COURSE COVERAGE

Question	Units	Syllabus Performance Outcome and Learning Objective	Total Marks
1 (a)	1, 4	1.1.1, 1.2.3, 4.14.6	2
1 (b)	1, 2	1.2.3, 2.7.5	10
1 (c) (i)	1, 2	1.2.3, 2.7.5	2
1 (c) (ii)			3
1 (c) (iii)			3
1 (d)	2	2.4.2, 2.7.4, 2.7.5	7
1 (e)	2	2.7.3	3
2 (a)	1	1.1.1	2
2 (b)	1, 4	1.1.2, 4.14.6	5
2 (c) (i)	1, 2, 4	1.2.4, 1.2.5, 2.5.1, 2.5.4, 2.5.5, 4.12.1, 4.14.3	3
2 (c) (ii)			3
2 (c) (iii)			3
2 (d)	3, 4	3.9.4, 3.9.5, 4.12.1,	6
2 (e)	1, 2, 4	1.2.6, 2.4.2, 2.5.6, 2.7.3, 2.7.4, 4.12.3,	8
3 (a)	1, 2	1.2.2, 2.5.3	3
3 (b)	2, 3, 4	2.5.4, 3.8.1, 3.9.4, 4.12.4, 4.12.54, 4.14.1, 4.14.3	3
3 (c)			3
3 (d)	2, 3, 4	2.5.3, 3.8.2, 4.12.4, 4.12.5	4
3 (e)	1, 2, 3	1.1.2, 1.2.2, 2.5.3, 3.8.1, 3.8.2, 3.8.3, 3.9.4,	4
3 (f)			7
3 (g)	1, 3	1.2.2, 3.10.1	2
3 (h)	3, 4	3.9.3, 3.10.3, 4.12.4	4
TOTAL			**90**

MARKING GUIDE: QUESTION 1 (30 Marks)

Notes:

- Unit Linked Pricing Errors
- Spreadsheet question
- Based on practice question 1, pg 59, of the C2A textbook (2019). Aiming to provide a spreadsheet question whose format all students should have attempted previously.
- Covered in the 'Unit Pricing: Guide to Good Practice' document that was included in the reading material as well as the textbook.

a)

The 'ASIC and APRA joint Guide – Unit Pricing: Guide to Good Practice, August 2008' (listed in the course reading) notes the following:

"Where historic pricing is used there is potential for arbitrage – that is, unit holders can buy or sell units to take advantage of the difference between yesterday's price and the subsequent shift in market value. When this happens, a few transacting unit holders benefit to the detriment of all ongoing unit holders."

This draws out the key considerations:

- The opportunity for arbitrage when an historic pricing approach is used, and;
- Consideration of equity between members of the fund in terms of absorbing daily market movements.

Other possible answers may include:

- Restrictions put in place in Fund documents with reference to how units are bought and sold, and;
- Administration systems only being capable of processing forward pricing.

However, these are less to do with the specific differences between the two approaches so would need to be provided along with one of the key considerations to gain full marks.

Marking Guide:

- **1.0 mark for recognising the opportunity for arbitrage.**
- **1.0 mark for recognising the equity between members.**
- **Other reasonable points awarded 0.5 marks at the marker's discretion.**

Maximum of 2 marks.

b)

A spreadsheet solution has been provided for this question. The approach taken in the spreadsheet can be summarised as follows:

Stage 1: Recreate the original data.

- **Column B: BOD NAV**
  - Beginning NAV = Yesterday's Ending NAV + Cashflows from Buy/Sell Orders
  - Cashflows from Buy/Sell Orders =
    'Buy' Cashflows less Spread Cost + 'Sell' Cashflows
    - Comparing the EOD NAV to (Units Bought) x (EOD Unit Price) each day reveals a 0.2% buy spread.
    - Doing the same for sell orders reveals no discernible sell spread.
    - This aligns with the comments in the question outline; a buy spread is used, but no sell spread or transaction costs apply.

- **Column C: EOD NAV**
  - Ending NAV = Beginning NAV x (1 + investment return rate)
  - The investment return rate can be derived from the data using the formulae as stated above and solving for investment return rate (using the provided data to determine the applicable rate).
  - An alternative method for getting investment return rates would be to use the change in unit prices from day to day. However, sense checking this would highlight that Error 3 creates an error in BOD 17 April 2019 NAV. As such, the only reliable way to recreate the original table (i.e. to determine the correct investment return rate) is to use the calculation above.

- **Column G: CF Sell Orders**
  - CF Sell Orders = Units Sold * EOD Unit Price
  - The exception to this would be day 16 April 2019, which needs to be set as: Units Sold * Yesterday's EOD Unit Price to align with Error 3

- **Column H: Units Bought**
  - Units Bought = CF Buy Orders / (EOD Unit Price * (1 + Buy Spread))
  - Assume that the amount of the buy sell spread is retained outside the fund / is used to pay transaction costs. As such, it would not be added to NAV each day.

Comparing the above to the original data should confirm that the calculations align with the original table. This can then be adjusted with corrections to the errors to investigate the impacts of the errors on customers and CCLI.

Stage 2 & 3: Correct for Errors 1 and 2

- Using the calculations already created above:
  - Adjust EOD NAV for 8 April 2019 to decrease it by $10m (to account for Error 1)
  - Adjust EOD NAV for 11 April 2019 to increase it by $12m (to account for Error 2)

Stage 4: Correct for Error 3

- Error 3 can be corrected by undoing the adjustment mentioned above; setting CF Sell Orders = Units Sold * EOD Unit Price for all days.

Based on these calculations, the following results can be derived:

Date	BOD NAV $ million	EOD NAV $ million	EOD Units millions	EOD Unit Price $ per unit
Wed 03-Apr-2019		1,000.00	1,000.00	1.00000
Thu 04-Apr-2019	1,007.38	1,018.46	1,007.38	1.01100
Fri 05-Apr-2019	1,026.72	1,018.51	1,015.55	1.00291
Mon 08-Apr-2019	1,021.60	1,032.03	1,018.63	1.01315
Tue 09-Apr-2019	1,036.94	1,034.86	1,023.47	1.01113
Wed 10-Apr-2019	1,034.81	1,023.42	1,023.42	1.00000
Thu 11-Apr-2019	1,019.12	1,032.14	1,019.12	1.01278
Fri 12-Apr-2019	1,021.81	1,018.75	1,008.92	1.00974
Mon 15-Apr-2019	1,018.43	1,020.47	1,008.61	1.01176
Tue 16-Apr-2019	1,030.12	1,004.37	1,018.15	0.98647
Wed 17-Apr-2019	996.87	998.86	1,010.54	0.98844
Thu 18-Apr-2019	1,000.73	1,010.74	1,012.44	0.99832
Tue 23-Apr-2019	1,008.70	1,020.81	1,010.40	1.01030
Wed 24-Apr-2019	1,020.17	1,030.37	1,009.76	1.02041
Fri 26-Apr-2019	1,022.71			

Marking Guide

- **Up to 7.0 marks for deriving the yellow shaded columns required to answer the question:**
  - **1.5 marks for correctly deriving the buy spread (or incorporating into calculations if not displayed separately in response)**
  - **1.5 marks for correctly deriving the investment return rates (or incorporating into calculations if not displayed separately in response)**
  - **1.0 mark for correctly recreating the BOD NAV column**
  - **1.0 mark for correctly recreating the EOD NAV column**
  - **1.0 mark for correctly recreating the CF Sell Orders column**
  - **1.0 mark for correctly recreating the Units bought column**

Note that if students recreate the columns excluding the original errors (i.e. skip straight to the corrected version rather than recreating the original data inclusive of the errors), they should still receive full marks for the items above.

- **Up to 2.0 marks for correcting Errors 1 and 2:**
  - **1.0 mark for decreasing EOD NAV by $10m on 8-Apr**
  - **1.0 mark for increasing EOD NAV by $12m on 11-Apr**

- **Up to 1.0 mark for correcting Error 3:**
  - **1.0 mark for correcting the 16-Apr sell cashflow and/or the 17-Apr BOD NAV**

Half marks may be granted at the marker's discretion where students stated the right methodology but made technical errors or could not complete the question.

Maximum of 10 marks, minimum of 0 marks.

c)

A spreadsheet solution has been provided for this question. The approach taken in the spreadsheet can be summarised as follows, but is mostly completed as part of the process for Question 2(b):

For **(i)**:

- Restitution figures are calculated as the difference between the final 'sell cashflow' and the original, but only for cases where unit prices were lower once corrected. This impacts days 11-Apr to 26-Apr, with the exception of 16-Apr where Error 3 results in an overpayment for a single day.

- Interest on restitution is calculated as described (8% p.a. compounded daily until 26-Apr). This needs to be calculated for each day a restitution was owed.

Restitutions Payable at EOD 26-Apr	148,270.77	$

For **(ii)**:

The total cost to CCLI is calculated as:

- The result of 1 (c) (i), plus;

- The difference between the EOD 26-Apr NAV corrected and the original figure. This captures cases where withdrawals were overpaid, and also incorporates the investment returns on the lost funds. It includes this for all three errors, less;

- $2m (i.e. the impact on NAV due to the correction of the 8-Apr and 11-Apr day-end NAVs). This is not considered a loss to CCLI as it is merely a restatement of the closing NAVs; only the lost investment return would need to be accounted for.

Students may opt to calculate this with simplified versions of this calculation. If this is the case, partial marks can be given at the marker's discretion.

Total Cost to CCLI of the Errors	772,715.70	$

For **(iii)**:

Given that there is overlap between the errors in terms of impacts, students may take different approaches to breaking down the errors. Any reasonable solution that notes this overlap and justifies how it is derived should be given full marks. An example is provided in the spreadsheet which simply applies the fixes one at a time, then compares the total result for Question 1 (c)(ii) in each case to determine what portion of the total variance each error generates. The results are below:

Incremental Cost of Error 1	997,504.56	$
Incremental Cost of Error 2	-685,332.35	$
Incremental Cost of Error 3	460,543.49	$
Total Cost to CCLI of Errors	**772,715.70**	$

Note that this variation results in a material decrease in cost arises from correcting Error 2, as it mostly offsets the impact of Error 1. If Error 1 had not occurred, this error would generate a negative impact for CCLI, as it results in underpayment of withdrawals.

Marking Guide

- **Up to 2.0 marks for Q1(c)(i) in total:**
  - **1.0 mark for correctly calculating the restitution figure**
  - **1.0 mark for correctly calculating interest**

- **Up to 3.0 marks for Q1(c)(ii) in total:**
  - **1.0 mark for incorporating lost investment return into the calculation**
  - **1.0 mark for identifying that the $2m adjustment does not belong in the calculation (0.5 mark can be given if the student acknowledges it and discusses why it should be included if they do include it)**
  - **1.0 mark for correctly calculating the figure inclusive of restitution, withdrawal impacts, and lost investment return**

- **Up to 3.0 marks for Q1(c)(iii) in total:**
  - **Up to 1.0 mark for a reasonable explanation of the breakdown; the overlapping of impacts, or the importance of the order of impacts, or for noting the favourable impact of Error 2 and why this is the case**
  - **Up to 2.0 marks for correct calculation of the breakdown (partial marks as per marker's discretion).**

Half marks may be granted at the marker's discretion where students stated the right methodology but made technical errors or could not complete the question. Marks should not be lost for mistakes carried forward from previous questions if working is clear, correct, and explained.

Maximum of 8 marks for Q1(c) in total, minimum of 0 marks.

d)

Error	Risk Category	Mitigation Strategies
1	Modelling Risk	• Implementing a technical and peer review process of the calculation could help to reduce the likelihood of errors occurring. • Implementing standard templates / models for the calculation of the expense reserve, including documentation for common issues, may streamline the process and reduce errors. • Expanding automated checks within the model to pick up previously incurred errors may also help. For instance, comparing the output to 'rule of thumb' checks or previous reserve calculations.
2	Process Risk	• To the extent it is possible, removing manual entry of figures would be advisable. However, this may involve significant system costs and not be a reasonable option. • Introducing a more rigorous sign-off process for manually-entered figures may help reduce errors. • Balance checks of cashflows across the various statutory funds may highlight cases where manually-entered figures have not been correctly allocated or entered.
3	System / IT Risk	• An audit of the code or system that generated the error should be undertaken to better understand the issue. This may be expensive, but could result in other issues being identified early. • A control total process could be implemented to check that close of day and start of day unit prices match. This could be conducted to more quickly identify similar issues in the future. • A process could be implemented wherein sell orders must be checked and approved by a supervisor or manager before release. However, this could slow down the day end process and delay applications processes.

For all of the above risks, CCLI could implement a unit pricing oversight committee to monitor and regularly assess the likelihood of these and other risks.

Marking Guide

- **1.0 mark for categorising each of the three risks sensibly, using the categories outlined in the question output. Note that this is to the marker's discretion; if appropriately justified the categorisations don't have to match the guidelines above exactly.**
- **Up to 1.0 mark for each mitigation strategy offered and reasonably explained, with a maximum of 2.0 marks for each error. 0.5 marks may be granted at the marker's discretion for ideas not provided above.**

Maximum of 7 marks.

e)

Reasons include:

- The cost of recovering the funds from clients (e.g. legal costs, resources involved, etc.) can outweigh the potential benefits. In some cases, the amounts may be also be immaterial for individual customers (e.g. $20 per client or less). While this will add up over a large membership base, it makes recovery tedious.

- There will be many cases where costs can't be recovered. This could be because clients have already spent the funds, or because the circumstances legally preclude the fund from seeking reimbursement from the client.

    - Reputational damage is a consideration; CCLI were likely at fault when an overpayment is made, and seeking clients to pay this back can highlight not only CCLI's errors but also provide a bad impression in terms of how they treat customers. For members that still hold an account, this could lead to early account closures due to dissatisfaction.

Marking Guide

- **1.0 mark for recognising and explaining the reputational considerations.**
- **1.0 mark for recognising and explaining the prohibitive costs of recovery.**
- **1.0 mark for recognising and explaining legal issues in terms of recovery.**
- **Other reasonable points awarded marks at the marker's discretion.**

Maximum of 3 marks.

END OF MARKING GUIDE: QUESTION 1

MARKING GUIDE: QUESTION 2 (30 Marks)

Notes:

- Trauma Business Risks
- Launching a new direct product; risk management, product design
- General trends and nature of Trauma in Australia
- Draws from the 'Trauma: want to play the lottery' paper in the reading material. Many similar past exam questions (dealing with risks / direct business/ trauma).

a)

Broadly, trauma insurance aims to provide a lump sum to policyholders that have recently been diagnosed with a serious illness or sustained a serious injury. As with all insurance (life and general) the intent of the policy is to indemnify the policy owner against the loss incurred. The majority of Australian trauma business is single definition focused paying the full sum insured however there are efforts to move to a severity-based design where the proportion of the sum insured payable depends upon the severity of the condition. The nature of the benefit design means it is generally paid on confirmation of diagnosis, making funds available to help claimants manage their condition as it develops.

While in some countries the financial need extends to paying for medical costs, under Australian legislation the reimbursement of medical expenses is defined as health insurance and covered by the public and private health insurance systems. However it is generally recognised that there are gaps and additional costs that the lump sum benefit can meet. As a result, the need for trauma cover is derived from other expenses associated with contracting a serious condition:

- The provision of expert or premium care (e.g. travelling overseas to see specialists or have treatments not covered under Australian health insurance),
- Immediate relocation costs for the claimant or their family while undergoing treatment,
- Purchase of equipment or supplies that will make treatment or living with the condition more comfortable,
- Reducing financial burdens to avoid additional stress while seeking treatment (e.g. reducing debts, allowing for reduced work hours, etc.)

Marking Guide

- **1.0 mark for identifying the broad needs met by trauma and suggesting specific examples**
- **1.0 mark for recognising that the nature of the Australian healthcare system affects the focus of trauma insurance in terms of meeting customer needs**
- **Other reasonable points (e.g. quick payment of funds, basic claim causes covered, etc.) awarded 0.5 marks at the marker's discretion.**

Maximum of 2 marks.

b)

	Pros	Cons
Minimum Requirements	• Provides a guaranteed minimum level of cover while allowing room for innovation by insurers in terms of what conditions the product covers ('best of both worlds' approach). • Can lead to a wider range of affordable options; gives customers the option to take a 'minimum needs' product at a cheaper rate or a 'premium' product with above minimum cover. • Insurers have the option to specialise in certain conditions and be generous in target areas. This can mean some conditions are covered that wouldn't be if the definitions were standardised, expanding options for certain customers.	• Can leave customers confused, particularly if the minimum is not overly prescriptive and easy for insurers to meet with a wide variety of definitions. • Can result in consumers discovering too late that they aren't covered for something they'd expected to be covered for, or legal battles while the consumer is dealing with a series illness.
Standardised Definitions	• Customers have a clearer understanding of what's covered, making the sales process more streamlined as advisors only have to explain one product to cover multiple insurers. • Customers are less likely to have issues at claim time in terms of unexpected interpretations of definitions. • Forces insurers to compete on service and price rather than product. This arguably leads to more competitive pricing at the benefit of the consumer. • A market-wide standard definition set could be more easily updated in line with medical improvements than would be the case for individual companies	• Arguably dis-incentivises insurers from innovating on product design, as innovations would be rolled out to other insurers. • Reduces the options for customers in terms of product coverage.

Marking Guide

- **Up to 2.0 marks for discussion of the impact on innovation. Separate marks awarded for highlight innovation in various areas (e.g. condition lists, specialisation of cover, pricing strategies)**
- **1.0 mark for discussion of price competitiveness and affordability**
- **1.0 mark for the transparency of products for consumers at and before claim time**
- **1.0 mark for discussion about the sales / advice process**
- **Other reasonable points awarded marks at the marker's discretion.**

Maximum of 5 marks.

c) (i)

Death-only insurance is generally based on a small set of rating factors such as age, gender, and smoking status. While there is some risk of anti-selection, this is generally more prevalent in morbidity products.

Other questions asked during an advice-sold process might include:

- Queries about the insured's occupation / avocation. This is important as environmental factors related to occupation (manual work, outdoor activities, etc.) can increase the risk of some cancers, injuries, and heart conditions and hence claims from Trauma.

- Similar to occupation, other aspects of the insured's lifestyle and activities (e.g. dangerous hobbies, alcohol intake, drug use, etc.) would be collected to assess their risk of particular illnesses or injuries.

- Current salary and working status can be an important tool in morbidity risk selection. Those currently in full time work are considered to be in generally better health than those who aren't, and needs are usually determined as a multiple of annual income. The maximum sum insured permitted would be limited to the assessed need less any existing cover not being replaced and cover is frequently less than this amount as determined by the customer's ability to afford the premium. A larger difference between total need and sum insured would imply less risk of anti-selection risk – as those looking to exploit the insurer would be aiming for maximum financial advantage.

- Medical history / current health status would be collected during the sale process or assessment process and used to discern whether the customer presents a greater risk of claim than the average policyholder and may result in the insurer seeking to apply a loading or exclusion to the policy to balance the cost of cover against the customer's need for cover.

- Family history is an important indicator of future experience for some illnesses and cancers. This would be collected as part of the underwriting process in an advice-sold / fully underwritten policy.

Marking Guide

- **1.0 mark for recognising morbidity influencing factors such as occupation/avocation as the main rating factor not included, plus a reasonable explanation of its importance.**
- **0.5-1.0 marks for identifying other important aspects as to the marker's discretion.**

Maximum of 3 marks.

c) (ii)

Medical underwriting

The question outline specifies that the underwriting process for SLI is aimed at being quick rather than detailed. The questions asked during short-form underwriting tend to rule out significant and uncertain risks (e.g. previous claims on a life insurance policy, currently sick enough to claim, HIV positive, etc.) and result in an immediate accept/decline cover outcome and so do not provide a deep understanding of the insured live's medical history which would be needed to assess their overall risk compared to a standard life. Instead, PECE and restrictive terms in the policy document are employed to restrict eligibility and thereby, the risk of anti-selective claim experience arising. As eligibility for the benefit is determined at the time the benefit would become payable, this effectively means that medical underwriting is done at the time of claim rather than at the point of sale. This may be seen as a poorer outcome for the insured – particularly for a Trauma-style product - as they may not realise they are not covered for a specific illness or condition. It is vital therefore that the key features and restrictions on the cover are clearly explained as part of the sales process.

In an advice / fully-underwritten process, on the other hand, extensive medical history will be collected before the policy is issued. Depending on the nature of the cover (more detailed for Trauma compared to Death), the amount insured (higher sums insured leads to more detailed underwriting) and age of the insured (more detailed for older clients) the underwriting process might involve:

- A detailed application form, asking about the customer's medical history, family history, occupation and hobbies/lifestyle/travel,
- Simple blood tests or general health check-ups, or potentially;
- More extensive bloodwork and health checks (e.g. ECGs);
- Reflexive questions seeking additional information about disclosed medical conditions and how they are managed.

Depending on the underwriting rules engines / processes of the insurer, this may mean a much longer time between initial application and acceptance of the risk due to medical underwriting or the use of dedicated telephone underwriting / paramedical services to gather the information. It is more common in a fully underwritten policy for risks identified as being other than standard will be offered loadings or exclusions which generally are not used in SLI's approach of short form / limited underwriting.

Financial underwriting

SLI again takes a light-touch approach to financial underwriting. Rather than aiming to capture information about the financial status of the applicant, it relies on a maximum sum insured term to limit its exposure to large claims and financially-based anti-selection.

In an advice-sold Trauma product, on the other hand, higher levels of cover will often lead to more stringent medical underwriting. Details about the applicant's financial history (current salary, length of time in job, hours worked per week, annual earnings for self-employed persons, etc.) will be captured to help assess whether the sum insured applied for is commensurate to the consumer's needs or whether there is a risk of anti-selection evident.

This could limit the sum insured offered to the applicant on standard terms or similarly restrict their cover in a bespoke manner.

Marking Guide

- **0.5 mark each for recognising how SLI handles financial and medical underwriting in its current design.**
- **1.0 mark each for a reasonable explanation of medical and financial underwriting in an advice-sold framework.**
- **Some aspects of this question may have been covered in the student's answer to Q2(c)(i). If that's the case, they should receive marks for this even if they did not explicitly list them in this question.**

Maximum of 3 marks.

c) (iii)

In an advice-sold product, commission is typically paid out to the intermediary (i.e. the advisor) for selling the product. This generally involves a larger, upfront commission paid when the product is issued (following receipt of premium and confirmation of underwriting outcome), followed by smaller renewal or 'trail' commission for each year that the policy remains in force. These commissions are generally expressed as a percentage of the annual premium. These commissions are an expense to the insurer on top of the other expenses involved in the underwriting process.

In SLI's case, sales remuneration will generally be salary-based with bonus targets for the volume or profitability of the business sold by each call centre staff member. If commissions are paid per policy, they will tend to be lower than the upfront commissions paid on advice-sold products, reflecting the fact that the staff member selling the business is not providing in-depth advice upon sale and hence the effort to sell the product is lower.

In both instances commissions will be limited to the maximum levels permitted under the Life Insurance Framework and subject to the claw-back provisions contained therein.

Some intermediaries chose to structure their remuneration differently and offer to rebate any commission built into the product and charge either a level commission or a fee-for-service and these do not fall within the Life Insurance Framework.

This will impact lapse experience in a number of ways (directly and indirectly):

- The lower attention paid at the time of sale may mean customers are less aware of the terms of cover, and will not have invested as much time in understanding the policy before purchase and may change their minds after agreeing over the phone. This can lead to higher initial (i.e. first year) lapse rates and cancel from inception rates (no premium ever paid) for the direct-sold products that SLI provides.

- Conversely, the effort expended to sell and purchase the policy, and on-going contact from the adviser who has a financial interest in ensuring the policy remains in-force, will lead to longer average tenures for advice-sold policies. As such, SLI should expect a relatively short average duration for their direct-sold portfolio.

- Over time direct sold business lapse rates drop to a steady level which may then experience spikes which are more impacted by competitor activity as customers respond to new promotions and move their cover to a new policy. In comparison advice-sold policies experience increasing lapse rates as the duration of the policy passes the commission responsibility period and the level of servicing and support from the adviser may decline. With the majority of business sold in Australia being annually stepped yearly renewable cover, there is no disincentive for a healthy life to move to a new policy (as there would be with level premium business) so advice-sold business is likely to be more susceptible to being churned (rewritten with a new insurer).

Marking Guide

- **0.5 mark each for explaining the different in commissions between SLI and advice-sold polciies.**
- **1.0 mark for each reasonably explained observation about the differences in lapse experience between SLI's products and a general retail product.**

Maximum of 3 marks.

d)

The comparative value of the proposed product versus the average retail Trauma product in terms of dollar cost per unit of sum insured, will be dependent upon a number of factors, such as:

- SLI's marketing approach / acquisition expenses. Most direct business is either promoted via mass media (TV, Radio, newspapers, magazines) and therefore has a high upfront cost that must be spread over the business sold. As a result it is dependent on the conversion or take-up rates. Other methods involving out-bound calling / promotion on the internet have less set up / overhead costs but are still dependent upon the take up / success rate.

- SLI's product would pay out on less conditions / trauma events compared to a standard retail product and probably have stricter definitions, making the expected claim costs lower.

- SLI's product would not incur significant upfront commission and underwriting expenses as an advice-sold trauma product would but both will have policy issue and acquisition related overhead costs.

- Given the nature of the sales process, SLI would likely to offer a set choice of 3-4 levels of sum insured with the lowest amount typically being a lower minimum sum insured than would be offered through advice based sales.

- SLI's product would be bundled with a death product, making it cheaper than a standalone Trauma policy as some claims would be an acceleration of the death benefit and hence only incremental claim costs would need to be priced (this is similar to rider Trauma policies in retail, so there would not be a significant price discrepancy if compared to those).

However, given SLI's marketing and the factors they collect during sale, it's also likely that the insured pool that SLI attracts is a higher risk pool (i.e. lower income, more manual occupations). This could mean the average premium rate is tailored to a heavier risk category – such that some cohorts would benefit from seeking retail policies in spite of the items above.

It's unlikely that the proposed product would provide as good value to the customer as a retail policy, and may not meet consumer's needs/expectations:

- If the PECE and other restrictive terms are maintained, this could lead to relatively higher decline rates on SLI's product compared to a retail Trauma product.

- The exclusion of heart attack and stroke would mean a large number of cases which could normally claim trauma would have to be excluded. Depending on how the product is marketed (i.e. as 'Trauma product' vs. a 'Cancer-protection product') this could mean consumers aren't covered for what they thought they were.

- Marketing it as a 'Cancer-only' product may mean consumers believe all types of cancers are included. The specifics around what stages of cancer and which types of cancer are covered may be too detailed to cover over the phone or online. This could similarly mean consumer's expectations are not met.

- The higher lapse rates of direct policies will drive up administrative expenses. Combined with higher decline rates and low sums insured (which drive up per-claim management expenses) this would likely result in lower claim loss ratios for the product than for a standard retail Trauma policy.

Marking Guide

- **0.5 mark each for providing an opinion on the value/needs and affordability aspects separately.**
- **1.0 mark each up to a total 5.0 marks for:**
    - **Identifying lower claim costs from restricted conditions**
    - **Identifying differences in remuneration and expenses**
    - **Identifying issues with claim management expenses and/or claim loss ratios**
    - **Identifying lapses as a driver of value**
    - **Discussion of the issues around customer expectations**
    - **Discussion of the different mixes of business underlying the two portfolios**
    - **Any other points as per the marker's discretion**

Maximum of 6 marks.

e)

The following risks / mitigations could be included in the memo:

Risk	Possible Mitigation(s)
Product: medical technology is improving rapidly, and early detection of cancer is an area where significant investment is being made. It's possible that a sudden improvement in cancer detection could lead to a sharp rise in cancer claims under the portfolio. This is not something SLI has faced previously, as it relates to diagnosis of cancer rather than death resulting from it.	• Regular review of medical improvements, with the aim of incorporating changes in product terms quickly. • Future-proofing product terms (where possible) to acknowledge the severity of the condition that would be paid out on • Adding terms that would allow for the definitions to be reviewed upon release of these technologies
Claims Management: SLI doesn't currently have expertise in managing claims for a Trauma or cancer-only product. There's a risk that claims are mismanaged resulting in a higher volume of payouts than originally estimated. Definitions could create unintended consequences due to lack of appropriately detailed criteria for assessment of severity (eg bleeding of the optic nerve and resultant of loss of peripheral vision could meet Stroke definition, marathon runners are known to get similar changes in cardiac enzymes as those required to meet heart attack definition)	• Reinsurers (if SLI chooses to reinsure the product) or independent claims specialists may be able to provide expert support in terms of claim management • Hiring staff with medical backgrounds or cancer specialisations to work on the product and train claims staff • Hiring claims personnel with experience in managing trauma claims
Mis-Selling: the possibility for such a relatively complex product (with specific definitions and exclusions for different cancer types) to be mis-sold in a "general advice" (ie not personal advice) process is high. This opens SLI up to the possibility of future class actions.	• Extensive training for sales staff • Review of call scripts and spot checking recordings to ensure that products are being sold appropriately • Consumer surveys to determine whether expectations are misaligned • Independent marketing firms (outside insurance) engaged to help support advertising development
Pricing: while data exists in the market for Trauma products, it may not be applicable to this product – either because the demographic purchasing it differ, or because there are overlaps between claiming on cancer and claiming on other trauma definitions (i.e. the rate of cancer claims for insured lives may be higher than implied by existing Trauma experience).	• Benchmarking of trauma rates against population cancer data to determine extremes • Adding buffers to pricing which could absorb underestimation of costs • Consultation with claims staff or reinsurers with trauma experience to determine relationships between trauma claims causes and cancer

Risk	Possible Mitigation(s)
Anti-Selection: the lack of detailed underwriting in SLI's process might mean a higher risk of anti-selection than is currently anticipated. A cancer-only product may require additional safeguards and protections compared to SLI's existing approach.	• Existing direct-sold trauma products in the market may be a source of ideas for controlling these risks • SLI could extend out its underwriting process marginally for customers interested in the cancer-only product • Implementing an automated underwriting rules engine may provide a reasonable balance between speed of application and management of risk. In this cases, more questions could be asked (e.g. online or over the phone) and an instant assessment granted based on the rules.
Reputational: management of a Death-only portfolio is more straightforward than morbidity products, even if focused only on cancer. If claims are mismanaged this could result in a reputational risk for SLI. Advancements in medical technology means diagnosis and treatment methodologies change and generally over time the impact of a trauma decreases. Older policies may have out of date definitions that use measures no longer done as standard as part of the criteria. PECE clauses in policies typically generate lots of complaints at claims time when the life insured or their dependents discover that the policy does not provide the cover they thought it did	As per the mitigations listed for claims management and mis-selling. For definitions, SLI could seek to establish an independent body of medical specialists who review the definitions from time to time and establish a "current equivalence" of assessment and severity criteria to allow older claims to be assessed quickly and fairly.
Strategic Risk: development and launch of this new product will tie up significant resources. If the customer based proves to be uninterested in a cancer-only trauma product this could result in a lot of wasted time, effort, and money.	• Consumer focus groups or surveys of existing customers could be used to gauge interest in the product at an early stage of development
Expense risk: Due to additional product complexity, take-up rates may be lower than SLI's existing term and funeral insurance products, leading to higher acquisition cost per sale.	•

Risk	Possible Mitigation(s)
Regulatory risk: Changes to regulations and industry codes of practice (eg. ASIC Direct Review, LICOP) may lead to low value products and certain sales channels being banned, or changes to benefit definitions. There is an additional risk that unfavourable changes could be retrospective.	•

Marking Guide

- **1.0 mark for each risk identified and adequately explained, up to a maximum of 5.0 marks**
- **0.5 mark for each proposed mitigation, up to a maximum of 2.0 marks per risk.**
- **1.0 mark should be deducted for failing to present the answer in memo format, as requested.**

Note: markers should use their discretion in terms of what constitutes a separate point / mark in terms of identified risks. Students that list multiple variations of single categories (e.g. multiple variations of reputational risks) should not receive marks beyond the first item identified.

Other reasonable points not listed should also receive marks.

Maximum of 8 marks, minimum of 0 marks.

END OF MARKING GUIDE: QUESTION 2

MARKING GUIDE: QUESTION 3 (30 Marks)

Notes:

- Group Risk
- Experience Analysis and pricing processes for group schemes
- Marginal expenses

a)

While there are a number of items provided in the RFP, the major elements students should choose are as follows:

- **A claims extract from the scheme**
  A log of all claims lodged over recent years (preferably over the entire history of the scheme), which details key information such as dates of event and notification, the amount paid, whether the claim was declined, etc.

  This is needed to assess the claims experience of the scheme, and to then derive various items such as the Incurred But Not Reported ('IBNR') and Reported But Not Admitted ('RBNA') reserves as well as the claim loss ratio. Without this information, a pricing actuary would struggle to accurately predict future experience for the scheme.

- **Membership extracts**
  A series of snapshots – ideally over a number of years - which provide a listing of all members in force at given dates. This can be summarised or seriatim, although seriatim provides more opportunities for analysis. It will generally include the rating factors required to confirm the premiums paid for a member and their sum insured at the time of the extract.

  This is needed to account for changes in premium rates and sums insured over the history of the scheme (see later questions for detail). It also provides insight into the changing demographic of the scheme which could impact on the trend in future loss ratios. While this can be estimated without this information, it can be done more accurately if the information is available.

- **An historical premium extract**
  An extract of the insurance premiums paid by the scheme over recent years. This is usually split by benefit type (i.e. Death vs. TPD premium), and by month or quarter of payment. In some cases it may be split by additional factors such as particular cohorts within the scheme or by rating factors like age and gender, although this is less common.

  This is needed in conjunction with the claims data to derive a claims loss ratio. Without this information, the pricing actuary would need to either derive premium from other sources (e.g. the membership data) or estimate it based on trends in membership over time – but both cases have sources of error which may lead the actuary to mis-estimate historical trends in experience.

- **Historical product changes**
  A log of key terms and conditions changes over recent years, detailing events like the change in premium or sum insured rates, adjustments or improvements to product terms and definitions, and events such as mergers with other schemes or changes of insurer / administration processes for claim.

  This information is necessary to understand changes in experience over recent years driven by scheme product changes. Without it, the pricing actuary may not be able to explain or adequately account for expected trends in loss ratios.

Students may provide additional points such as claims and underwriting procedures / philosophies, but these are not considered as crucial to the pricing of the scheme as the items above. These minor points would receive half marks.

No marks would be awarded for the following items:

- The proposed product design. The question outline noted that only the current design was requested, so this is not relevant here.
- Details of any income protection cover that might be provided. Only the DTPD portfolio is to be quoted on.

Marking Guide

- **1.0 mark for each piece of information identified and adequately explained. The explanation should explain why the information is important to pricing the scheme to receive the full mark.**
- **Other reasonable points awarded 0.5 marks at the marker's discretion.**

Maximum of 3 marks.

b)

The process described is LotsaLife's process for quoting on Corporate schemes. This would be appropriate for Australian corporate schemes, which (with some notable exceptions) tend to be much smaller than industry fund schemes. Given their small size, experience year on year can be quite volatile – making it difficult to determine what future experience might be for the scheme. The approach suggested makes sense for pricing schemes of this nature, as it allows for a 'prior view' of future incidence to be applied and the historical experience of the scheme to be allowed for after appreciating the low credibility it has from a statistical / predictive standpoint.

However, it is unlikely to be an appropriate approach for the BigOne quote for a number of reasons:

- **Prior view**
  Industry fund schemes tend to have very different experience profiles to corporate portfolios and other schemes, even in similar industries / after allowing for occupation or demographic differences. This can relate to issues with product design, which is generally more bespoke than for corporate schemes. It can also relate to the awareness of

members; corporate schemes have the advantage of HR systems being linked to the insurance in some cases, whereas industry fund schemes are more likely to have 'lost' members who may not be aware they have cover. This makes it less likely that the incidence rates of the corporate book are appropriate in this case.

- **Occupation mixes / data**
  Corporate schemes tend to have much more detail on individual members, including salary and detailed occupation data. This does not generally exist for large industry schemes. It may be difficult to accurately apply the incidence rate tables used for corporate schemes to the industry data.

- **Credibility**
  Given the size of BigOne, it's possible that it has so many claims that it is given full credibility under the corporate process's credibility-weighting adjustments. It's also possible that there are more claims in the BigOne scheme's history than is in the LotsaLife corporate portfolio. In either case, this makes the use of a prior view largely redundant other than for benchmarking purposes.

- **IBNR differences**
  Due to the awareness differences between corporate and industry schemes, it's generally accepted that claim notification is on average faster in corporate than it is in industry fund schemes. This would need to be taken account of when comparing experience between these books of business, which does not appear to be the case in the process as described.

- **Product changes / differences**
  The BigOne scheme has been described as having changes to product terms and conditions over time. This could impact the incidence rate of claims, making historical experience as-is a non-optimal predictor of future experience. This is not captured in the corporate pricing process.

  Similarly, the BigOne scheme likely has product terms and conditions that are inconsistent with the corporate portfolio due to its bespoke nature. If these features aren't accounted for it could lead to misestimation of future claim volumes / amounts.

Marking Guide
- **1.0 mark for each reason and adequate explanation.**
- **Other reasonable points awarded 0.5 marks at the marker's discretion.**
- **1.0 mark should be deducted for students which do not provide an opinion on whether the approach is appropriate or not.**

Maximum of 3 marks, minimum of 0 marks.

c)

Ideally, students will draw on the answers they gave to Question 3(b) in answering this component (i.e. provide responses to issues or enhancements if they decided it was appropriate):

- **Prior View / Credibility**
  Rely on BigOne's own experience in setting future incidence rates rather than using the standard rate table approach. If needed, a prior view could instead be derived from BigOne's industry fund portfolio – although this is unlikely to yield reasonable results due to them being smaller than BigOne and possibly sharing similar issues in terms of occupation mixes and product features.

  While the standard table would not be suitable for setting the level of incidence rates, the shape of incidence by age or other factors might still be useful in benchmarking. BigOne's actual experience by age could be compared against the shape of the wider portfolio to help identify issues in the experience and assess whether there are cross subsidies evident in BigOne's premium rate shape that might impact future loss ratio trends.

- **Occupation Mixes / Data**
  If the standard rate table were to be applied, a more generic approach to applying the tables might be needed with respect to occupation data. This might involve a high level estimate (potentially provided by the fund or from industry statistics) of the proportion of the fund's members being in each of the occupation classes. This could then be applied to generate an aggregate incidence rate over age and gender that could be applied to the scheme's experience.

- **IBNR Differences**
  Investigate BigOne's claim notification experience and incorporate this into the analysis via a bespoke IBNR run-off assumption. This would either being through adjustment to the credibility-weighting process to account for the differences in expected claim notifications, or by incorporating revised estimates of IBNR into the calculation of incidence rates for the scheme.

- **Product Changes / differences**
  An additional uplift adjustment (on top of the credibility-weighting factor) could be made to account for any known impacts on incidence due to product changes. As an example, TPD incidence rates may need to be increased or decreased to allow for loosening or tightening of the TPD definition, or the uplift factor amended to account for the scheme merging with another scheme over time which had different experience / demographics.

Marking Guide

- **1.0 mark for each suggestion with reasonable explanation. This could include points not included above at the marker's discretion.**

Students may instead detail the standard rescaled loss ratio process typically used for quoting on Industry Fund schemes and touched on later in the question. If explained in detail, this should be given full marks – as it's technically an 'amendment' to the existing process (albeit an amendment that completely changes the approach).

Students who instead suggest a simple loss ratio process, without reference to rescaling (or a similar process), should be awarded part marks.

Maximum of 3 marks.

d)

The rescaling of premiums would be achieved by following the following broad steps:

1) **Rescale the units of cover for each member in all member extracts**
   As per the question outline, members who were in force when the design changed would have their units adjusted to ensure their sum insured did not decrease.

   To estimate this, apply the old and new sum insured scales to each member in each extract prior to April 2016 and determine whether their sum insured amount increased or decreased. If it decreased, determine what units would have been required to ensure sum insured did not decrease. This would be the 'rescaled units' used to calculate premiums.

2) **Apply new premium rates based on the new design**
   Multiplying the rescaled units by the new premium rate would provide the premium each member would have paid under the new design. This gives the rescaled premium per member.

3) **Sum the rescaled premiums to estimate the total premium payable as required**

Sense checks:

1) Compare the old and new premium rates by age. Net of all other changes, this will indicate how much more or less each member would have paid for their current number of units. This should provide a sense check for how much the total premium increases or decreases once rescaling has been applied, either by age or in aggregate.

2) Look at average premium paid per member for each year once rescaling has been applied. Unless there have been significant change in member demographics, this should be relatively stable over time.

3) Look at the movement in average number of units pre and post rescaling. This can indicate whether there are expected changes in member demographics that would impact sense check (2). A reasonably stable average number of units is also a sense check of whether the unit rescaling was conducted appropriately.

4) If historical premiums per member were provided, this could be recalculated using the old premium rate scales to sense check that the data is accurate and/or the premium rate calculation you applied was done correctly.

5) Spot check the premium paid by individual members over various years. Does the premium paid for a member move as expected when rescaling has been applied?

Marking Guide

- **Up to 3.0 marks are available for identifying the key rescaling steps:**
  - **1.0 mark for identifying the need to calculate per-member premiums and to sum them to get the total.**
  - **2.0 marks for identifying the need to rescale the units used in the calculation of rescaled premiums per member.**
  - **Students who suggest an alternative or approximative method of achieving this may receive full marks subject to markers discretion.**

- **Up to 3.0 marks for reasonableness checks suggested**
  - **1.0 mark for each reasonableness check suggested and reasonably explained**

Maximum of 4 marks.

e) and f)

There is a large list of options that a student could include. Some possibilities are listed below:

Potential Cause	Investigation Options
Lack of claim / premium rescaling; the trend begins around the same time as the product rescaling. It could be that the trend is genuine and arises out of the changes to sum insured or premium scales, and would have been seen in periods prior if they'd be rescaled to the latest design. This could alternatively be described as cross subsidies being evident in the new premium rate structure which is not in the old structure.	Perform the rescaling and compare the rescaled loss ratio results to the historical loss ratio results. If the trend is evident in all periods, this is evidence of issues with cross subsidies. This could be allowed for in the projection of future loss ratios. If the trend vanishes, and assuming other assumptions had been updated as part of the rescaling, it may suggest one of the other items (e.g. IBNR issues) is the cause. If the same loss ratio shape is seen in the rescaled and historical loss ratios then rescaling is unlikely to be the issue. Alternatively, rather than looking at claim loss ratios, the incidence rate of claims could be investigated. This would eliminate some of the noise surrounding rescaling and possibly confirm whether other issues are the root cause *(* this point could be included in many of the other causes *)*.
Impacts arising from changeover rules; similarly, the issue may be the result of in force members retaining or increasing their cover post-sum insured changes. It may have led to a larger portion of premiums being allocated to cohorts with worse experience.	Similar to the above, this can be investigated by applying rescaling. Alternatively, the historical experience could be investigated in tranches. E.g. the loss ratios for bands of ages over time. If there are clear changes in loss ratios before and after the changeover for certain groups, it could be an indication that the changeover rules specifically are a factor. This could also be noted if the proportion of premium or claim amounts by ages shifts noticeably. Finally, a check of the average sum insured of members and claimants could help uncover this. If the average sum insured after the change is significantly higher than default, it may lead to the changeover rules being an important aspect of the experience.

Potential Cause	Investigation Options
Changes in IBNR run-off in more recent periods; the period experiencing the trend is recent, where loss ratios are mostly comprised of IBNR reserves. If there was a speeding up of IBNR run-off in recent periods, this would cause overstatement of IBNR resulting in the observed experience. A related issue would be changes in average claim sizes by notification delay arising from the change in sum insured scales. This could cause similar issues.	Rerunning the IBNR using different IBNR methodologies (i.e. alternatives to the chain ladder) or looking at changes in development factors over different incurred years would help confirm whether the pattern of notifications is changing. A similar approach could be taken to average claim sizes, although regenerating average claim size assumptions on historical vs. rescaled sums insured might tease this out also.
Impact of changing TPD definition; the Fund recently changed their TPD definition. If this was mispriced, or if the impact of that change was not estimated correctly, this could lead to worsening TPD experience or feed into issues related to the IBNR as described above.	Help from a product analyst or claims staff would help to confirm this. A detailed version would be to look at a sample of TPD claims before and after the change to determine if additional claims are being accepted that wouldn't have been previously. Alternatively, if experience related to a similar definition change in another scheme is available, this could be proxied and compared to the experience of BigOne to see if it fits the pattern observed.
Changes in claims handling procedures; this could impact both IBNR run-off and general claim incidence. If claim handling practices have changed it could lead to quicker claim notifications, changes to the way claims appear or are handled in the data, or could lead to higher claim incidence (e.g. due to loosening standards related to claim declinature). A similar issue would be environmental changes in terms of legislation or the industry BigOne operates in, which could restrict claim handling practices.	Getting an understanding of any notification pattern changes, and then tracking claims through the data as they move through this process, would be the most definitive way of determining whether this is a cause. A claims manager would be able to help with this exercise. Similarly, collecting information from claims staff or legal experts on legislative or industry changes affecting notifications could provide insight into whether this is a likely cause.

Potential Cause	Investigation Options
Changes in member awareness / apathy; this has been a common comment in the industry over recent years. It could be driven by changes in the way BigOne communicates with its members about insurance, or increased advertising by lawyers in the industry BigOne operates in. This could encourage changes in IBNR or increases in claim volumes. A similar issue would relate to changes in socioeconomic factors like increasing unemployment in the industry BigOne operates in.	This is more difficult to confirm, as causation is difficult to prove. One option might be to look at the proportion of claims with legal representation (if this is available) or look at the correlation between spikes in notifications of claims and advertising spend / communication timing for BigOne or other involved parties. Looking at underemployment or unemployment rates may also provide insight in to whether there is a correlation between this and notification volumes.
Shock events or changing occupational hazards; the emergence of industry-specific issues could cause BigOne's claims to increase. For example, if BigOne's membership was predominantly construction based and an illness or condition arose from changes in working conditions, this could result in increased TPD claims.	Investigating changes in the proportion of admitted claims by cause of claim – either for specific illnesses or broader categories – may help to confirm this. Chief Medical Officers, Product Analysts, and Claims/Underwriting staff may be able to help with this investigation.
Changing member demographics; if BigOne had extended into new employer groups or industries, the new members entering the fund might be leading to worsening claims experience.	Investigating proportions of key demographics over time – and specifically around the change in experience – could provide insight into this. A more analytical approach may involve deriving a benchmark incidence rate from BigOne's experience or the Corporate portfolio and looking at how aggregate incidence based on this benchmark changes over the course of the investigation period. This wouldn't require the incidence rate to be a perfect representation of the scheme's experience to be effective; only for it to reflect the various risks of different cohorts so that relative changes in the aggregate make-up of the fund over time can be more easily identified.

Potential Cause	Investigation Options
Natural volatility in experience; where IBNR run-off is slow, loss ratios are more sensitive to natural variations in claims from quarter to quarter. While this seems unlikely to be the sole issue given the nature of the trend, it could be part of the issue.	Applying confidence intervals to the loss ratio charts (or incidence charts, if this approach is taken) could help determine whether the trend is outside of what might be expected given the low number of claims admitted for recent periods. Alternatively, applying a prior-view reliant IBNR method (e.g. the Bornhuetter-Ferguson method) and recalculating loss ratios may help understand to what extend volatility is playout out in the experience.
Increasing anti-selection; the changes to product terms may have resulted in changes to eligibility, voluntary cover options, or optional cover increase options. If this were the case, it could have led to increased opportunities for anti-selective claim behaviour.	Detailed investigation of the product changes would be required to rule this out. It may involve estimating the impacts on claims for different product changes and adjusting the claims experience accordingly to determine if it explains the trend. Alternatively, investigating incoming claims and determining to what extent they would have been admitted (or whether sum insured paid would be lower) if those product changes hadn't been made may help here.
Errors in the data supplied or technical errors in the analysis conducted. This is always a possibility so should be listed here.	Technical and peer review of all work should be conducted to rule this out. Sense checks and spot checking of input data could be conducted. There is usually allowance for questions to be answered on the data as part of the RFP process which could help with this. If LotsaLife has engaged a reinsurer for the quote, they could provide a benchmark in terms of loss ratios that could help tease out significant errors or judgement issues.
Combinations of the items listed above	To the extent that individual causes don't fully explain the variance, they could be combined and adjusted for individually. This would slowly reduce the unexplained trend to reasonable levels, at which point decisions could be made about how to proceed given the issues identified.

Marking Guide – Question 3 (e)

- **0.5 mark for each potential cause identified**
- **Additional marks should be allotted for the following:**
    - **0.5 mark for including a cause that acknowledges the trend begins around the same time as the product changes**
    - **0.5 mark for including a cause that acknowledges that IBNR reserves are highest in the periods experiencing the trend (i.e. it may not be credible)**

Maximum of 4 marks.

Marking Guide – Question 3 (f)

- **Up to 1.0 mark for providing a reasonable option for investigating each cause.**
- **Half marks may be granted for insufficiently explained or less effectual investigations at the marker's discretion, but a student would need to provide options for at least six causes to be able to achieve full marks for this question.**

Maximum of 7 marks.

g)

- **Claims staffing costs:** the size of the scheme would likely require a dedicated claims team to manage it. This might also lead to additional office space and equipment being required to house these employees.

- **Administrative setup costs:** the size of the scheme might mean LotsaLife has to implement new processes or systems to be able to handle the volume of claims and manage the scheme effectively. This would involve both the initial setup costs of on-boarding the scheme, but may also require new systems to be designed or upgrades to existing systems.

- **Product, pricing, and business development costs:** ongoing management of the scheme will require additional product, pricing, and business development analysts / experts. Given the scheme is so large, it's likely LotsaLife will need to devote a lot of attention to it. While fewer in number compared to the claims staff, the product/pricing/business development staff are generally higher paid so would make up a reasonable portion of marginal expense.

- **Back-office costs:** this would involve other aspects not included in the administrative costs. Items like building the processes to model and value the business (it may be modelled differently to the existing portfolio given the nature of the scheme), the completion of any regular reports or analysis requested as part of the management of the scheme, etc.

Note that since this is a group scheme, it's unlikely that a significant expansion of underwriting staff would be required unless the scheme has a high volume of voluntary cover.

Marking Guide

- **1.0 mark for identifying claims staff as a significant source of additional expense**
- **0.5 mark for other items relevant to the BigOne tender.**
- **Students should not be given marks for generic answers that aren't tied back to the context of the question.**

Maximum of 2 marks.

h)

Arguments in favour of marginal expenses:

- Would make the pricing more competitive, increasing the likelihood of winning the tender.

- Group tenders are usually for a specific term (e.g. 3 years). If LotsaLife is able to satisfy the trustees of the scheme over its first term, it could rerate the scheme to allow for full expenses in future rates.

- Large group schemes are a risk for expense budgeting, as if a scheme lapses it can take a large portion of revenue with it overnight. LotsaLife has other portfolios which are less susceptible to dramatic falls in revenue (i.e. the legacy portfolio and the corporate portfolio). If these portfolios are already meeting fixed expenses, they should be able to continue doing so at least over the short term – reducing the need for BigOne to contribute to those expenses.

- Being competitive and winning a large scheme may open LotsaLife up to additional opportunities in the industry space. This would provide more opportunities to expand the portfolio in the future which would similarly provide more options for meeting fixed expenses.

- In the event that there is an issue with fixed expense coverage after winning BigOne, the profit margins included in the quote provide a mechanism for funding them. This favours winning the quote and hence using marginal expenses.

- The existing approach of using a full expense basis makes sense for LotsaLife's existing portfolio, which is made up of a large pool of smaller schemes. However, the BigOne quote is a unique opportunity – so not applying that same approach here is justifiable.

Arguments against using marginal expenses:

- The scheme is likely to attract a lot of time and resources from management and services included in general overhead. As such, it would make sense for the scheme to contribute a reasonable portion of these expenses.

- If the scheme is won on a marginal expense basis, but valued on a full expense basis, there will be a mismatch between the reported profits of the scheme and the expectations laid out in pricing.

- A marginal basis leaves less buffer in the pricing in the case that actual expenses exceed expectations, or in the case that other parts of LotsaLife's portfolio decline quicker than expected (e.g. the run-off of the legacy portfolio being faster than expected). Similarly, run-off of other parts of the portfolio may be expected to produce an expense strain which new business (like the BigOne portfolio) will be expected to cover.

- Plans to increase the premium at future reviews to incorporate full expense bases may anger the client and lead to early loss of the scheme.

- Similarly, if LotsaLife increases the premium rates at the first review after implementing the scheme, it may send a message to other potential clients that LotsaLife is loss leading and that they should expect rates to rise if they were to switch their insurance to them.

Marking Guide

- **0.5 mark for each argument adequately explained.**
- **Maximum of 2.0 marks for pros and 2.0 marks for cons.**

Maximum of 4 marks.

END OF MARKING GUIDE: QUESTION 3

END OF MARKING GUIDE