Fundamentals Level – Skills Module

Financial Management

September/December 2015

Paper F9

Time allowed

Reading and planning: 15 minutes
Writing: 3 hours

This question paper is divided into two sections:

Section A – ALL 20 questions are compulsory and MUST be attempted

Section B – ALL FIVE questions are compulsory and MUST be attempted

Formulae Sheet, Present Value and Annuity Tables are on pages 6, 7 and 8.

Do NOT open this question paper until instructed by the supervisor.

During reading and planning time only the question paper may be annotated. You must NOT write in your answer booklet until instructed by the supervisor.

Do NOT record any of your answers on the question paper.

This question paper must not be removed from the examination hall.

ACCA

The Association of Chartered Certified Accountants

Section B – ALL FIVE questions are compulsory and MUST be attempted

Please write your answers to all parts of these question on the lined pages within the Candidate Answer Booklet.

1 Gemlo Co is a company listed on a large stock market. Extracts from its current statement of financial position are as follows:

	$m	$m
Equity		
Ordinary shares ($1 nominal)	15	
Reserves	153	
		168
Non-current liabilities		
6% Irredeemable loan notes	10	
7% Loan notes	12	
		22
		190

Gemlo Co is planning an expansion of existing business operations costing $10 million in the near future and is assessing its current financial position as part of preparing a business case in support of seeking new finance. The business expansion is expected to increase the profit before interest and tax of Gemlo Co by 20% in the first year.

The planned business expansion by Gemlo Co has already been announced to the stock market. Information on the expected increase in profit before interest and tax has not yet been announced and the company has not decided on how the expansion is to be financed.

The ordinary shares of the company are currently trading at $3·75 per share on an ex dividend basis. The irredeemable loan notes have a cost of debt of 7%. The 7% loan notes have a cost of debt of 6% and will be redeemed at a 5% premium to nominal value after seven years. The interest cover of Gemlo Co is 6 times.

Companies operating in the same business sector as Gemlo Co have an average debt/equity ratio of 40% on a market value basis and an average interest cover of 9 times.

Required:

(a) Calculate the debt/equity ratio of Gemlo Co based on market values and comment on your findings.

(4 marks)

(b) Gemlo Co agrees with a bank that its business expansion will be financed by a new issue of 8% loan notes. The company then announces to the stock market both this financing decision and the expected increase in profit before interest and tax arising from the business expansion.

Required:

Assuming the stock market is semi-strong form efficient, analyse and discuss the effect of the financing and profitability announcement on the financial risk and share price of Gemlo Co.

Note: Up to 2 marks for relevant calculations. (6 marks)

(10 marks)

2 GXJ Co, whose home currency is the dollar, wishes to borrow €12 million for a period of six months in three months' time. The lending bank will fix the interest rate for the loan period at its prevailing lending interest rate when the loan is taken out. The finance director of GXJ Co believes this lending interest rate could be a minimum of 3·5% per year or a maximum of 5·5% per year. The uncertainty regarding the future interest rate is caused by the volatile state of the economy and impending elections which could lead to a change in political leadership and direction. Interest on the euro loan would be payable at the end of the loan period.

The finance director of GXJ Co would like to hedge the interest rate risk arising from the future loan and the company's bank has offered a 3–9, 4·5%–3·5% forward rate agreement.

The finance director is also concerned about the foreign currency risk associated with the euro interest payment which would be due in nine months' time.

The following exchange rates are available:

Spot rate (euro per $1)	1·7964–1·8306
Nine-month forward rate (euro per $1)	1·7191–1·7505

Required:

(a) Evaluate the proposed forward rate agreement as a way of managing the interest rate risk anticipated by GXJ Co. (3 marks)

(b) Analyse the foreign currency risk associated with the future interest payment of GXJ Co and briefly discuss ways that this risk might be hedged. (4 marks)

(c) Explain the nature of four-way equivalence in the relationship between spot exchange rates, forward exchange rates and future (expected) spot rates. (3 marks)

(10 marks)

3 ZXC Co currently has income of $30 million per year, of which 80% is from credit sales, and a net profit margin of 10%. Due to fierce competition, ZXC Co has lost market share and is looking for ways to win back former customers and to keep the loyalty of existing customers. The sales director has pointed out that a major competitor of ZXC Co currently offers an early settlement discount of 0·5% for settlement within 30 days, while ZXC Co itself does not offer an early settlement discount. He suggests that if ZXC Co could match this early settlement discount, annual income from credit sales would increase by 20%.

Credit customers of ZXC Co take an average of 51 days to settle invoices. Approximately 0·5% of the company's credit sales have historically become bad debts each year and written off as irrecoverable. The finance director has been advised that offering an early settlement discount of 0·5% for payment within 30 days would increase administration costs by $35,000 per year, while 75% of credit customers would be likely to take the discount. The credit controller believes that bad debts would fall to 0·375% of credit sales if the early settlement discount were introduced.

ZXC Co has an average short-term cost of finance of 4% per year. Assume that there are 360 days in each year.

Required:

(a) Evaluate whether ZXC Co should introduce the early settlement discount. (6 marks)

(b) Discuss TWO ways in which a company could reduce the risk associated with foreign accounts receivable. (4 marks)

(10 marks)

4 KQK Co wants to raise $20 million in order to expand its business and wishes to evaluate one possibility, which is an issue of 8% loan notes. Extracts from the financial statements of KQK Co are as follows.

	$m
Income	140·0
Cost of sales and other expenses	112·0
Profit before interest and tax	28·0
Finance charges (interest)	2·8
Profit before tax	25·2
Taxation	7·6
Profit after tax	17·6

	$m	$m
Equity finance		
Ordinary shares ($1 nominal)	25·0	
Reserves	118·5	143·5
Non-current liabilities		36·0
Current liabilities		38·3
Total equity and liabilities		217·8

It is expected that investing $20 million in the business will increase income by 5% over the first year. Approximately 40% of cost of sales and other expenses are fixed, the remainder of these costs are variable. Fixed costs will not be affected by the business expansion, while variable costs will increase in line with income.

KQK Co pays corporation tax at a rate of 30%. The company has a policy of paying out 40% of profit after tax as dividends to shareholders.

Current liabilities are expected to increase by 3% by the end of the first year following the business expansion.

Average values of other companies similar to KQK Co:

Debt/equity ratio (book value basis):	30%
Interest cover:	10 times
Operational gearing (contribution/PBIT):	2 times
Return on equity:	15%

Required:

(a) Assess the impact of financing the business expansion by the loan note issue on financial position, financial risk and shareholder wealth after one year, using appropriate measures. (10 marks)

(b) Discuss the circumstances under which the current weighted average cost of capital of a company could be used in investment appraisal and indicate briefly how its limitations as a discount rate could be overcome. (5 marks)

(15 marks)

5 Argnil Co is appraising the purchase of a new machine, costing $1·5 million, to replace an existing machine which is becoming out of date and which has no resale value. The forecast levels of production and sales for the goods produced by the new machine, which has a maximum capacity of 400,000 units per year, are as follows:

Year	1	2	3	4
Sales volume (units/year)	350,000	380,000	400,000	400,000

The new machine will incur fixed annual maintenance costs of $145,000 per year. Variable costs are expected to be $3·00 per unit and selling price is expected to be $5·65 per unit. These costs and selling price estimates are in current price terms and do not take account of general inflation, which is forecast to be 4·7% per year.

It is expected that the new machine will need replacing in four years' time due to advances in technology. The resale value of the new machine is expected to be $200,000 at that time, in future value terms.

The purchase price of the new machine is payable at the start of the first year of the four-year life of the machine. Working capital investment of $150,000 will already exist at the start of the four-year period, due to the operation of the existing machine. This investment in working capital is expected to increase in nominal terms in line with the general rate of inflation.

Argnil Co pays corporation tax one year in arrears at an annual rate of 27% and can claim 25% reducing balance tax-allowable depreciation on the purchase price of the new machine. The company has a real after-tax weighted average cost of capital of 6% and a nominal after-tax weighted average cost of capital of 11%.

Required:

(a) Using a nominal terms net present value approach, evaluate whether purchasing the new machine is financially acceptable. (10 marks)

(b) Discuss the reasons why investment finance may be limited, even when a company has attractive investment opportunities available to it. (5 marks)

(15 marks)

Formulae Sheet

Economic order quantity

$$= \sqrt{\frac{2C_0D}{C_h}}$$

Miller–Orr Model

$$\text{Return point} = \text{Lower limit} + \left(\frac{1}{3} \times \text{spread}\right)$$

$$\text{Spread} = 3\left[\frac{\frac{3}{4} \times \text{transaction cost} \times \text{variance of cash flows}}{\text{interest rate}}\right]^{\frac{1}{3}}$$

The Capital Asset Pricing Model

$$E\left(r_i\right) = R_f + \beta_i\left(E\left(r_m\right) - R_f\right)$$

The asset beta formula

$$\beta_a = \left[\frac{V_e}{\left(V_e + V_d\left(1-T\right)\right)}\beta_e\right] + \left[\frac{V_d\left(1-T\right)}{\left(V_e + V_d\left(1-T\right)\right)}\beta_d\right]$$

The Growth Model

$$P_o = \frac{D_0\left(1+g\right)}{\left(r_e - g\right)}$$

Gordon's growth approximation

$$g = br_e$$

The weighted average cost of capital

$$WACC = \left[\frac{V_e}{V_e + V_d}\right]k_e + \left[\frac{V_d}{V_e + V_d}\right]k_d\left(1-T\right)$$

The Fisher formula

$$\left(1+i\right) = \left(1+r\right)\left(1+h\right)$$

Purchasing power parity and interest rate parity

$$S_1 = S_0 \times \frac{\left(1+h_c\right)}{\left(1+h_b\right)} \qquad F_0 = S_0 \times \frac{\left(1+i_c\right)}{\left(1+i_b\right)}$$

Present Value Table

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

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

Discount rate (r)

Periods (n)	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

[P.T.O.

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

Discount rate (r)

Periods (n)	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	10·368	9·787	9·253	8·760	8·306	7·887	7·499	7·139	6·805	6·495	11
12	11·255	10·575	9·954	9·385	8·863	8·384	7·943	7·536	7·161	6·814	12
13	12·134	11·348	10·635	9·986	9·394	8·853	8·358	7·904	7·487	7·103	13
14	13·004	12·106	11·296	10·563	9·899	9·295	8·745	8·244	7·786	7·367	14
15	13·865	12·849	11·938	11·118	10·380	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

End of Question Paper