.444	0.397	0.356	0.319
13	0.879	0.773	0.681	0.601	0.530	0.469	0.415	0.368	0.326	0.290
14	0.870	0.758	0.661	0.577	0.505	0.442	0.388	0.340	0.299	0.263
15	0.861	0.743	0.642	0.555	0.481	0.417	0.362	0.315	0.275	0.239
16	0.853	0.728	0.623	0.534	0.458	0.394	0.339	0.292	0.252	0.218
17	0.844	0.714	0.605	0.513	0.436	0.371	0.317	0.270	0.231	0.198
18	0.836	0.700	0.587	0.494	0.416	0.350	0.296	0.250	0.212	0.180
19	0.828	0.686	0.570	0.475	0.396	0.331	0.277	0.232	0.194	0.164
20	0.820	0.673	0.554	0.456	0.377	0.312	0.258	0.215	0.178	0.149

Periods (n)	Interest rates (r)									
	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%
1	0.901	0.893	0.885	0.877	0.870	0.862	0.855	0.847	0.840	0.833
2	0.812	0.797	0.783	0.769	0.756	0.743	0.731	0.718	0.706	0.694
3	0.731	0.712	0.693	0.675	0.658	0.641	0.624	0.609	0.593	0.579
4	0.659	0.636	0.613	0.592	0.572	0.552	0.534	0.516	0.499	0.482
5	0.593	0.567	0.543	0.519	0.497	0.476	0.456	0.437	0.419	0.402
6	0.535	0.507	0.480	0.456	0.432	0.410	0.390	0.370	0.352	0.335
7	0.482	0.452	0.425	0.400	0.376	0.354	0.333	0.314	0.296	0.279
8	0.434	0.404	0.376	0.351	0.327	0.305	0.285	0.266	0.249	0.233
9	0.391	0.361	0.333	0.308	0.284	0.263	0.243	0.225	0.209	0.194
10	0.352	0.322	0.295	0.270	0.247	0.227	0.208	0.191	0.176	0.162
11	0.317	0.287	0.261	0.237	0.215	0.195	0.178	0.162	0.148	0.135
12	0.286	0.257	0.231	0.208	0.187	0.168	0.152	0.137	0.124	0.112
13	0.258	0.229	0.204	0.182	0.163	0.145	0.130	0.116	0.104	0.093
14	0.232	0.205	0.181	0.160	0.141	0.125	0.111	0.099	0.088	0.078
15	0.209	0.183	0.160	0.140	0.123	0.108	0.095	0.084	0.079	0.065
16	0.188	0.163	0.141	0.123	0.107	0.093	0.081	0.071	0.062	0.054
17	0.170	0.146	0.125	0.108	0.093	0.080	0.069	0.060	0.052	0.045
18	0.153	0.130	0.111	0.095	0.081	0.069	0.059	0.051	0.044	0.038
19	0.138	0.116	0.098	0.083	0.070	0.060	0.051	0.043	0.037	0.031
20	0.124	0.104	0.087	0.073	0.061	0.051	0.043	0.037	0.031	0.026

FORMULAE

Valuation models

(i) Irredeemable preference shares, paying a constant annual dividend, d, in perpetuity, where P_0 is the ex-div value:

$$P_0 = \frac{d}{k_{pref}}$$

(ii) Ordinary (equity) shares, paying a constant annual dividend, d, in perpetuity, where P_0 is the ex-div value:

$$P_0 = \frac{d}{k_e}$$

(iii) Ordinary (equity) shares, paying an annual dividend, d, growing in perpetuity at a constant rate, g, where P_0 is the ex-div value:

$$P_0 = \frac{d_1}{k_e - g} \quad \text{or} \quad P_0 = \frac{d_0[1+g]}{k_e - g}$$

(iv) Irredeemable bonds, paying annual after-tax interest, $i[1-t]$, in perpetuity, where P_0 is the ex-interest value:

$$P_0 = \frac{i[1-t]}{k_{dnet}}$$

or, without tax:

$$P_0 = \frac{i}{k_d}$$

(v) Total value of the geared entity, V_g (based on MM):

$$V_g = V_u + TB$$

(vi) Future value of S, of a sum X, invested for n periods, compounded at r% interest:

$$S = X[1+r]^n$$

(vii) Present value of 1·00 payable or receivable in n years, discounted at r% per annum:

$$PV = \frac{1}{[1+r]^n}$$

(viii) Present value of an annuity of 1·00 per annum, receivable or payable for n years, commencing in one year, discounted at r% per annum:

$$PV = \frac{1}{r}\left[1 - \frac{1}{[1+r]^n}\right]$$

(ix) Present value of 1·00 per annum, payable or receivable in perpetuity, commencing in one year, discounted at r% per annum:

$$PV = \frac{1}{r}$$

(x) Present value of 1·00 per annum, receivable or payable, commencing in one year, growing in perpetuity at a constant rate of g% per annum, discounted at r% per annum:

$$PV = \frac{1}{r - g}$$

Cost of capital

(i) Cost of irredeemable preference shares, paying an annual dividend, d, in perpetuity, and having a current ex-div price P_0:

$$k_{pref} = \frac{d}{P_0}$$

(ii) Cost of irredeemable bonds, paying annual net interest, $i\,[1-t]$, and having a current ex-interest price P_0:

$$k_{d\,net} = \frac{i[1-t]}{P_0}$$

(iii) Cost of ordinary (equity) shares, paying an annual dividend, d, in perpetuity, and having a current ex-div price P_0:

$$k_e = \frac{d}{P_0}$$

(iv) Cost of ordinary (equity) shares, having a current ex-div price, P_0, having just paid a dividend, d_0, with the dividend growing in perpetuity by a constant g% per annum:

$$k_e = \frac{d_1}{P_0} + g \quad \text{or} \qquad k_e = \frac{d_0[1+g]}{P_0} + g$$

(v) Cost of ordinary (equity) shares, using the CAPM:

$$k_e = R_f + [R_m - R_f]ß$$

(vi) Cost of ordinary (equity) share capital in a geared entity :

$$k_{eg} = k_{eu} + [k_{eu} - k_d]\,\frac{V_D[1-t]}{V_E}$$

(vii) Weighted average cost of capital, k_0 or WACC

$$WACC = k_e\left[\frac{V_E}{V_E + V_D}\right] + k_d[1-t]\left[\frac{V_D}{V_E + V_D}\right]$$

(viii) Adjusted cost of capital (MM formula):

$$K_{adj} = k_{eu}\,[1 - tL] \quad \text{or} \qquad r^* = r[1 - T^*L]$$

(ix) Ungear ß:

$$ß_u = ß_g\left[\frac{V_E}{V_E + V_D[1-t]}\right] + ß_d\left[\frac{V_D[1-t]}{V_E + V_D[1-t]}\right]$$

(x) Regear ß:

$$ß_g = ß_u + [ß_u - ß_d]\,\frac{V_D[1-t]}{V_E}$$

(xi) Adjusted discount rate to use in international capital budgeting (International Fisher effect)

$$\frac{1 + \text{annual discount rate B\$}}{1 + \text{annual discount rate A\$}} = \frac{\text{Future spot rate A\$/B\$ in 12 months' time}}{\text{Spot rate A\$/B\$}}$$

where A$/B$ is the number of B$ to each A$

Cumulative present value of 1.00 unit of currency per annum

Receivable or Payable at the end of each year for n years $\left[\frac{1-(1+r)^{-n}}{r}\right]$

Periods (n)	Interest rates (r)									
	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909
2	1.970	1.942	1.913	1.886	1.859	1.833	1.808	1.783	1.759	1.736
3	2.941	2.884	2.829	2.775	2.723	2.673	2.624	2.577	2.531	2.487
4	3.902	3.808	3.717	3.630	3.546	3.465	3.387	3.312	3.240	3.170
5	4.853	4.713	4.580	4.452	4.329	4.212	4.100	3.993	3.890	3.791
6	5.795	5.601	5.417	5.242	5.076	4.917	4.767	4.623	4.486	4.355
7	6.728	6.472	6.230	6.002	5.786	5.582	5.389	5.206	5.033	4.868
8	7.652	7.325	7.020	6.733	6.463	6.210	5.971	5.747	5.535	5.335
9	8.566	8.162	7.786	7.435	7.108	6.802	6.515	6.247	5.995	5.759
10	9.471	8.983	8.530	8.111	7.722	7.360	7.024	6.710	6.418	6.145
11	10.368	9.787	9.253	8.760	8.306	7.887	7.499	7.139	6.805	6.495
12	11.255	10.575	9.954	9.385	8.863	8.384	7.943	7.536	7.161	6.814
13	12.134	11.348	10.635	9.986	9.394	8.853	8.358	7.904	7.487	7.103
14	13.004	12.106	11.296	10.563	9.899	9.295	8.745	8.244	7.786	7.367
15	13.865	12.849	11.938	11.118	10.380	9.712	9.108	8.559	8.061	7.606
16	14.718	13.578	12.561	11.652	10.838	10.106	9.447	8.851	8.313	7.824
17	15.562	14.292	13.166	12.166	11.274	10.477	9.763	9.122	8.544	8.022
18	16.398	14.992	13.754	12.659	11.690	10.828	10.059	9.372	8.756	8.201
19	17.226	15.679	14.324	13.134	12.085	11.158	10.336	9.604	8.950	8.365
20	18.046	16.351	14.878	13.590	12.462	11.470	10.594	9.818	9.129	8.514

Periods (n)	Interest rates (r)									
	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%
1	0.901	0.893	0.885	0.877	0.870	0.862	0.855	0.847	0.840	0.833
2	1.713	1.690	1.668	1.647	1.626	1.605	1.585	1.566	1.547	1.528
3	2.444	2.402	2.361	2.322	2.283	2.246	2.210	2.174	2.140	2.106
4	3.102	3.037	2.974	2.914	2.855	2.798	2.743	2.690	2.639	2.589
5	3.696	3.605	3.517	3.433	3.352	3.274	3.199	3.127	3.058	2.991
6	4.231	4.111	3.998	3.889	3.784	3.685	3.589	3.498	3.410	3.326
7	4.712	4.564	4.423	4.288	4.160	4.039	3.922	3.812	3.706	3.605
8	5.146	4.968	4.799	4.639	4.487	4.344	4.207	4.078	3.954	3.837
9	5.537	5.328	5.132	4.946	4.772	4.607	4.451	4.303	4.163	4.031
10	5.889	5.650	5.426	5.216	5.019	4.833	4.659	4.494	4.339	4.192
11	6.207	5.938	5.687	5.453	5.234	5.029	4.836	4.656	4.486	4.327
12	6.492	6.194	5.918	5.660	5.421	5.197	4.988	7.793	4.611	4.439
13	6.750	6.424	6.122	5.842	5.583	5.342	5.118	4.910	4.715	4.533
14	6.982	6.628	6.302	6.002	5.724	5.468	5.229	5.008	4.802	4.611
15	7.191	6.811	6.462	6.142	5.847	5.575	5.324	5.092	4.876	4.675
16	7.379	6.974	6.604	6.265	5.954	5.668	5.405	5.162	4.938	4.730
17	7.549	7.120	6.729	6.373	6.047	5.749	5.475	5.222	4.990	4.775
18	7.702	7.250	6.840	6.467	6.128	5.818	5.534	5.273	5.033	4.812
19	7.839	7.366	6.938	6.550	6.198	5.877	5.584	5.316	5.070	4.843
20	7.963	7.469	7.025	6.623	6.259	5.929	5.628	5.353	5.101	4.870

Other formulae

(i) Expectations theory:

$$\text{Future spot rate A\$/B\$} = \text{Spot rate A\$/B\$} \times \frac{1 + \text{nominal country B interest rate}}{1 + \text{nominal country A interest rate}}$$

where:

A\$/B\$ is the number of B\$ to each A\$, and

A\$ is the currency of country A and B\$ is the currency of country B

(ii) Purchasing power parity (law of one price):

$$\text{Future spot rate A\$B\$} = \text{Spot rate A\$/B\$} \times \frac{1 + \text{country B inflation rate}}{1 + \text{country A inflation rate}}$$

(iii) Link between nominal (money) and real interest rates:

$$[1 + \text{nominal (money) rate}] = [1 + \text{real interest rate}][1 + \text{inflation rate}]$$

(iv) Equivalent annual cost:

$$\text{Equivalent annual cost} = \frac{PV \text{ of costs over } n \text{ years}}{n \text{ year annuity factor}}$$

(v) Theoretical ex-rights price:

$$\text{TERP} = \frac{1}{N + 1}[(N \times \text{cum rights price}) + \text{issue price}]$$

(vi) Value of a right:

$$\frac{\text{Theoretical ex rights price} - \text{issue price}}{N}$$

where N = number of rights required to buy one share.

Wish you the very best!