

EXAMINATION

18 October 2021

Subject F202 — Life Insurance Specialist Applications

Time allowed: Three hours and fifteen minutes, plus an additional five minutes to allow for uploading your file in the ASSA Exam Platform

Total marks: 100

INSTRUCTIONS TO THE CANDIDATE

- 1. Ensure that you are logged in and authenticated through Examity before you attempt the examination.*
- 2. Ensure that you have your candidate number handy to input as part of the examination.*
- 3. Questions are only available in the ASSA Exam Platform and may not be printed. Copy/paste of questions or parts thereof is only allowed between the Exam Platform and the Word answer document.*
- 4. You will be provided with a Word template to access and use to complete your questions. You may only use the file provided to you. No other file from your PC may be accessed.*
- 5. Ensure that your Candidate number appears in the Header of your Word template. [Select “Insert”, then “Header”, input your candidate number on blank header template and select “Close Header”]. DO NOT USE YOUR NAME OR MEMBER NUMBER ON YOUR ANSWER SCRIPT.*
- 6. You may not use any other computer program (e.g. Email or Excel), nor open any other browser during the examination.*
- 7. You may not make use of a Formulae and Tables book during the examination. Any such information that may be required will be provided to you within the examination.*
- 8. You are strongly encouraged to use the first 15 minutes as reading time only, however, you may commence answering the paper whenever you are ready.*
- 9. Mark allocations are shown in brackets.*
- 10. Attempt all questions.*
- 11. Show calculations where this is appropriate. You may use blank paper to carry out rough work calculations. You may use a calculator from the approved list only.*
- 12. Upload your answer file into the ASSA Exam Platform BEFORE the examination time expires.*

13. *Once you have added your file, you MUST click on FINISH ATTEMPT to save your file. You will still be allowed to go back and make changes (REVIEW ATTEMPT) if you have time.*
14. *Once you are satisfied with your uploaded file, click **FINISH ATTEMPT** and **FINISH ALL AND SUBMIT** whereafter you will not be able to make more changes. Take this into account when finishing early - once you have submitted, you will not be able to make any more changes to your answers.*
15. *It is the candidate's responsibility to ensure that all work is submitted BEFORE the end of the examination time. Take this into account when planning your review and submission. There will be no time announcements.*
16. *An option to opt out of the exam will become available 1 hour after the official exam start time. If you select the Opt-Out option, you agree and understand that your entire script/answers will be deleted and cannot be retrieved at a later stage and that your script or part thereof will not be put forward for marking.*

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.

END OF INSTRUCTIONS

QUESTION 1

A South African life company started five years ago. The company writes a full range of lump sum risk products on a level premium basis. The company provides these products on an individual and group basis. It has grown steadily since starting.

The company is performing the annual Analysis of Surplus (AOS) as part of the reporting for the year-end period. The surpluses that arose from the regular sources are being compared to the prior year-end surpluses and there are significant differences for some of the regular sources. The AOS is being performed on an IFRS basis with the projection approach.

Additional information:

- The mortality experience was materially worse than prior years.
 - Other risk experience was similar to prior years.
 - The company reduced their sales force and number of underwriting staff during the year in a move to try and sell more policies through direct channels.
 - The company wrote the same amount of new business during the year compared to the prior year.
 - The company has been experiencing poorer persistency than expected since starting and has decided to adjust the lapse assumption in the reserving basis at the end of the year.
 - The company is mostly invested in government bonds of various durations.
 - The yield curve shifted downwards during the year.
- i. Discuss the differences you would expect to see between the two years' AOS reports by source of surplus and state how the total surplus is expected to compare between the two years.

[25]

The company wants to introduce an Income Protection product. It is however concerned about the insurance risks and potential volatility that this product will introduce. To mitigate some of these risks various reinsurance solutions are being considered. In terms of reinsurance structures, the company has decided to look for possible reinsurance cover on the following bases:

- A quota-share with 50% of each risk ceded.
- A surplus structure with cover amounts in excess of R25,000 a month ceded for each risk.
- A structure where the reinsurer assumes the full liability for each claim once it has been in payment for 24 months.
- A surplus structure based on an agreed reserving basis. The reinsurer will pay a lump sum for the portion of any claim reserve value that exceeds R1.5 million at point of claim.

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- ii. Set out the risks the company would be looking to mitigate through these structures and describe the advantages and disadvantages of each of these structures.

[20]

The company also wants to introduce different premium payment patterns for the lump sum product range. In addition to the level premium structure it currently offers, it also wants to offer an age-rated premium structure. The premiums will increase each year in line with the increases in the underlying decrement curve.

- iii. Outline the potential consequences of this change that the company would need to consider.

[5]

[Total 50]

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QUESTION 2

A large South African life insurer sells the following products:

- Established book of non-profit immediate annuities with payments increasing by the Consumer Price Index (CPI); and
 - Newly launched whole of life risk product which includes life cover offered on either a level premium or age-rated payment pattern.
- i. Describe how you would determine the insurance liabilities for this insurer for the purpose of Published Financial Reporting.

[13]

A valuation report has been presented which indicates that the whole of life risk product is loss making at point of sale and the non-profit immediate annuities are profitable at point of sale.

A pricing actuary has questioned this. According to their calculations (which use the same underlying projection model and consistent assumptions for each product) both the products are profitable.

- ii. Discuss the possible reasons for different conclusions being reached.

[6]

The pricing actuary has questioned how particular methodology choices allowed within the Published Financial Reporting framework can impact the insurance liabilities and profit recognition profiles over time for each of the products.

- iii. Describe and explain the likely shape of the insurance liabilities and profit recognition profile for each of the products over time, assuming experience emerges as expected from point of sale.

[24]

The regulator is in the process of reviewing the guidance under the Published Financial Reporting framework and is concerned by the level of variability in profit recognition profiles which could emerge between different insurers selling identical products.

The regulator has proposed an alternative Financial Reporting Standard which seeks to align the recognition of profit more between insurers.

- iv. Discuss the impact of such a proposal on the key stakeholders.

[7]

[Total 50]

[Grand Total 100]

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