

EXAMINATION

19 October 2023 (am)

Subject F202 — Life Insurance Fellowship Applications

Time allowed: Three hours and twenty minutes (which includes five minutes for downloading and uploading your answer document)

Total marks: 100

INSTRUCTIONS TO THE CANDIDATE

1. Ensure that you are logged in and authenticated through Examity before you attempt the examination.
2. The question paper is only available in the ASSA Exam Platform as a PDF download and may not be printed. Copy/paste of questions or parts thereof is allowed from the question paper to your Word answer document only.
3. Download the Word answer document template from the ASSA Exam Platform. Save this Word answer document on your desktop using your Candidate Number as filename. You are required to submit your answers in Word format ONLY using this document. No answers in any other format (e.g., handwritten) will be accepted. Save work regularly.
4. Ensure that your Candidate Number appears in the “header” of your Word answer document. [Double-click on the header at the top of the Word document, input your Candidate Number only in the header, then press “Esc” to close the header.] **Do not use your name or member number anywhere in your Word answer document.**
5. You may not access any file from your computer, use any other computer program (e.g., Email or Excel), or open any other browser during the examination. The use of Grammarly and Grammarly Premium or similar is also not permitted in examinations.
6. You may not use any other material (e.g., a Formulae and Tables book) during the examination. Any such information that may be required will be provided to you within the examination.
7. You are strongly encouraged to use the first 15 minutes as reading time only, however, you may start answering the paper whenever you are ready.
8. Mark allocations are shown in brackets.
9. Attempt all questions.
10. Show calculations where appropriate. You may use blank paper to carry out rough work calculations. You may use a calculator from the approved list only.
11. Upload your Word answer document only into the ASSA Exam Platform. Once you have uploaded your document, you must click on **Finish Attempt** to save your document. You will still be allowed to go back and make changes (**Review Attempt**) if you have time.
12. Once you are satisfied with your uploaded document, click **Finish attempt** and **Finish all and Submit**. Once you have submitted you will not be able to make any changes.
13. **You must submit your Word answer document BEFORE the end of the allotted examination time.** You must stop writing and start uploading during the last five minutes. Take this into account when planning your review and submission. There will be no time announcements.

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 insurance company is assessing its financial performance for the last financial year. It has prepared the regular published and regulatory reporting as well as the embedded value reports.

A board member has looked at the published reporting profit and compared it to the change in surplus under the Solvency Assessment and Management (SAM) framework and the change in embedded value. She has questioned which of these metrics is a better profit measure and has queried why the three results are not similar.

Outline the differences between these three metrics in terms of considering them as profit measures and why their results could be different.

[Total 15]

QUESTION 2

A South African insurance company has a large amount of accumulated tax credits from previously written business.

- i. Explain how the accumulated tax credits can be used for the benefit of the company and the policyholders of a savings product and note any practical limitations that would apply. [9]

Section 18 of the Tax Amendment Act No:20 of 2021 limited the assessed loss that a company can carry forward from the preceding year of assessment, to the higher of R1 million and 80% of the amount of taxable income. The rate of corporation tax was also changed from 28% to 27%.

- ii. Discuss possible steps the company could take to counteract the change in profitability that would result from these changes and any issues that may be encountered in implementing them. [9]

[Total 18]

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QUESTION 3

The Solvency Capital Requirement (SCR) under the Solvency Assessment and Management framework (SAM) reflects the amount of own funds that an insurance company must hold in order to survive a 1-in-200 year loss event.

FSI 4.2 states “*Catastrophe risk for life insurance obligations is the risk of loss, or of adverse change in the value of insurance obligations, resulting from extreme or irregular events whose effects are not sufficiently captured by the other risk components of life underwriting risk. Examples of catastrophe risk in the context of life insurance include pandemic events or nuclear disasters.*”

A South African life insurance company is considering its capital requirement emerging from the life catastrophe risk component of the standard formula and the associated cost of this capital, and how this is included in pricing.

Considering the recent pandemic and other emerging risks, a query has arisen as to whether the required capital for catastrophe risk for the company (as determined by the standard formula) is appropriate. Furthermore, whether the company should include a charge directly in the mortality pricing basis to recover the expected mortality costs of pandemic and catastrophe events over time, rather than just through a cost of capital charge.

- i. Outline at a high-level approaches you could take in assessing the potential additional mortality charge for these events. [10]

After an investigation, it has been decided that an additional charge will need to be added to the mortality premiums to cover the cost of these events over time.

- ii. Discuss the factors that need to be considered before changing premium rates for pure risk mortality business and how this would differ for group, term assurance and whole-of-life assurance business [15]

The insurance company has decided to implement the increase immediately on all new policies sold and as soon as possible for existing policies. For published and regulatory reporting purposes the company is debating whether the increase should be treated as an extra margin in the premium or as an adjustment to the best estimate mortality rate.

- iii. Outline the impact of each of these approaches under IFRS 17 and under the Solvency Assessment and Management (SAM) framework. [13]

[Total 38]

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QUESTION 4

A South African reinsurance company is considering a financing reinsurance transaction for a life insurance company in the domestic market. The deal will involve the reinsurer reinsuring 50% of a tranche of pure-risk life insurance policies on a quota share (QS) basis and paying a lump sum commission when the deal commences. The repayment of the financing will be achieved through an additional charge on each life policy reinsured while it is still in-force.

- i. Outline the major risks that the reinsurer is exposed to through this transaction. [6]
- ii. Set out the assumptions that the reinsurer would require for pricing this transaction and briefly describe how it would go about setting the assumptions. [8]

The tranche of mortality business being considered for this transaction is all life insurance policies sold by the company over a period of time. This includes funeral and fully underwritten whole-of-life policies on a range of premium patterns.

- iii. Describe how this product mix would impact the assumption setting process. [5]

The company is assessing the proposal from the reinsurer. As a check it has decided to compare the upfront commission proposed by the reinsurer to the VIF of this tranche of policies that is calculated as part of its' embedded value. Because the reinsurer is reinsuring 50% of the tranche the company expects the commission to be 50% of the total VIF for the tranche.

- iv. Explain whether this is a useful check to perform. [10]

[Total 29]

[Grand Total 100]

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END OF EXAMINATION