Financial Management

March/June 2018 – Sample Questions

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F9 ACCA

Paper F9

Time allowed: 3 hours 15 minutes

This question paper is divided into three sections:

Section A – ALL 15 questions are compulsory and MUST be attempted

Section B – ALL 15 questions are compulsory and MUST be attempted

Section C – BOTH questions are compulsory and MUST be attempted

Formulae Sheet, Present Value and Annuity Tables are on pages 4–6.

Do NOT open this question paper 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.

Think Ahead ACCA

The Association of Chartered Certified Accountants

Section C – BOTH questions are compulsory and MUST be attempted

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

31 Tin Co is planning an expansion of its business operations which will increase profit before interest and tax by 20%. The company is considering whether to use equity or debt finance to raise the $2m needed by the business expansion.

If equity finance is used, a 1 for 5 rights issue will be offered to existing shareholders at a 20% discount to the current ex dividend share price of $5·00 per share. The nominal value of the ordinary shares is $1·00 per share.

If debt finance is used, Tin Co will issue 20,000 8% loan notes with a nominal value of $100 per loan note.

Financial statement information prior to raising new finance:

	$'000
Profit before interest and tax	1,597
Finance costs (interest)	(315)
Taxation	(282)
Profit after tax	1,000

	$'000
Equity	
Ordinary shares	2,500
Retained earnings	5,488
Long-term liabilities: 7% loan notes	4,500
Total equity and long-term liabilities	12,488

The current price/earnings ratio of Tin Co is 12·5 times. Corporation tax is payable at a rate of 22%.

Companies undertaking the same business as Tin Co have an average debt/equity ratio (book value of debt divided by book value of equity) of 60·5% and an average interest cover of 9 times.

Required:

(a) (i) Calculate the theoretical ex rights price per share. (2 marks)

(ii) Assuming equity finance is used, calculate the revised earnings per share after the business expansion. (4 marks)

(iii) Assuming debt finance is used, calculate the revised earnings per share after the business expansion. (3 marks)

(iv) Calculate the revised share prices under both financing methods after the business expansion. (1 mark)

(v) Use calculations to evaluate whether equity finance or debt finance should be used for the planned business expansion. (4 marks)

(b) Discuss TWO Islamic finance sources which Tin Co could consider as alternatives to a rights issue or a loan note issue. (6 marks)

(20 marks)

32 Copper Co is concerned about the risk associated with a proposed investment and is looking for ways to incorporate risk into its investment appraisal process. The company has heard that probability analysis may be useful in this respect and so the following information relating to the proposed investment has been prepared:

Year 1		Year 2	
Cash flow ($)	Probability	Cash flow ($)	Probability
1,000,000	0·1	2,000,000	0·3
2,000,000	0·5	3,000,000	0·6
3,000,000	0·4	5,000,000	0·1

However, the company is not sure how to interpret the results of an investment appraisal based on probability analysis.

The proposed investment will cost $3·5m, payable in full at the start of the first year of operation. Copper Co uses a discount rate of 12% in investment appraisal.

Required:

(a) Using a joint probability table:

    (i) Calculate the mean (expected) NPV of the proposed investment; (8 marks)

    (ii) Calculate the probability of the investment having a negative NPV; (1 mark)

    (iii) Calculate the NPV of the most likely outcome; (1 mark)

    (iv) Comment on the financial acceptability of the proposed investment. (2 marks)

(b) Discuss TWO of the following methods of adjusting for risk and uncertainty in investment appraisal:

    (i) Simulation;
    (ii) Adjusted payback;
    (iii) Risk-adjusted discount rates. (8 marks)

(20 marks)

Formulae Sheet

Economic order quantity

$$= \sqrt{\frac{2C_0 D}{C_h}}$$

Miller–Orr Model

Return point $=$ 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

$$P_0 = \frac{D_0\left(1 + g\right)}{\left(r_e - g\right)} \qquad r_e = \frac{D_0\left(1 + g\right)}{P_0} + g$$

Gordon's growth approximation

$$g = br_e$$

The weighted average cost of capital

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

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. $\dfrac{1-(1+r)^{-n}}{r}$

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