



EXAMINATION

15 October 2024

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

Failure to adhere to any of these instructions could incur examination sanctions.

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. Do not use your name and/or member number anywhere on your answer script.
4. 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.
5. 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.
6. You are allowed to access the material uploaded in advance to your personal open book file storage area on the ASSA Exam Platform. Remote access to materials is not allowed, e.g. any other application (incl. Excel), email, cloud storage, internet, LLMs (Large Language Models)/any AI tools or social media. Copy/paste from your uploaded material to your Word answer document is NOT allowed.
7. The use of Grammarly and Grammarly Premium or similar add-ins are not permitted in examinations. Microsoft Word spellcheck is allowed.
8. 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.
9. Mark allocations are shown in brackets.
10. Attempt all questions.
11. Show calculations where appropriate. You may use blank paper to carry out rough work calculations. You may use a calculator from the ASSA-approved list only.
12. 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.
13. 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.
14. **You must submit your Word answer document BEFORE the end of the allotted examination time.** You should 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.

The onus remains on you to read and implement all examination instructions.

END OF INSTRUCTIONS

QUESTION 1

A South African life insurance company sells a range of disability income risk products that are reinsured on a surplus basis. Due to the implementation of IFRS17 the company decided to implement a new claims and administration system.

- i. Outline the reasons why the company would change systems. [5]
- ii. Discuss the checks the valuation team would need to carry out before signing off the new system. [3]

The company is considering recapturing the reinsurance of the current in-force book of active policies and the disability income claims in payment reserves. If the company recaptures the reinsurance, then they will retain the full liability for both the active policies and claims in payment so that no further risk is ceded to the reinsurer.

- iii. Discuss the factors the company needs to consider before recapturing the reinsurance. [10]
- iv. Outline how the reinsurance company would determine:
 - a. the reserve transfer for the disability claims in payment reserves and
 - b. the recapture fee for the current in-force book of active policies.

[6]

[Total 24]

QUESTION 2

A South African company works in the funeral services industry and has acted as a distributor of funeral policies for several insurance companies. It has decided to investigate the option of being able to insure these policies itself and start a life insurance company. The intention would be to expand to small life insurance policies with sums assured up to R250k and potentially savings products as well. The company is researching this and is aware that it can apply for a life insurance license or a micro-insurance license.

Briefly explain the advantages and disadvantages of the company applying for a micro-insurance license as opposed to a life insurance license.

[Total 10]

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QUESTION 3

A South African life insurance company specialises in group risk business. It provides group death, lump sum disability and income protection products. The company is currently completing its annual supervisory reporting which it does using the standardised formula approach.

Over the course of the year being considered the following occurred:

- Losses were made due to termination rates being lower than expected.
- Best estimate termination rates were reduced as result.
- Government bond yields increased.
- A large group covered by the company that makes up a significant share of its total cover is under-priced and a loss component under IFRS17 has been set up.
- The company has invested in a larger sales force.
- Business grew significantly over the year.
- A stop loss reinsurance treaty was set up for the death benefits.

- i. Describe the expected impact of the above events on the solvency cover of the company.

[21]

One of the large groups insured by the life insurance company has merged with another company forming a larger group. The group wants the same group death benefits to be offered to the additional staff members of the new group. Because the benefits are the same the group is expecting the cost per employee as a percentage of salary to be the same. The life insurance company has provided updated premiums which have resulted in a significantly increased cost per employee as a percentage of salary.

- ii. Explain why the cost per employee as a percentage of salary could have increased.

[7]

Due to the increased size of the merged companies and the increased costs, the company is considering self-insuring the death benefit offered. One option that has been suggested is to set up a cell captive to do this.

- iii. Set out the factors that would need to be considered in assessing this option.

[8]

[Total 36]

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QUESTION 4

A South African life insurance company sells investment products that have smoothed bonus portfolios as an investment option. There are two smoothed bonus portfolios the client can choose between. Both declare monthly bonuses. However, only 80% of Portfolio A's bonus vests every month, whereas the bonus for Portfolio B is fully vesting. Portfolio B has a higher fee for guarantees, but other fees are the same for the two. The products are now valued under IFRS17.

Under IFRS4, the savings policies were valued retrospectively. The reserve consisted of the value of policyholder accounts accumulated at declared bonuses (book value) and a bonus stabilisation reserve, which is the difference between the unit fund (market value) and the book value.

- i. Explain the difference between the allowance for future bonuses in the calculation of policyholder liabilities under the IFRS4 valuation and the IFRS17 valuation.

[8]

For both products the monthly bonus is calculated by determining an expected long-term investment return net of fees (j) and making an adjustment for the funding level ($fnlv$) of the portfolio (market value/book value), with the aim of achieving a funding level of 102% in 24 months, according to the following formula:

$$\text{Monthly bonus} = j + (fnlv - 102\%)/24$$

It has been suggested that since the IFRS17 policyholder liabilities do not have an explicit funding level, the actual bonuses be changed to be the same as those used in the IFRS17 valuation.

- ii. Discuss the suitability of this proposal.

[10]

A new investment product (Product C) has been proposed, which is similar to Product B, but has higher fees and a reward bonus. The extra fees are invested separately and distributed to policyholders as the reward bonus. The reward bonus is added to the member account at the end of every 5 years. It is described as "additional investment profits made during the period" and is discretionary. It cannot be negative.

- iii. Discuss the advantages and disadvantages to the company of launching this product.

[6]

- iv. Discuss the additional responsibilities of the Head of Actuarial Function (HAF) that Product C brings over Product B.

[6]

[Total 30]

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END OF EXAMINATION