



TAXATION PROGRAMME EXAMINATIONS

DIPLOMA LEVEL

D2: FINANCIAL MANAGMENT

FRIDAY 17 JUNE 2016

TOTAL MARKS – 100; TIME ALLOWED: THREE (3) HOURS

INSTRUCTIONS TO CANDIDATES

1. You have fifteen (15) minutes reading time. Use it to study the examination paper carefully so that you understand what to do in each question. You will be told when to start writing.
2. This question paper consists of **FOUR (4)** questions of Twenty Five (25) marks each. You must attempt all the **FOUR (4)** questions.
3. Enter your Student number and your National Registration Card number on the front of the answer booklet. Your name must **NOT** appear anywhere on your answer booklet.
4. Do **NOT** write in pencil (except for graphs and diagrams).
5. **Cell Phones** are **NOT** allowed in the Examination Room.
6. The marks shown against the requirement(s) for each question should be taken as an indication of the expected length and depth of the answer.
7. All workings must be done in the answer booklet.
8. Present legible and tidy work.
9. Graph paper (if required) is provided at the end of the answer booklet.
10. Formulae, Present Value, and Annuity tables are provided at the end of this question paper.

Attempt all FOUR (4) Questions

QUESTION ONE

Kariba Pharmaceuticals is a manufacturer of drugs. It uses 40,000 boxes of compound X per annum. The company is considering managing this inventory item using a just-in-time system. The proposed procurement system will raise the number of orders placed but lower the costs of placing and receiving orders as detailed below:

	Actual	Proposed
Co = Ordering cost per order	K1000	K250
P = Purchase cost per item	K250	K250
I = Inventory holding cost (as a percentage of the purchase cost)	20%	20%

The proposed system will require one-off reorganization costs estimated at K5,000 which are allowable for tax purposes. The rate of corporate tax is 35% per year and the company's cost of capital is 12%. The proposed procurement system has a life span of ten years.

Assume corporate tax is paid in the year it arises and that no capital allowances are available on the proposed system.

Required:

- Assess the effect of the proposed procurement system on the economic order quantity (EOQ) and determine the savings in inventory costs. (5 marks)
- Calculate the present value of the proposed system and advise whether it is worthwhile in financial terms. (12 marks)
- Discuss the nature of financial objectives that may be set in a not-for-profit organization such as a hospital. (8 marks)

[Total: 25 Marks]

QUESTION TWO

The following income statements have been produced by Lexus Plc and Techno Plc for the year ended 31st December 2014.

	Lexus Plc	Techno Plc
	K'm	K'm
Sales revenue	700	500
Cost of sales	<u>(320)</u>	<u>(235)</u>
Gross profit	380	265

Operating expenses	(140)	(90)
Operating profit	240	175
Taxation	(84)	(62)
Profit after tax	156	113

Notes to the income statements:

- (i) Lexus Plc acquired 70% of the ordinary shares of Techno Plc on 1st January 2014.
- (ii) During the year ended 31st December 2014, Lexus Plc had sold K40 million worth of goods to Techno Plc. The markup on these goods is 25%. Only a quarter of these goods remained in the inventory of Techno Plc. On 31st December 2014.

Required:

- (a) Prepare the Techno Group consolidated Income Statement for the year ended 31st December 2014. (12 marks)
- (b) Discuss the following working capital management policies:
 - (i) Conservative policy
 - (ii) Aggressive policy
 - (iii) Moderate policy

(13 marks)

[Total: 25 Marks]

QUESTION THREE

The consolidated Statement of Financial Position of LBS Services at 31 December 2014 was as follows.

	K'000	K'000
Non-current assets		14,350
Current assets	7,900	
Creditors falling due within a year	(3,600)	
Net current assets		4,300
Net Assets		18,650
Ordinary share capital (K0.40 shares)		2,000
7% preference shares (K1,000 shares)		1,000
Share premium account		1,100
Retained earnings		6,550
9% irredeemable loan notes		8,000
Equity and non-current liabilities		18,650

The current price of an ordinary share is K2.16 ex dividend. The dividend of K0.20 per share is payable during the next few days. The expected rate of growth of the dividend is 10% per annum. The current price of a preference share is K770 and the dividend has recently been paid. The loan notes interest has also been paid recently. The loan notes are currently trading at K800 per K1,000 nominal notes. Assume that LBS issued the loan notes a year ago to finance a new investment. Corporate tax is at the rate of 35% per year.

Required:

(a) Calculate the gearing ratio (Prior charge capital/(Equity) for LBS using:

(i) Book values

(ii) Market values (6 marks)

(b) Calculate the company's weighted average cost of capital (WACC), using the respective market values as weighting factors. (8 marks)

(c) Discuss the circumstances under which the weighted average cost of capital is appropriate for use as a discount rate in investment appraisal. (6 marks)

(d) LBS Services is considering an investment in Glenn Holdings Ltd, whose capital structure comprises of 10,000 A voting ordinary shares and 10,000 B non-voting ordinary shares. Both the classes of shares have the same dividend rights.

Describe the appropriate group accounting for Glenn Holdings Ltd if:

(i) LBS Services purchases 10,000 B and 4,000 A ordinary shares.

(ii) LBS Services purchases 6,000 A ordinary shares. (5 marks)

[Total: 25 Marks]

QUESTION FOUR

IBZ Limited is a plastic manufacturing company listed on the stock exchange market. Its uses a chemical called MM2 in the manufacturing of plastics. The company management is considering making changes in the area of Inventory and accounts payable management. IBZ Limited also plan to raise finances for an expansion project.

Regarding the inventory management, it has been suggested that the order size for MM2 should be determined using the economic order quantity model (EOQ). IBZ Limited projects that demand for Product MM2 will be 200,000 units in the coming year and it has traditionally ordered 15% of annual demand per order. The ordering cost is expected to be K700 per order while the holding cost is expected to be K30 per unit per year. A buffer inventory of 7,000 units of Product MM2 will be maintained, whether orders are made by the traditional method or using

the economic order quantity model. The management has also proposed to increase the payment payable period from the current 30 days to 60 days.

IBZ Limited issued 1 for 3 rights shares at an exercise price of K3.5 in order to raise funds for the expansion project. The market value of its shares immediately prior to the rights issue was K5 per share. IBZ Limited had three million shares before the issuance of rights shares. Shareholders exercised all their rights.

Required:

- (a) Compute the cost of the current ordering policy for chemical MM2. (5 marks)
- (b) Determine the change in the costs of inventory management that will arise if the economic order quantity is used to determine the optimum order size for chemical MM2. (8 marks)
- (c) Calculate the theoretical ex rights price and assess the effect on the shareholders' wealth. Assume the actual market value of shares is equal to the theoretical ex rights price. (7 marks)
- (d) Discuss any implications on IBZ Limited if the proposed change in the payment payable period is implemented. (5 marks)

[Total: 25 Marks]

END OF PAPER

Formulae Sheet

Learning curve

$$Y = ax^b$$

Where Y = cumulative average time per unit to produce x units

a = the time taken for the first unit of output

x = the cumulative number of units produced

b = the index of learning ($\log LR/\log 2$)

LR = the learning rate as a decimal

Demand curve

$$P = a - bQ$$

$$b = \frac{\text{change in price}}{\text{change in quantity}}$$

a = price when Q = 0

$$MR = a - 2bQ$$

Modified Internal Rate of Return

$$MIRR = \left[\frac{PV_R}{PV_I} \right]^{\frac{1}{n}} (1 + r_e) - 1$$

Present Value Table

Present value of 1 i.e. $(1 + r)^{-n}$

Where r = discount rate
 n = number of periods until payment

Periods (n)	Discount rate (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	1
2	0.980	0.961	0.943	0.925	0.907	0.890	0.873	0.857	0.842	0.826	2
3	0.971	0.942	0.915	0.889	0.864	0.840	0.816	0.794	0.772	0.751	3
4	0.961	0.924	0.888	0.855	0.823	0.792	0.763	0.735	0.708	0.683	4
5	0.951	0.906	0.863	0.822	0.784	0.747	0.713	0.681	0.650	0.621	5
6	0.942	0.888	0.837	0.790	0.746	0.705	0.666	0.630	0.596	0.564	6
7	0.933	0.871	0.813	0.760	0.711	0.665	0.623	0.583	0.547	0.513	7
8	0.923	0.853	0.789	0.731	0.677	0.627	0.582	0.540	0.502	0.467	8
9	0.914	0.837	0.766	0.703	0.645	0.592	0.544	0.500	0.460	0.424	9
10	0.905	0.820	0.744	0.676	0.614	0.558	0.508	0.463	0.422	0.386	10
11	0.896	0.804	0.722	0.650	0.585	0.527	0.475	0.429	0.388	0.350	11
12	0.887	0.788	0.701	0.625	0.557	0.497	0.444	0.397	0.356	0.319	12
13	0.879	0.773	0.681	0.601	0.530	0.469	0.415	0.368	0.326	0.290	13
14	0.870	0.758	0.661	0.577	0.505	0.442	0.388	0.340	0.299	0.263	14
15	0.861	0.743	0.642	0.555	0.481	0.417	0.362	0.315	0.275	0.239	15
(n)	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	1
2	0.812	0.797	0.783	0.769	0.756	0.743	0.731	0.718	0.706	0.694	2
3	0.731	0.712	0.693	0.675	0.658	0.641	0.624	0.609	0.593	0.579	3
4	0.659	0.636	0.613	0.592	0.572	0.552	0.534	0.516	0.499	0.482	4
5	0.593	0.567	0.543	0.519	0.497	0.476	0.456	0.437	0.419	0.402	5
6	0.535	0.507	0.480	0.456	0.432	0.410	0.390	0.370	0.352	0.335	6
7	0.482	0.452	0.425	0.400	0.376	0.354	0.333	0.314	0.296	0.279	7
8	0.434	0.404	0.376	0.351	0.327	0.305	0.285	0.266	0.249	0.233	8
9	0.391	0.361	0.333	0.308	0.284	0.263	0.243	0.225	0.209	0.194	9
10	0.352	0.322	0.295	0.270	0.247	0.227	0.208	0.191	0.176	0.162	10
11	0.317	0.287	0.261	0.237	0.215	0.195	0.178	0.162	0.148	0.135	11
12	0.286	0.257	0.231	0.208	0.187	0.168	0.152	0.137	0.124	0.112	12
13	0.258	0.229	0.204	0.182	0.163	0.145	0.130	0.116	0.104	0.093	13
14	0.232	0.205	0.181	0.160	0.141	0.125	0.111	0.099	0.088	0.078	14
15	0.209	0.183	0.160	0.140	0.123	0.108	0.095	0.084	0.074	0.065	15

Annuity Table

Present value of an annuity of 1 i.e. $\frac{1 - (1 + r)^{-n}}{r}$

Where r = discount rate
 n = number of periods

Periods (n)	Discount rate (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	1
2	1.970	1.942	1.913	1.886	1.859	1.833	1.808	1.783	1.759	1.736	2
3	2.941	2.884	2.829	2.775	2.723	2.673	2.624	2.577	2.531	2.487	3
4	3.902	3.808	3.717	3.630	3.546	3.465	3.387	3.312	3.240	3.170	4
5	4.853	4.713	4.580	4.452	4.329	4.212	4.100	3.993	3.890	3.791	5
6	5.795	5.601	5.417	5.242	5.076	4.917	4.767	4.623	4.486	4.355	6
7	6.728	6.472	6.230	6.002	5.786	5.582	5.389	5.206	5.033	4.868	7
8	7.652	7.325	7.020	6.733	6.463	6.210	5.971	5.747	5.535	5.335	8
9	8.566	8.162	7.786	7.435	7.108	6.802	6.515	6.247	5.995	5.759	9
10	9.471	8.983	8.530	8.111	7.722	7.360	7.024	6.710	6.418	6.145	10
11	10.37	9.787	9.253	8.760	8.306	7.887	7.499	7.139	6.805	6.495	11
12	11.26	10.58	9.954	9.385	8.863	8.384	7.943	7.536	7.161	6.814	12
13	12.13	11.35	10.63	9.986	9.394	8.853	8.358	7.904	7.487	7.103	13
14	13.00	12.11	11.30	10.56	9.899	9.295	8.745	8.244	7.786	7.367	14
15	13.87	12.85	11.94	11.12	10.38	9.712	9.108	8.559	8.061	7.606	15
(n)	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	1
2	1.713	1.690	1.668	1.647	1.626	1.605	1.585	1.566	1.547	1.528	2
3	2.444	2.402	2.361	2.322	2.283	2.246	2.210	2.174	2.140	2.106	3
4	3.102	3.037	2.974	2.914	2.855	2.798	2.743	2.690	2.639	2.589	4
5	3.696	3.605	3.517	3.433	3.352	3.274	3.199	3.127	3.058	2.991	5
6	4.231	4.111	3.998	3.889	3.784	3.685	3.589	3.498	3.410	3.326	6
7	4.712	4.564	4.423	4.288	4.160	4.039	3.922	3.812	3.706	3.605	7
8	5.146	4.968	4.799	4.639	4.487	4.344	4.207	4.078	3.954	3.837	8
9	5.537	5.328	5.132	4.946	4.772	4.607	4.451	4.303	4.163	4.031	9
10	5.889	5.650	5.426	5.216	5.019	4.833	4.659	4.494	4.339	4.192	10
11	6.207	5.938	5.687	5.453	5.234	5.029	4.836	4.656	4.486	4.327	11
12	6.492	6.194	5.918	5.660	5.421	5.197	4.988	4.793	4.611	4.439	12
13	6.750	6.424	6.122	5.842	5.583	5.342	5.118	4.910	4.715	4.533	13
14	6.982	6.628	6.302	6.002	5.724	5.468	5.229	5.008	4.802	4.611	14
15	7.191	6.811	6.462	6.142	5.847	5.575	5.324	5.092	4.876	4.675	15

**JUNE 2016: FINANCIAL MANAGEMENT (D2)
SOLUTIONS**

SOLUTION ONE

1(a)

$$EOQ \text{ (current)} = \sqrt{2CoD/C_H} = \sqrt{2 \times 100 \times 40,000 / [20\% \times 2.50]} = 4,000 \text{ boxes/ order}$$

$$EOQ \text{ (new system)} = \sqrt{2CoD/C_H} = \sqrt{2 \times 25 \times 40,000 / [20\% \times 2.50]} = 2,000 \text{ boxes/order}$$

The effect of the new system is to reduce the economic order quantity by half.

Item	Old	New	Savings (K'000)
Number of orders	10 [40,000/4,000]	20 [40,000/2,000]	10
Ordering costs(K'000) p.a	10[10X1,000]	5[20X250]	5
Average inventory	2,000 [4,000/2]	1,000 [2,000/2]	1,000
Carrying costs (K'000) p.a	100[K250X20%X2,000]	50[K250X20%X1,000]	50
Total Inventory Costs(K'000) [C _o +C _H] p.a	110[10+100]	55[5+50]	55

1(b) The present value of the proposal is found by comparing the outflow cost with the discounted after-tax savings over the ten – year life of the new system at a discount rate of 12%. The after tax savings in inventory costs are K35,750 [(1-0.35) X 55,000]

Year		Cash flow (K)	DF@12%	PV(K)
0	Cost of re-organisation	(5,000)	1.000	(5,000)
0	Tax saving [0.35*5,000]	1,750	1.000	1,750
1-10	After tax savings in costs	35,750	5.650	201,987.50
	Net savings (NPV)			198,737.50

The present value of the proposed procurement system is positive. It is therefore worthwhile.

1(c) Not-for-profit (NFP) organisations require cash resources when providing their services to the public. They therefore seek to raise as much funding as possible, just as for profit companies seek to maximize their revenue. Maximising net cash income is therefore a key financial objective for NFP organisations as is the case with for profit companies. NFPs seek to raise as much funds as possible in order to achieve their charitable objectives, which are non-financial in nature.

Both profit making companies and NFP organisations are constrained by budgets, since they need to control the use of their limited cash resources. A common key financial objective for NFPs is therefore to spend within their budgets.

An appropriate objective for NFP organisations is value for money (VFM). This means maximising benefits for the lowest possible cost, and is similar to the concept of profit maximisation except that society's interests are being maximized as opposed to profit. Achieving value for money requires the application of economy, effectiveness and efficiency or the three Es. Economy refers to achieving a certain level of outputs with at lowest cost. Efficiency is the relationship between inputs and outputs. Effectiveness is the extent to which organisational goals are achieved.

NFPs have service-related outputs that are difficult to measure in quantitative terms and so they emphasise performance measures linked to minimizing input costs for given levels of outputs. For instance, they minimize waste or cut back on any activities that do not assist in the achievement of organisational goals.

In managing their performance, NFP organisations like for profit companies and can use accounting ratios such as a target return on capital employed, a target level of income per employee, or a target current ratio. The availability of the health care provided by a hospital can be measured by the time that patients have to wait for treatment or for an operation.

SOLUTION TWO

(a) (w1) unrealized profit in inventory

$$\text{Makeup to margin} = 25 / (100 + 25) = 25 / 125$$

$$\text{Profit margin} = 25 / 125 \times 40 = k8$$

$$\text{Unrealized profit} = \frac{1}{4} \times k8 = k2m$$

(w2) non-controlling interest (NCI)

$$\text{NCI share of subsidiary's profit after tax} = 30\% \times 26 = k7.8m$$

Lexus PLC consolidated financial statement for the year ended 31/12/2014

	KM
Revenue (700 + 300 – 40)	960
Cost of sales and expenses (320 +235-40+2) w1	(517)
Gross profit	443
Administration expenses distributed cost (140 + 90)	(230)
Operating profit	213
Taxation (84 + 62)	(146)
Profit after taxation	67
Amount attributable to parent (balancing figure)	59.2
Non-controlling interest (w2)	7.8

(b)

(i) CONSERVATIVE POLICY

This policy aims to reduce the risk of system breakdown by holding high levels of working capital. Customers are allowed generous credit terms to stimulate demand, finished goods inventory are high and raw materials and work in progress are high to minimize the risk of running out of inventory. Suppliers are paid promptly.

(ii) AGGRESSIVE POLICY

Aims to reduce working capital financing costs and increase profitability by cutting inventories, speeding up collection from customers and delaying payment to suppliers.

(iii) MODERATE POLICY

This is a policy of maturity matching where long term funds finance permanent assets while short term funds finance non-permanent assets

DISADVANTAGES OF AGGRESSIVE APPROACH

- i) Risk of stock outs is high leading to loss of profits
- ii) Loss of goodwill from customers

DISADVANTAGES OF THE CONSERVATIVE APPROACH

- i) Cash flow problems may arise
- ii) Cost of capital tied up in inventory.

SOLUTION THREE

(a) The gearing ratio can be calculated using the following expression:

Gearing = Prior charge capital/equity

(i) Using book values, prior charge capital includes:

	Book value (K'000)
9% loan notes	8,000
7% preference shares	1,000
	9,000
Equity:	
Ordinary share capital	2,000
Share premium account	1,100
Retained earnings	6,550
	9,650

Gearing = $9,000/[9,650] = 93.3\%$

(ii) Using market values, prior charge capital includes:

	Market value (K'000)
9% loan notes @ K800 per K1,000	6,400
7% preference shares @ K770 per K1,000	770
	7,170

Equity:

Ordinary shares @ K2.16 per K0.40 nominal value = K10,800

Gearing = $[7170/10,800] = \underline{66.4\%}$

3(b)

Cost of equity (ke)

$$k_e = D_0(1+g)/P_0 + g = [20 (1+0.10)/216] + 0.10 = \underline{20.2\%}$$

Cost of preference shares (kpref)

This can be found by dividing the preference dividend rate by the market price of the shares: $k_{pref} = 70/770 = \underline{9.1\%}$

Although preference shares are included with prior charge capital, the dividend is not allowable for tax, and therefore no adjustment needs to be made for this.

Cost of loan notes (kdnet)

$$k_d = k_d = i(1 - T)/P_0 = 90(1 - 0.35)/800 = \underline{7.3\%}$$

The WACC can now be calculated:

$$WACC = [(20.2 \times 10,800) + (9.1 \times 770) + (7.3 \times 6,400)] / 17,970 = \underline{15.13\%}$$

3(c)

The weighted average cost of capital (WACC) can be used as a discount rate in investment appraisal provided that the risks of the investment project being evaluated are similar to the current risks of the investing company. The WACC would then reflect these risks and represent the average return required as compensation for these risks.

There are two elements of risk to consider. The first is that the business risk of the proposed investment must be similar to the business risk of existing operations. Essentially this means that WACC can only be used to evaluate an expansion of existing business. If the business risk of the investment project is different from the business risk of existing operations, a project specific discount rate that reflects the business risk of the investment project should be considered. The capital asset pricing model (CAPM) can be used to derive such a project-specific discount rate.

The second element of risk is that the financial risk of the proposed investment is similar to the financial risk of existing operations. This means that financing for the project should be raised in proportions that broadly preserve the capital structure of the investing company. Where this is not the case, the CAPM-derived project-specific cost of capital can be adjusted to reflect the financial risk of the project financing.

A third constraint on using WACC in investment appraisal is that the proposed investment should be small in comparison with the size of the company. If this were not the case, the scale of the investment project could cause a change to occur in the perceived risk of the investing company, making the existing WACC an inappropriate discount rate.

3(d)

- i) LBS has purchased 4,000 of the 10,000 voting A shares and all the non-voting shares numbering 10,000 in total. The voting shares will determine its influence in Glenn Holdings. LBS has 40% of the voting shares. This is less than the minimum of 50% that is necessary to guarantee it controls Glenn Holdings. It will probably not control the company and should therefore not account for it as a subsidiary. However, it will probably have significant influence, since it has a shareholding that is greater than 20% although it is less than 50%. The investment should be accounted for as an **associate**.
- ii) LBS has purchased 6,000 of the 10,000 voting A shares but no non-voting B shares. Given 60% (6,000/10,000) of the voting shares LBS should control Glenn Holdings and should therefore account for it as a **subsidiary**.

SOLUTION FOUR

a) Cost of Current ordering policy

Order size = 15% x 200,000 units = 30,000 units per order
Number of orders = 200,000/30,000 = 6.7 or 7 orders
Annual ordering cost = K700 x 7 = K4,900
Holding costs without buffer stock = 30,000/2 x K30 = K450,000
Total cost of current policy = K4,900 + K450,000 = K454,900

b) Cost of ordering policy using EOQ

EOQ = $\sqrt{(2 \times 700 \times 200,000 / 30)} = 3,055$ units per order
Number of orders per year = 200,000/3,055 = 9.8 Or 10 orders
Annual ordering cost = 10 x K700 = K7000
Holding cost without buffer stock = K30 x 3,055/2 = K45,825
Total cost using EOQ = K52,825

Change in ordering costs = K454,900 – K52,825 = K402,075

There would be a huge decrease in costs and therefore the EOQ should be used to determine the order size of MM2.

c)	1	rights <u>issue@K3.5</u>	=	3.5
	<u>3</u>	ordinary shares @ K5	=	<u>15</u>
	<u>4</u>			<u>18.5</u>

TERP = 18.5/4 = K4.6 per share

Value per rights new share (K4.6 – K3.5) = K1.1 per share

Assessment of excising all the rights:

		K'm
Market value of shares (3+ 1) x K4.625	=	<u>18.5</u>
Total value of shares cum rights (3 x 5)	=	15
Additional investment (1 x 3.5)	=	<u>3.5</u>
		<u>18.5</u>

The investment in the company by shareholders has neither gained nor lost their wealth and shareholders will maintain their percentage holdings in the company.

d) Obtaining credit from suppliers is a normal feature of business and it is a source of short-term finance because it helps to keep working capital down. IBZ proposed increase in payable period would result into access to cheap source of finance, since suppliers rarely charge interest.

However, extension of the credit period would result into loss of suppliers' goodwill because they too want cash within the shortest period of time in order to meet their working capital needs. This might also damage the good relations, especially with regular and important suppliers. Further, IBZ might loss any available cash discount from its suppliers for the early payment of debts.

END OF SOLUTIONS