

Actuarial Society of South Africa

EXAMINATION

24 October 2017

Subject A302 — Communications

Time allowed: Three hours

INSTRUCTIONS TO THE CANDIDATE

1. *You will receive instructions to log in using a password which will be issued to you at the exam centre.*
2. *Enter all the candidate and examination details at the beginning of each question. Ensure that your Candidate number appears at the top of each page handed in. [Select “Insert”, then “Header”, input your candidate number on blank header template and select “Close Header”].*
3. *Save your work throughout the exam on your computer’s hard drive.*
4. *You have 15 minutes at the start of the exam in which to read the questions. You are strongly encouraged to use this time for reading only, but notes may be made. You then have three hours to complete the paper.*
5. *You must not start typing your answers until instructed to do so by the invigilator/supervisor.*
6. *Mark allocations are shown in brackets on exam papers.*
7. *Attempt all questions, beginning your answer to each question on a new page.*
8. *You should show calculations where this is appropriate.*
9. *Add your word count to the bottom of Question 1. Include words in graphics tables.*

Note: The Actuarial Society of South Africa will not be held responsible for loss of data where candidates have not followed instructions as set out above.

AT THE END OF THE EXAMINATION

Save your answers on the hard drive.

Hand in your question paper with any additional sheets firmly attached.

<p><i>In addition to this paper you should have available the 2002 edition of the Formulae and Tables and your own electronic calculator from the approved list.</i></p>
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QUESTION 1

You are a marketing actuary at LifeCo, a large life insurance company. You have received the following email from one of the brokers that you have recently trained about the amended wellness programme that complements all the products.

From: Bongani Themba <bthemba@abcbrokers.co.za>

Date: 22 October 2017 at 15:35:52

To: Andy Murray <a.murray@lifeco.co.za>

Subject: Mr D Chrisholm – Further Enquiry about claims underwriting based on wellness assessment results

Hi Andy

I saw Dan Chrisholm this morning following our previous correspondence. He is still not satisfied with the information he has received from us so can you help me further? He requires more official confirmation of the underwriting process, and how it relates to the wellness programme, than an email from an employee of LifeCo. He has asked that the information be sent to him in a formal letter that he can keep with his policy documentation in case any issues arise at claim stage.

His main concern is that the initial assessment of the Wellness Programme can affect his claims at a later stage. As far as he can tell from the documentation and contracts, there is no evidence to the contrary. The email he received from you is, to his mind, just an individual opinion.

He is also concerned that I have placed all his life and disability cover with one insurer and that there is no spread of the risk. He is concerned that his current life cover at LifeCo is very high and, as a result, should a claim arise, that LifeCo will submit him or his beneficiaries to high levels of claims underwriting in order to avoid or delay paying such a large amount all at once. He thinks that the claims will be paid faster if the total cover is spread across a few insurers. Can you help me by outlining the claims procedure and LifeCo's recent claims experience to put his mind at ease?

He has asked that I provide all the necessary documentation by 15 November 2017. I really appreciate your help in this regard and include your previous email about this issue below.

Regards

Bongi

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Begin forwarded message:

From: Andy Murray <a.murray@lifeco.co.za>

Date: 6 October 2017 at 11:49:42

To: Dan Chrisholm <dch@gmail.com>

CC: Bongani Themba <bthemba@abcbrokers.co.za>

Subject: Dan Chrisholm – Wellness Programme

Good day Mr Chrisholm

Thank you for your query regarding whether or not poor Wellness Programme initial results will affect your claim or your initial underwriting. Please note that Wellness Programme results will not affect your underwriting decision or your ability to claim.

Regards

Andy Murray

Marketing Actuary

Notes:

- Your previous correspondence with the client regarding the initial assessment of the Wellness Programme is correct.
- The Wellness Programme provides policyholders with the opportunity to earn discounts on their life insurance premiums. Qualification for entry to the programme requires an initial assessment performed at application stage, in addition to the standard underwriting procedures and acceptance of cover. Online re-assessments are required every two years to retain the initial discount offered.
- Mr Chrisholm currently has the following cover in place at LifeCo:
 - R 20 million death benefit
 - R 3 million disability benefit
 - R 5 million critical illness benefit
- LifeCo strengthens its ability to meet claims by implementing risk management strategies and ensuring that it complies with the solvency requirements of the Regulator as well as the regulation in place to protect policyholders (such as Treating Customers Fairly).
- These risk management strategies include reinsurance with global reinsurers.
- The current Capital Adequacy Ratio for LifeCo (at 30 June 2017) is 3.2, which is the ratio of the available capital to the minimum capital requirements of the Regulator.

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Notes (continued):

- You have also received the following information from the claims department, which is published annually:
 - Claims Statistics for 2016

	Death Claims	Disability Claims	Critical Illness Claims
Largest individual claim paid	R 45 million	R 15 million	R 7 million
Total claims paid	R 3 billion	R 420 million	R 380 million
Repudiated claims (as a % of total claims paid)	1.2%	1%	0.75%
Claims where the client did not meet the definitions* and no payment was made (as a % of total claims paid)	4.2%	2.8%	3.6%

* Not meeting the definitions refers to a misunderstanding of the cover provided, not meeting medical conditions or fraudulent claims.

- Reasons for repudiated claims were suicide (22%) and non-disclosure (78%).
- None of the unpaid claims were reported to the Ombudsman.
- LifeCo's experience has shown that membership of the Wellness Programme indicates a lower mortality rate than otherwise expected.

Draft a letter on an official letterhead to Mr Chrisholm of between 575 and 625 words, addressing his concerns. Start the count below the salutation and end above the sign-off and close.

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QUESTION 2

You mentor business studies for school students. When they were in grade 11, they started an entrepreneurship project, Learn2Grow, to raise funds to buy airtime vouchers at the end of the school year. To encourage entrepreneurship, the school agreed to allocate the students a small plot of unused school ground on which to grow vegetables, which they sell to the local spaza shop for a profit.

They are continuing with Learn2Grow in matric so that they can buy more airtime vouchers at the end of this year, which is in 40 weeks' time. They grow and sell 10 butternuts each week. Each butternut costs R4 to grow and is sold for R7.

You have noticed that the spaza shop does not yet sell cauliflowers. Cauliflowers cost R6 each to grow. You have visited the spaza shop and discussed the possibility of selling cauliflowers with the owner. She is open to the idea and is prepared to buy one cauliflower a week for R12,50. She could buy more cauliflowers, but is then prepared to pay less for each of the cauliflowers as she would not be able to sell them all at such a high price. After thinking about it, she is prepared to buy the following quantities of cauliflowers per week at the following prices:

Quantity prepared to buy	1	2	3	4	5	6	7	8	9	10
Price per cauliflower bought	R12,50	R12,00	R11,50	R11	R10,50	R10	R9,50	R9	R8,50	R8

You have worked out that, if Learn2Grow starts to grow some cauliflowers in place of some butternuts, they would be able to raise more money than they currently do. You briefly mentioned this opportunity to Learn2Grow members during your last mentoring session. However, they seemed comfortable with their current way of doing things and unsure whether selling a mix of butternuts and cauliflowers would be more beneficial than just selling butternuts. They agreed to meet you after class tomorrow, on 12 March 2017, to hear what you have to say and discuss the idea.

You have started to think about drafting a presentation and your first three rough slides are included below. Other approaches to these slides may be equally valid as this is just a first draft. Adapt these slides as you see fit and complete the presentation of 9 to 11 slides (in total). Your aim is to present the opportunity and persuade them that they would raise more money if they switch some of their farming from butternuts to cauliflower. You understand that, if they were prepared to change, they would like to know how many of each type of vegetable they should grow to raise the most money.

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Notes:

- You can assume that they understand the terms “cost”, “profit” and “sales income”, as well as the need to maximise total profit and not total sales income.
- Learn2Grow can grow and sell a maximum of 10 vegetables a week because of their small plot of land.
- One cauliflower can be grown in the place of one butternut in the same amount of time and space.
- The cost to grow each butternut does not vary with the quantity grown, nor does the sales price per butternut vary with the quantity sold.
- The cost to grow each cauliflower does not vary with the quantity grown.
- The spaza shop is prepared to buy any mix of butternut and cauliflower from Learn2Grow each week.

Potential to raise more airtime money

Butternut is not best

To: Learn2Grow participants
By: Val Unteer
Entrepreneur Mentor

March 2017

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Topics to be covered

- Current profit situation
- How profits differ
 - High level differences
 - Cauliflower specifics
- Profit changes depending on combo of butternut and cauliflower sold
- Profit per all weekly sales combinations
- Profit maximisation
- Summary and questions

Current profit situation

State Learn2Grow aim

Recap economics of L2G

- Cost
 - Sales price
 - Profit
 - Profit for selling 10
- } single sale

Introduce increased profit proposal

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END OF EXAMINATION