



Singapore CA Qualification (Foundation) Examination

6 December 2021

Financial Management

INSTRUCTIONS TO CANDIDATES:

1. The time allowed for this examination paper is **3 hours 15 minutes**.
2. This examination paper has **FOUR (4)** questions and comprises **TWENTY-ONE (21)** pages (including this instruction sheet, Appendix A and Appendix B). Each question may have **MULTIPLE** parts and **ALL** questions are examinable.
3. This is a restricted open book examination. You are allowed to have only the following materials with you at your exam location:
 - One A4-sized double-sided cheat sheet
 - One A4-sized double-sided blank scratch paper
4. During the examination, you are allowed to use your laptop and any calculators that comply with the SAC's regulations. Please note that watches, mobile phones, tablets, and all other electronic devices **MUST NOT** be used during the examination.
5. During the examination, videos of you and your computer screen will be recorded for the purpose of ensuring examination integrity and you have consented to these recordings.
6. This examination paper and all video recordings of this exam are the property of the Singapore Accountancy Commission.

MODULE-SPECIFIC INSTRUCTIONS:

7. Assume that all dollar amounts are in Singapore dollar (S\$) unless otherwise stated.

IMPORTANT NOTICE:

If you are not feeling well, please do not press "Start Assessment". If you have started and leave during the exam, you would be deemed to have attempted the paper.

****VERY IMPORTANT NOTICE****

1. Your question paper is attached under the "**Resource**" tab found at the bottom right of **EACH** question.

Other important information:

2. You will **only be allowed** to access the Excel function from your computer.
3. You are **NOT ALLOWED** to access any websites or reference materials (except for your A4 sized double sided cheat sheet) during the exam.
4. You are **NOT ALLOWED** to print the question paper.
5. **Please take note that your screen will be monitored throughout the examination. If you are found to have accessed unauthorised materials or websites, or if you cheat or attempt to cheat, you will be liable to severe disciplinary action.**

Should you encounter any issues during the exam, please call the following number:

+65 6100 0516

6. **You do not need to fill in an answer for this question.**

Question 1 – (a), (b) and (c)

Stuckfast Glues (SFG) is a listed company in Singapore that manufactures a wide range of adhesive products.

An extract from its latest financial statements is shown below:

	31.12.x5 \$'000
Non-current assets	25,500
Current assets	5,123
Current liabilities	<u>(3,826)</u>
	<u>26,797</u>
Share capital (\$0.50 nominal value)	5,000
Retained earnings	<u>13,780</u>
	18,780
8% Loan notes	<u>8,017</u>
	<u>26,797</u>

The shares are currently trading at a price of \$3.50 per share, cum dividend. This reflects the recent dividend announcement of \$0.30 share to be paid shortly. Profits after interest and tax were \$4m for the year ending 31.12.x5. Retained profits are reinvested to earn the current return on capital employed going forwards.

The 8% loan notes are being traded at \$104 per \$100 nominal ex interest. They are redeemable (i.e. repayable) in 4 years' time at a premium of 10%, or each note is convertible into 25 ordinary shares at the investors' option.

Included in current liabilities is an overdraft of \$2.5m, attracting interest charges of 10% per annum. This is repayable on demand, but the overdraft has been used over many years and is predicted to continue. The size of the overdraft varies – it fluctuates between \$2m and \$3m dollars. The \$2m is therefore considered to be a source of finance into the longer term.

Possible restructuring

SFG are considering a 1 for 5 rights issues at a 20% discount to market price to repurchase and cancel loan notes. If this were to go ahead, changes in gearing levels are not expected to have an impact on the cost of equity.

SFG pays corporation tax at 17%.

**e-Exam
Question
Number**

Question 1 required:

2

- (a)** Calculate, before the rights issue is announced:
- (i)** The cost and market value of equity capital
(5 marks)
 - (ii)** The cost and market value of the loan notes
(8 marks)
 - (iii)** The cost and value of the overdraft for inclusion in the Weighted Average Cost of Capital
(1 mark)
 - (iv)** The Weighted Average Cost of Capital
(3 marks)

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- (b)** Calculate the effect on share price and gearing of SFG of using the rights issue to reduce debt in this way. Note: Gearing should be calculated as $(\text{Long-term Debt} / (\text{Long-term Debt} + \text{Equity}))$ using market values.
(4 marks)

4

- (c)** Discuss the likely impact of the restructuring on the Cost of Equity and the Weighted Average Cost of Capital.
(4 marks)

(Total: 25 marks)

Question 2 – (a), (b) and (c)

Ecochomp Limited (ECL) produce environmentally friendly oral hygiene products. They are considering launching the ‘Sunscrubber’ toothbrush which is electric and recharges by simply being placed on a windowsill when not being used.

The Sunscrubber will be manufactured in Singapore, and initially exported into the American market for the first 4 years of the product’s life. After that it will be sold globally, denominated in S\$.

Research predicts sales demand for the first 4 years to be as follows:

Number of units	Year 1	Year 2	Year 3	Year 4
Low uptake: probability 25%	5,000	15,000	15,000	10,000
High uptake: probability 75%	10,000	20,000	20,000	15,000

Prices stated as at 1 January 20x3 will be US\$100 for year 1, falling to US\$80 for years 2, 3 and 4. All these prices will be adjusted for sector inflation, which is forecasted to be 2.5% per year.

After the initial 4-year period, global sales are expected to be 25,000 per year indefinitely, for a nominal price of S\$100 each.

Material costs are estimated to be S\$30 per unit as at 1 January 20x3 prices. Material costs are expected to increase by 10% per year for the first 4 years and stabilise after that.

Other variable costs are estimated to be S\$35 per unit for the first year, increasing by 5% per year after that for the following 3 years before stabilising. Nominal fixed costs are expected to be S\$150,000 per year.

Working capital of 10% of revenues will need to be in place at the start of each year.

Initial investment will be S\$3,000,000 in manufacturing equipment on 1 January 20x3.

Capital allowances can be claimed in equal amounts over three years. Corporation tax is 17% on operating cashflows, payable in the same year as the underlying cashflows.

You may ignore American tax implications – American revenues are taxed in Singapore.

The exchange rate on 1 January 20x3 is US\$0.75 per S\$1. Interest rates are forecasted to be 0.25% per year in the USA and 5% per year in Singapore.

ECL has a real cost of capital of 7.843%.

Singapore general inflation is forecasted to be 2%.

**e-Exam
Question
Number**

Question 2 required:

- 5** **(a)** Using Interest Rate Parity, estimate the US\$:S\$ exchange rates for 31 December 20x3, 20x4, 20x5 and 20x6. Present your answer to 4 decimal places.
- (2 marks)**
- 6** **(b)** Calculate the Singapore dollar equivalent values of the US revenues for 20x3 to 20x6 relating to the Sunscrubber product.
- (7 marks)**
- 7** **(c)** Calculate the Net Present Value of the Sunscrubber product and conclude whether, based on this calculation, the investment should proceed.
- (16 marks)**
- (Total: 25 marks)**

Question 3 – (a), (b), (c) and (d)

Orchard Road Textiles Ltd (ORT) sources and retails exotic fabrics for sale in Singapore and internationally. The Finance Director is seeking to improve working capital management. The company offers 40 days credit, although most customers take longer, and 1% never pay. ORT has credit sales of \$13,375,000 a year. Trade receivables currently stand at \$2,229,000.

ORT is considering the use of a debt factoring company to improve the management of their receivables. A debt factor typically offers a combination of services, including:

- They can lend money to the company
- They can administer the collection of funds from the company's customers
- They can provide insurance against bad debts (known as 'without recourse'). If this aspect of the service is not provided, this is known as a 'with recourse' basis.

The Finance Director has found a debt factoring company that has offered to manage ORT's receivables on a with-recourse basis. Improved collection procedures should reduce receivables days to 35, reduce bad debts by 70%, and save \$25,000 in administration costs per year.

The factor would also advance 80% of receivables at a cost of 7% per year and charge an annual fee of 0.75% of sales.

ORT's short-term finance costs 5% per year. Assume 365 days a year.

**e-Exam
Question
Number**

Question 3 required:

- 8** **(a)(i)** Calculate the reduction in receivables that will result from ORT using the services of the debt factor, and the finance cost that this reduction in receivables will create.
(3 marks)
- 9** **(a)(ii)** Calculate the total expected net cost or benefit to ORT of using the debt factor and advise based on this whether or not to proceed.
(5 marks)
- 10** **(b)** Briefly discuss FOUR methods ORT could use to manage credit risk from local or overseas customers.
(8 marks)

ORT is planning to set up an office in the USA due to significant growth in demand from North America. The office will initially be loss making while sales continue to grow but is considered to be a long-term investment by ORT. It is anticipated that the office will need \$500,000 finance per annum, evenly over the year. Head office intends to provide this finance by periodically selling investments held. The investments currently earn an average return of 5% per annum and each transaction to sell investments incurs a fixed fee of \$100. Any spare cash would earn 1% per annum in a short-notice savings account.

**e-Exam
Question
Number**

Question 3 required:

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- (c)** Using the Baumol model, calculate the dollar amount of investments that should be sold each time, and how often transfers would be needed.

(3 marks)

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- (d)** Discuss THREE issues with using Baumol model in this case.

(6 marks)

(Total: 25 marks)

Question 4 – (a), (b) and (c)

Funslumber Ltd (FSL) sells beds and bedroom furniture. It delivers all beds itself locally and uses a large van to do this. The Financial Controller at FSL is trying to decide how often to replace the company delivery van. They cost \$75,000 brand new, and the trade in value declines as the van gets older as follows:

Age (years)	1	2	3
Trade in value (\$)	55,000	40,000	30,000

Running costs in the first year will be \$6,000, increasing by 40% year-on-year.

Servicing and maintenance costs are expected to be \$3,000 in the first year, increasing by 15% year-on-year.

FSL has a cost of capital of 10%. Ignore taxation.

**e-Exam
Question
Number**

Question 4 required:

- 13** **(a)** Using the equivalent annual cost method, calculate and recommend whether FSL should replace its delivery van every 1, 2 or 3 years. **(14 marks)**
- 14** **(b)** Discuss THREE non-financial considerations that should also be considered before a final decision is made on how frequently to replace the van. **(6 marks)**

The Board of Directors at FSL have identified 4 potential new projects to invest in. Investment appraisals have been performed for each as follows:

Project	A	B	C	D
Investment (\$'000)	500	1,000	750	2,000
NPV (\$'000)	50	90	(80)	150

Funding is limited to \$2m at the point capital investment would be required. Projects can only be invested in once.

**e-Exam
Question
Number**

15

Question 4 required:

(c) Assuming the projects are divisible, calculate the profit maximising investment plan.

(5 marks)

(Total: 25 marks)

END OF PAPER

Appendix A – Formulae and Present Value Tables

Financial ratios

Current ratio	= Current assets / Current liabilities
Net working capital	= Current assets - Current liabilities
Return on total assets	= Net income / Average total assets
Return on equity	= Net income / Average shareholders' equity
Receivables days	= (Accounts receivable balance / annual credit sales) x 365
Receivables turnover	= (Annual credit sales/ Accounts receivable balance) to give 'times a year'
Payables days	= (Accounts payable balance / annual purchases or cost of sales) x 365
Payables turnover	= (Annual purchases or cost of sales/ Accounts payable balance) to give 'times a year'
Inventory days	= (Inventory balance / cost of sales) x 365
Inventory turnover	= (Cost of sales / inventory balance) to give 'times a year'

Dividend growth model

$$K_e = [D_0(1+g) / P_0] + g$$

Where:

K_e = the cost of equity

D_0 = the current dividend per share

g = future anticipated annual growth rate in dividends per share

P_0 = the current ex-div share price

g can be estimated as

$$(D_r / D_e)^{(1/n)} - 1$$

Where:

D_r = the latest dividend in a historical pattern

D_e – the earliest dividend in a historical pattern

n = the number of years between the earliest and the latest dividend in a sequence of historical dividends.

Or $g = b \times r$

Where:

b = the proportion of earnings held back

r = the return on reinvested earnings

Capital Asset Pricing Model ('CAPM'):

$$K_e = R_f + \beta(R_m - R_f)$$

K_e = the cost of equity

R_f = The risk-free rate of return

R_m = the return on a market portfolio

β = the systematic risk factor

Valuations

Weighted Average Cost of Capital (WACC)

$$\text{WACC\%} = [(V_e / (V_e + V_d)) \times K_e] + [(V_d / (V_e + V_d)) \times K_d]$$

Where:

V_e = The market value of all ordinary shares

V_d = The market value of debt

K_e = Cost of Equity

K_d = After-tax Cost of Debt

Constant Growth Dividend discount model

$$P_0 = D_0 (1+g) / (K_e - g)$$

Where:

K_e = the cost of equity

D_0 = the current dividend per share

g = future anticipated annual growth rate in dividends per share

P_0 = the current ex-div share value of one share

Price-Earnings (P/E) model (EPS)

$$P_0 = P/E \times \text{EPS}$$

Where:

P_0 = value of 1 ordinary share

P/E = an applicable price/earnings ratio (calculated as price per share / earnings per share)

EPS = earnings per share (being earnings available for distribution to ordinary shareholders / number of ordinary shares)

Present value of an annuity

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

Where:

r = discount rate

n = number of periods

Present value

$$PV = FV_n / (1 + i)^n$$

Where:

PV = Present Value

FV_n = Future value at end of period n

i = Interest rate per period

n = Number of periods

Internal Rate of Return

$$\text{IRR is approximately } A + \frac{(B-A)N_A}{(N_A - N_B)}$$

Where:

A = The lower discount rate chosen

B = The higher discount rate chosen

N_A = The net present value calculated at A%

N_B = The net present value calculated at B%

Real/nominal discount rate

$$(1+m) = (1+r)(1+i)$$

Where:

m = The money / nominal rate of return

r = The real rate of return

i = General inflation

Interest rate parity

$$S_1 = S_0 \times (1+r_a) / (1+r_b)$$

Where:

r_a = Annual interest rate in country a

r_b = Annual interest rate in country b

S_1 = Exchange rate today in terms of 'a\$' per '1b\$'

S_0 = Exchange rate today in terms of 'a\$' per '1b\$'

The Baumol model of cash management:

$$Q = \sqrt{\frac{2C_oD}{C_H}}$$

Where:

Q = The value of securities to sell each time

C_o = The fixed costs associated with selling a parcel of securities

D = The annual demand for cash

C_H = The annual interest rate, as a decimal. Associated with holding cash as opposed to investments

Present value interest factor of an (ordinary) annuity of \$1 per period at i% for n periods, PVIFA(i,n).										
Period	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	15.678	14.324	13.134	12.085	11.158	10.336	9.604	8.950	8.365
20	18.046	16.351	14.877	13.590	12.462	11.470	10.594	9.818	9.129	8.514

Period	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	4.793	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

Present value interest factor of \$1 per period at i% for n periods, PVIF(i,n).										
Period	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

Period	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	0.074	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

Appendix B – Common verbs used by the Examiners

Verb	Description
Advise / Give advice	This type of question requires you to give specific guidance to an individual or a group (e.g. a taxpayer, audit client, management, etc.), so your answer must provide specific information or make a recommendation tailored to the individual or group and justify your position.
Calculate / Compute	Do the number crunching and derive the correct answer. Make sure that you write down your workings and crosscheck your numbers.
Conclude / Draw conclusions	Form a judgment, or determine the outcome, or resolve an issue, by using the facts presented. An example might be "Conclude whether to outsource the human resource function".
Discuss	Discuss requires you to provide the 'for' and 'against' arguments, you cannot have a discussion without opposing views otherwise it would be just a conversation. If discuss is placed near the front of the instruction, then it requires you to provide an answer that is similar to explain , but addresses both the for and against arguments.
Estimate	Suggest an approximate value (or range of values) based on the available information. Remember, although estimating involves uncertainty, some answers will be <u>more right</u> (or appropriate) than others.
Justify	Whenever you see the word justify you must provide reasons for your answer, in other words, provide support for your argument or conclusion. If you fail to justify your answer, you will lose valuable marks. Justify is similar to defend.
Recommend	Make a statement about the most appropriate course of action. If there is more than one possible course of action, state which action you would choose and why (justify your choice). Your professional judgment and your ability to interpret the wider situation are critical to scoring well in these types of questions. Don't forget to think about the future and the past, not just the present when making a recommendation .