

PP

Chartered  
Accountant  
SINGAPORE

## Singapore CA Qualification Examination

### INTEGRATIVE BUSINESS SOLUTIONS

# Examination Day Documents

6 June 2022

#### INSTRUCTIONS TO CANDIDATES:

1. The time allowed for this examination paper is **4 hours and 30 minutes**. Please note, there is no separate prescribed reading time for this examination.
2. This is an open book examination. 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.
3. 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.

4. This examination paper and all video recordings are the property of the Singapore Accountancy Commission.
5. This is a hypothetical case written exclusively for this examination. Names, characters, places and incidents used are imaginary or fictional. Any resemblance to actual events or locales or persons, living or dead, is entirely coincidental. This case is not to be cited without permission from the Singapore Accountancy Commission.

**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.**

**Case study report instructions**

These Examination Day Documents (EDD) complete the case study scenario and set out the requirements of the report that you are required to write (**Exhibit 17**). You must combine your pre-reading and analysis of the Advance Information (AI), your other pre-examination research, and the new information in the EDD to plan the content and structure of your report, and then to write the report.

## Report format

Your report should follow the following format:

Requirement	eExam Qn. Number	Marks
Requirement 1 – An Executive Summary	2	10
Requirement 2 – Evaluation and strategic options	3, 4, 5	34
Requirement 3 – Business options, financial reporting and tax	6, 7, 8, 9, 10	36
Requirement 4 – Ethics	11, 12	20

You should clearly state any assumptions that you make and include any supporting data. Please put your appendices (if any) at the end of each question part.

Please note that **only your report commentary (including the assumptions made), appendices and workings entered in Cirrus on the day of the examination will be marked.**

## Advance Information (AI) – List of Exhibits

<b>Exhibit</b>	<b>Exhibit Title</b>	<b>Start Page</b>
<b>Advance Information (AI)</b>		
1	Puroco Ltd - Company background and Puroco's wastewater treatment solutions	AI-4
2	Water management in Singapore	AI-6
3	Industry players in the Singapore water industry	AI-11
4	Puroco Ltd - Description of company and its operations	AI-16
5	Puroco Ltd - Management accounts for the three years to 31 December 2020	AI-21
6	Report to the board about the proposed cooperation with Singen	AI-27
7	Article from "The Straits Business Review" about the water industry in Singapore	AI-30
8	Memo from the Klearer II project manager to the finance department relating to Klearer II project costings up to 31 December 2021	AI-32
9	Minutes of Management Committee meeting - March 2022 at which possible cooperation with Singen, and acquisition of EVO is discussed	AI-34
10	Report prepared by a business strategist, providing information about EVO and why it may be a good acquisition target	AI-36
11	Risk register prepared by the Risk Committee	AI-39
12	Suggestions for further research	AI-40

## Exam Day Documents (EDD) – List of Exhibits

Exhibit	Exhibit Title	Start Page
<b>Examination Day Documents (EDD)</b>		
13	Management accounts for the two years to 31 December 2021	EDD-6
14	Financial information on EVO	EDD-14
15	Memo to the Management Committee from the Chief Operating Officer relating to equipment malfunction in Beeland	EDD-15
16	Email from Melissa Wong to Jasmine Eng engaging Swan Chartered Accountants LLP to write a report on Puroco	EDD-17
17	Puroco: Requirements	EDD-18

Note: Unless otherwise stated, all dollar amounts (\$) are in Singapore dollars.

## Puroco - Management accounts for the two years to 31 December 2021

Statement of Profit and Loss	Notes	Year ended 31 December	
		2021	2020
		\$000	\$000
<b>Revenue</b>			
Construction	1,2	130,000	80,000
Operating and maintenance revenue		226,829	252,439
Sale of mobile water equipment		19,000	12,000
<b>Total revenue</b>		<b>375,829</b>	<b>344,439</b>
Cost of sales:			
Contract costs		(93,600)	(60,000)
Operations and maintenance costs		(131,829)	(146,939)
Amortisation of service concession agreements	5	(34,400)	(40,000)
Manufacturing of mobile water equipment		(11,400)	(9,000)
<b>Total cost of sales</b>		<b>(271,229)</b>	<b>(255,939)</b>
<b>Gross profit</b>		104,600	88,500
Research and development costs	6	(5,494)	(4,652)
Other income	3	15,000	35,000
Head office costs		(45,000)	(31,500)
<b>Profit before interest and tax</b>		<b>69,106</b>	<b>87,348</b>
Investment income		15,000	1,667
Finance costs		(28,000)	(28,000)
<b>Profit before tax</b>		<b>56,106</b>	<b>61,015</b>
Tax expense		(6,733)	(7,322)
<b>Profit for the year</b>		<b>49,373</b>	<b>53,693</b>
Dividends		(11,899)	(10,739)
<b>Retained profits</b>		<b>37,474</b>	<b>42,954</b>

## Statement of financial position as at 31 December

	Notes	2021 \$000	2020 \$000
<b>Non-current assets</b>			
Property, plant and equipment	4	29,326	28,813
Service concession agreements	5	643,600	811,200
Development costs	6	21,000	26,000
<b>Total non-current assets</b>		<b>693,926</b>	<b>866,013</b>
<b>Current assets</b>			
Construction contract balances	7	140,000	40,000
Inventories		27,684	21,418
Trade and other receivables		50,480	44,194
Short term investments		300,000	200,000
Cash and cash equivalents		5,505	7,759
<b>Total current assets</b>		<b>523,669</b>	<b>313,371</b>
<b>Total assets</b>		<b>1,217,595</b>	<b>1,179,384</b>
<b>Equity</b>			
Share capital		600,000	600,000
Retained earnings		188,118	150,644
<b>Total equity</b>		<b>788,118</b>	<b>750,644</b>
<b>Long term liabilities</b>			
Loans and borrowings		300,000	400,000
<b>Current liabilities</b>			
Trade and other payables		22,744	21,418
Loans and borrowings		100,000	—
Tax payable		6,733	7,322
<b>Total current liabilities</b>		<b>129,477</b>	<b>28,740</b>
<b>Total equity and liabilities</b>		<b>1,217,595</b>	<b>1,179,384</b>

## 1. Accounting for Build Operate Transfer agreements

The majority of the company's construction projects are Build Operate Transfer (BOT) agreements. Under such agreements, Puroco develops a water treatment plant at its own cost on behalf of the grantor, in exchange for the concession to operate it for a specified period of time, typically 25 years. During this concession period, Puroco has the right to supply purified water to users within the vicinity of the plant, and to charge the users for this. At the end of the concession period the plant is transferred to the grantor usually for a small sum or zero payment.

During the construction period, cost incurred are recognised in the statement of profit and loss as contract costs. Cost includes all expenditure related directly to the project and an allocation of fixed and variable overheads incurred in the company's contract activities based on normal operating capacity.

The amount of revenue recognised on contracts during the financial year is based on an estimate of the degree of completion of each project based on an engineer's report. Revenue recognised during a period is shown as "construction" in the statement of profit and loss. As revenue is recognised, a corresponding amount is recognised as construction contract balances in the statement of financial position.

The transaction price for the purposes of revenue recognition is the fair value of the concession agreement, which is the discounted future cash flows that the concessions will generate. The future net cash flows are forecast by management and are based on conservative estimates so that it is highly probable that management will not be required to reverse these when the plants are complete, and the actual cash flows are known with certainty.

On completion of a project, all amounts included in the construction contract balances in respect of the project are transferred to "Service Concession Agreements", an



intangible asset in the statement of financial position. This is amortised over the life of the concession on a straight line basis and is tested annually for impairment.

The plants are not recognised under Property, plant and equipment as they are controlled by the Grantor, not by Puroco.

## 2. Construction revenue

	<b>2021</b>	<b>2020</b>
	\$000	\$000
China - water recycling plants	–	40,000
Singapore - Power plant	100,000	20,000
Other projects	30,000	20,000
	<u>130,000</u>	<u>80,000</u>

## 3. Other Income

	<b>2021</b>	<b>2020</b>
	\$000	\$000
Consideration in respect of sale of assets	178,200	265,400
Carrying value of assets disposed	(163,200)	(230,400)
Other income	<u>15,000</u>	<u>35,000</u>

On 1 January 2021, the company sold the rights to all of its sewage treatment concessions in China to municipalities, as well as a smaller purification plant in Vietnam. During the year ended 31 Dec 2020, the company sold the rights to the concession in Tunisia to Eau de France, a multinational water company.

#### 4. Property, plant and equipment

	<b>As at 31 December</b>	
	<b>2021</b>	<b>2020</b>
	<b>\$000</b>	<b>\$000</b>
Carrying amount:		
Buildings	20,391	20,807
Plant & machinery	7,738	6,606
Equipment	1,197	1,400
Total	<u>29,326</u>	<u>28,813</u>

#### 5. Service concession agreements

	<b>2021</b>	<b>2020</b>
	<b>\$000</b>	<b>\$000</b>
Cost/ value		
At 1 January	1,000,000	1,070,000
Add transferred from Construction contracts	30,000	170,000
Less sold	(170,000)	(240,000)
At 31 December	<u>860,000</u>	<u>1,000,000</u>

#### **Amortisation of service concession contracts**

Accumulated Amortisation as at 1 January	(188,800)	(158,400)
Amortisation for the year	(34,400)	(40,000)
Less amortisation of sold assets	6,800	9,600
Accumulated Amortisation as at 31 December	<u>(216,400)</u>	<u>(188,800)</u>
Carrying value at 31 December	<u>636,800</u>	<u>811,200</u>

#### 6. Development costs

	<b>As at 31 December</b>	
	<b>2021</b>	<b>2020</b>
	<b>\$000</b>	<b>\$000</b>
Costs	48,000	48,000
Accumulated amortisation	(27,000)	(22,000)
Carrying amount	<u>21,000</u>	<u>26,000</u>

Development costs relate to the costs incurred in developing the Klearer ultrafiltration membranes. Amortisation of development costs is included within Operations and maintenance costs.

Research and development costs includes the costs incurred in relation to the Klearer II project. It is likely that some of this will be capitalised as an intangible asset when the financial statements are finalised. We are waiting for the exact amounts that can be capitalised from an external consultant.

## 7. Construction contract balances

	<b>2021</b>	<b>2020</b>
	\$000	\$000
Balance b/f	40,000	130,000
Add revenue	130,000	80,000
Less transferred to Service concession agreements	(30,000)	(170,000)
Bal c/f	<u>140,000</u>	<u>40,000</u>

## 8. Further analyses

A member of Puroco's performance management team has performed some additional analysis on the company's financial statements. You may assume that the following calculations are correct.

	<b>2021</b>	<b>2020</b>
<b>Business mix</b>		
Construction	35%	23%
Operating and maintenance income	60%	74%
Sale of mobile water equipment	5%	3%
<b>Year-to-year revenue growth</b>		
Construction revenue	63%	-68%
Operating and maintenance revenue	(10%)	9%
Sale of mobile water equipment	58%	100%
Total revenue	9%	(29%)
<b>Gross margin overall</b>	28%	26%

## Margins by business area

	<b>2021</b>	<b>2020</b>
	\$000	\$000
Construction revenue	130,000	80,000
Contract costs	(93,600)	(60,000)
Gross profit from construction	<u>36,400</u>	<u>20,000</u>
Gross margin from construction	<u>28%</u>	<u>25%</u>
Operating and maintenance revenue	226,829	252,439
Operations and maintenance costs	(131,829)	(146,939)
Amortisation of service concession agreements	(34,400)	(40,000)
Gross profit from operating and maintenance income	<u>60,600</u>	<u>65,500</u>
Gross profit margin	<u>27%</u>	<u>26%</u>
Sales of mobile water equipment	19,000	12,000
Manufacturing of mobile water equipment	(11,400)	(9,000)
Gross profit from sale of mobile water equipment	<u>7,600</u>	<u>3,000</u>
Gross profit margin from sale of mobile water equipment	<u>40%</u>	<u>25%</u>

<b>Additional information</b>	<b>2021</b>	<b>2020</b>
Operating profit margins (Profit before interest and tax /revenue)	18%	25%
Operating margin excluding other income (Profit before interest and tax - other income)/Revenue)	14%	15%
Finance costs as a % of debt	7%	7%
Interest cover (Profit before interest and tax/ finance costs)	2.5	3.1
Return on short term investments	5%	1%
Current ratio (Current assets/ current liabilities)	4.0	10.9
Return on capital employed (Profit before interest and tax / Equity plus debt)	6%	8%
Gearing (Debt/Equity plus debt)	34%	35%

## 9. Benchmarks

The following information has been obtained from a competitor.

	<b>2021</b>
Operating profit margin	23%
Current ratio	0.98
Gearing (Debt/equity + debt)	52%
Revenue growth	25%
Return on capital employed	6%

**END OF EXHIBIT 13**

## Financial information on EVO

### Extracts from recent financial statements:

	Year ending 31 Dec 21 \$'000	Year ending 31 Dec 20 \$'000	Year ending 31 Dec 19 \$'000
Revenue	3,130	3,025	2,803
Gross profit	2,424	2,351	2,186
Profit before interest and tax*	752	673	625
Interest	(75)	(75)	(75)
Tax	(115)	(101)	(93)
Profits after tax	562	497	457
Dividends	470	450	420
Total equity	2,045	1,953	1,916
Long term debt – 5% loan, repayable Dec 2025	1,500	1,500	1,500

\* The 2 brothers who own 40% each of the company's ordinary shares are directors, and each withdraw no salary, taking all their income as dividends. A comparable role would command an annual salary of approximately \$150,000 each (net cost to the company after corporate income tax).

The current plans to launch an oxygen-balanced water product should accelerate earnings growth for 5 years to 20% per year, before reducing to 4% per annum thereafter.

Should Puroco acquire the business, the application of superior data analytics to decision making should accelerate earnings growth by a further 10 percentage points per annum for the first 5 years post acquisition.

The profit after tax of Evo is approximately equal to the annual net cash flow of the company.

Equivalent listed businesses have a price/earnings ratio of 25 times.

A suitable cost of equity for valuation purposes would be 10%.

**END OF EXHIBIT 14**

**Memo to the Management Committee from the Chief Operating Officer relating to equipment malfunction in Beeland**

**Memo**

**From: Eugene Chung, Chief Operating Officer**  
**To: The Management Committee**  
**Subject: Equipment malfunction in Beeland**  
**Date: 25 May 2022**

I have just received a worrying call from one of our clients in Beeland (a country in Southeast Asia). This client has bought a number of our mobile water treatment modules, and leases them out. Recently it leased a module to a municipality in Beeland. The module was used to purify sewage before being discharged into the Mekong River, while a local sewage plant was closed for reconstruction.

During the rainy season, large quantities of water meant that the equipment became overloaded and as a result, malfunctioned. For a period of three days, raw sewage was discharged into the Mekong River. This event occurred in December last year.

The municipality has decided that the mobile water treatment equipment is faulty, and is considering taking legal action against Puroco, as they are blaming us for the faulty equipment. It actually seems that it was not the equipment that was at fault, as there are stated limits to the volume of sewage that the machine can manage, and it seems that these volumes were exceeded by 50%.

Our client also told me that he knows a senior government official. This official has told him that for a 'fee' of US\$10,000, he can ensure that no action will be taken against Puroco.

We need to make a decision quickly. I admit that the US\$10,000 would be a small price to pay. Please let me know your opinions.

**END OF EXHIBIT 15**



**Email from Melissa Wong to Jasmine Eng engaging Swan Chartered Accountants LLP to write a report on Puroco**

**Jasmine Eng**

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**From:** Melissa Wong <MWong@Puroco.sg>  
**Sent:** 2 June 2022 13:21  
**To:** Jasmine Eng <ENG\_Jasmine@SwanCA.sg>  
**Subject:** Engaging Swan Chartered Accountants LLP to write a report on Puroco

Dear Mrs Eng,

It was nice to meet you this morning.

As I mentioned during our discussions this morning, we would like to seek your professional advice to identify and understand the complex strategic challenges that Puroco and the wider water industry are facing. Mindful of this, I would like your firm's input on a range of matters. I would like you to present your views and recommendations in a formal report to me by 30/6/2022.

The elements that I wish to see in the report are set out in the attachment to this email (Exhibit 17).

Best wishes

M Wong

**END OF EXHIBIT 16**

**Puroco: Requirements**

Your formal report should comprise the following four elements:

**e-Exam  
Question  
Number**

**Requirement 1: An executive summary**

**2**

- (a) Write an executive summary to accompany your report. Your Executive Summary should allow Ms Wong to obtain a general understanding of what your report contains, including the key numbers. You should also include clearly stated assumptions, conclusions, and recommendations.

While your Executive Summary should not contain any material or points that you have not discussed in the main body of the report, you are required to highlight any potential interactions between the individual standalone requirements below.

**(Total: 10 marks)**

**e-Exam  
Question  
Number**

**Requirement 2: Evaluation and strategic review**

**3** (a) Evaluate the financial performance of Puroco for the year ended 31 December 2021 using information in Exhibits 5 and 13.  
**(15 marks)**

**4** (b) Analyse the external environment and explain the implications of this for Puroco  
**(10 marks)**

**5** (c) Evaluate the three significant risks identified by the risk committee (Exhibit 11) and using an appropriate model recommend a suitable response to each of them.  
**(9 marks)**

**(Total 34 marks)**

**e-Exam  
Question  
Number**

**Requirement 3: Business options, financial reporting and tax**

**6**

- (a) Discuss three benefits and three risks of the proposed co-operation with Singen.

**(8 marks)**

**7**

- (b) Evaluate the suitability, feasibility and acceptability of the proposed acquisition of EVO. Note: calculations are not required.

**(6 marks)**

**8**

- (c)(i) Calculate two valuations for EVO, based on earnings and future cash flows, using the information in Exhibit 14

**(5 marks)**

- (c)(ii) Critically assess the valuations calculated in part (i) and make a recommendation of the maximum consideration that Puroco should offer to acquire the equity of EVO.

**(5 marks)**

**e-Exam  
Question  
Number**

**Requirement 3: Business options, financial reporting and tax**

**9**

(d)(i) Explain the financial reporting issues relating to the capitalisation of the development expenditure on the Klearer II technology

**(6 marks)**

**10**

(d)(ii) Detail the government grants and other tax incentives that Puroco can take advantage of in respect of the development of the Klearer II technology

**(6 marks)**

**(Total 36 marks)**

**e-Exam  
Question  
Number**

**Requirement 4: Ethics and environmental, social and governance  
issues**

**11**

- (a) Discuss the Environmental, Social and Governance issues that relate to Puroco's current activities. Your discussion should also consider how these might be affected by the acquisition of EVO.

**(10 marks)**

**12**

- (b) Discuss the ethical implications of the situation in Beeland described in Exhibit 15, and recommend what action Puroco should take

**(10 marks)**

**(Total 20 Marks)**

**END OF EXHIBIT 17**

**END OF PAPER**