



## Singapore CA Qualification (Foundation) Examination

11 June 2019

### 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 **SIXTEEN (16)** 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. This means that you are allowed to only bring the following materials into the examination hall:
  - One A4-sized double-sided cheat sheet.
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. This examination paper is the property of the Singapore Accountancy Commission.

#### MODULE-SPECIFIC INSTRUCTIONS:

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

### **Question 1 – (a), (b) and (c)**

Malaysian Gold Limited (MGL) is a mining company, listed and based in Singapore but with significant mining interests in Pahang, Malaysia.

MGL is financed with ordinary shares, preference shares, and a bank loan.

There are \$1,000,000 worth of \$0.25 ordinary shares on the statement of financial position, trading at \$5.25 each. A dividend of \$0.50 has just been paid out of post-tax earnings available for distribution to ordinary shareholders of \$8 million. The net assets of the company are \$40 million.

The 7% preference shares have a nominal value of \$0.50 but are trading currently at \$0.52 each. They are redeemable at par in 5 years' time. There are 6 million preference shares in issue.

The bank loan has a principal amount of \$5,000,000 with an annual interest rate of 5%. It is repayable in full in 7 years' time.

The company pays corporate income tax at a rate of 17%.

The board of directors at MGL is considering investing a significant sum in new mining equipment for a new mine site it is considering acquiring. However, they are unsure exactly how to fund it.

**Exemplify  
Question  
Number**

**Question 1 required:**

- 1**      **(a)** Calculate the Weighted Average Cost of Capital (WACC) of the company. Present your answer to the nearest whole percentage.  
**(13 marks)**
- 2**      **(b)** If MGL is to use the WACC calculated in requirement (a) to appraise the project to purchase the new mine site, what key assumptions must be made?  
**(4 marks)**
- 3**      **(c)** Discuss FOUR advantages and FOUR disadvantages of leasing as opposed to buying the new mining equipment.  
**(8 marks)**  
**(Total: 25 marks)**

## Question 2 – (a) and (b)

Today is 1<sup>st</sup> January 20x5. Singapore Essential Oils Pte Ltd (SEO) manufactures and sells liquids for use in aromatherapy diffusers. The accountant of SEO is planning his working capital requirements for the coming quarter.

Sales for the last 3 months of 20x4 were as follows:

	<b>Litres</b>
October	1,000
November	750
December	2,100

Forecast sales for the first 4 months of 20x5 are as follows:

	<b>Litres</b>
January	400
February	800
March	700
April	1,000

Sales are made to wholesale customers with standard credit terms of 1 month. 30% pay in cash to receive a 5% discount, 50% pay in 30 days, 18% pay after 2 months and the remainder are unfortunately bad debts. A litre sells for \$100.

The input materials cost \$30 per litre to buy. The manufacturing process causes 20% of the input materials to evaporate. The supplier grants 60 days credit to SEO, which SEO takes in full. SEO has a policy of having sufficient closing inventory in any one month to satisfy half of the following month's production volumes.

Labour is paid \$2,500 a month per worker for 11 workers. Overheads amount to \$15,000 a month including \$3,000 of depreciation expenses.

There are plans to pay a dividend of \$50,000 in February. In addition, there are plans to expand production that will involve purchasing a new oil boiler in March for \$65,000. The cash balance on 1 January 20x5 is \$30,000.

**Exemplify  
Question  
Number**

**Question 2 required:**

**4**

- (a)** Forecast cash flows and cash balance for each of the 3 months from January 20x5 to March 20x5.

*Present your answers using the following suggested format:*

For Cash flow forecast

**<Year>**

Name of Item 1 = (Workings) = **\$ Answer**

Name of Item 2 = (Workings & Workings) = **\$ Answer**

**Subtotal = \$ Answer**

**Net Cash Flow = \$ Answer**

**Ending Cash Balance = \$ Answer**

**(19 marks)**

**5**

- (b)** Discuss TWO possible courses of action in light of the forecasted cash balances calculated in requirement (a) and recommend, with justification, which one SEO should adopt.

**(6 marks)**

**(Total: 25 marks)**

### Question 3 – (a) and (b)

Today is 1<sup>st</sup> January 20x5. Ryan Spinnaker runs several marine business interests as part of his family business. Speedboat Adrenaline Rush Pte Ltd (SAR) is a new business venture to provide speedboat rides for tourists in Singapore from The HarbourFront Centre out into the Straits of Singapore.

The initial cost of a speedboat would be \$860,000 with an expected useful life of three years, after which the boat would be sold for \$70,000 cash on 31 December 20x7. As premises and moorings would need to be rented for a 3-year term, the investment would be a three-year commitment. Ryan is unsure about the expected demand across the 3 years. But given his experience, he thinks that there is a 30% chance that demand will be 'high', 45% chance that demand will be 'medium', otherwise demand will be low. You may assume if, for example, demand is anticipated to be 'high', this means that demand is anticipated to be high across all 3 years.

If demand is 'high', sales in the first year are estimated to be 50,000 trips. If demand is 'medium', sales in the first year will be 30,000 trips, and if demand is 'low', sales in the first year are expected to be 20,000 trips.

Prices for the rides in the first year are expected to be \$50 per trip and will increase by 5% per year. Sales volumes are expected to increase by 10% per annum.

The contribution margin is expected to be 70%, with fixed costs of \$1,000,000 for the first year. These fixed costs are expected to be subject to 4% inflation.

SAR would be subjected to income tax at a rate of 17% per year. The boat would be eligible for capital allowances being a third of the initial cost per year. A capital allowance is not given in the year of disposal, instead a balance allowance or charge is allowed or levied upon disposal of the asset.

SAR has an estimated weighted average cost of capital of 10%.

**Exemplify  
Question  
Number**

**Question 3 required:**

**6**

- (a)(i)** Calculate the pre-tax contribution in dollars for each of the 3 years under the 3 different demand conditions.

*Present your answers using the following format, showing all workings:*

**<High/Medium/Low> Demand**

**<Year> = Answer**

**<Year> = Answer**

**<Year> = Answer**

**(9 marks)**

**7**

- (a)(ii)** Calculate the Net Present Value of the project based on the expected sales. Conclude on whether SAR should proceed with the project based on your calculations.

*Present your answers using the following format:*

**<Year>**

**Working 1 = \$ Answer**

**Working 2 = \$ Answer**

**Present value = \$ Answer**

**Total NPV of the project = \$ Answer**

**(11 Marks)**

**Exemplify  
Question  
Number**

**Question 3 required:**

On further discussions between Ryan and the speedboat supplier, it was agreed that the purchase agreement for the speedboat will include an option to sell the business to the speedboat supplier at the end of year 1 for \$400,000 after taxes.

**8**

**(b)** Assess the impact on the Net Present Value of the project with the option to sell the business at the end of year 1. You should support your answer with appropriate calculations. To do this you should:

- consider the Net Present Value of selling the business to the value of that business if it is not sold under the different demand conditions.

*Present your answers using the following format:*

**<High/Medium/Low> Demand**

**<Year>**

**Working 1 = \$ Answer**

**Working 2 = \$ Answer**

**Present value = \$ Answer**

**Total NPV of the project = \$ Answer**

**(15 marks)**

**(Total: 35 marks)**



#### **Question 4 – (a), (b) and (c)**

Smiling Toes Ltd (STL) is a listed shoe manufacturer. Its main expense is the purchase of leather, which it obtains from an Italian supplier, paying monthly in euros after 60 days credit is taken.

STL is substantially financed by a long-term bank loan, paying a variable rate of interest. Interest rates have been low for well over a decade but are showing signs of increasing. The Board is considering managing this risk with interest rate options or swaps.

Historically, STL has no hedging policy and has not undertaken any hedging. But given recent foreign exchange volatility and the pending rise in interest rates, STL is considering a formal policy.

The board of directors is divided on the issue. The Marketing Director feels that risk should be eliminated wherever possible given the conservative nature of the business. However, the Finance Director disagrees – “We do not make any money without taking risks. We should not be paying expensive transaction fees to banks to take away the very thing that will make us profit!”

**Exemplify  
Question  
Number**

**Question 4 required:**

- 9**                      **(a)**    Recommend with justification whether the payments to the leather supplier would be better hedged using foreign exchange forwards or futures contracts.  
**(5 marks)**
- 10**                     **(b)**    Recommend with justification whether interest rate risk would be better hedged using interest rate options, or interest rate swaps.  
**(4 marks)**
- 11**                     **(c)**    Identify and discuss the two directors' perspectives on risk, and how this is likely to affect the hedging policy being discussed.  
**(6 marks)**  
**(Total: 15 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'

**Yield of an irredeemable preference share** = Dividend per year / market price

**After-tax Cost of a bank loan** =  $I\% (1-t)$

*Where:*

$I\%$  = the annual percentage rate payable on the loan

$t$  = the annual corporate tax rate

### 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

## **Valuations**

### **Weighted Average Cost of Capital (WACC)**

$$\text{WACC\%} = \left[ \frac{V_e}{V_e + V_d} \times K_e \right] + \left[ \frac{V_d}{V_e + V_d} \times K_d \right]$$

*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%

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
<b>Assess</b>	Make a judgment about the value, quality, outcomes, results, or size. Often there will be a qualifier in the instruction, which will tell you exactly what to <b>assess</b> . For instance, “ <b>Assess</b> the <u>adequacy</u> of the disclosures in the financial statements relating to ...”. Professional judgment and scepticism (a questioning mind) are called for when making an <b>assessment</b> . <b>Appraise</b> and <b>Assess</b> are interchangeable.
<b>Calculate</b> / <b>Compute</b>	Do the number crunching and derive the correct answer. Make sure that you write down your workings and crosscheck your numbers.
<b>Conclude</b> / <b>Draw conclusions</b>	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".
<b>Discuss</b>	<b>Discuss</b> 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 <b>discuss</b> is placed near the front of the instruction, then it requires you to provide an answer that is similar to <b>explain</b> , but addresses both the for and against arguments.
<b>Identify</b>	<b>Identify</b> is similar to <b>list</b> , but requires you to also provide an <b>explanation</b> as to why the item/s that you have <b>identified</b> is/are relevant to the facts given in the question.
<b>Recommend</b>	Make a statement about the most appropriate course of action. If there is more than one possible course of action, <b>state</b> which action you would choose and why ( <b>justify</b> your choice). Your professional judgment and your ability to <b>interpret</b> 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 <b>recommendation</b> .