



EXAMINATION

16 May 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

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 add-ins are also not permitted in examinations. Microsoft spellcheck is allowed.
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 ASSA-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 sells only lump sum mortality and lump sum disability risk products to people with average or lower incomes who are living with HIV/AIDS. The company is investigating the possibility of adding disability income products for people living with HIV/AIDS to their portfolio.

- i. Outline the factors the company would need to consider in designing and pricing the disability income product for people living with HIV/AIDS.

[12]

Before finalizing the product, the company requests that the Head of the Actuarial Control Function reviews and expresses an opinion on the product and pricing for the proposed contract development.

- ii. Outline the responsibilities of the Head of the Actuarial Control Function in expressing an opinion on the product and pricing of the product as stipulated in Prudential Standard GOI 3 Risk Management and Internal Controls for Insurers and what this means for the review.
- iii. Describe the professional responsibilities of the Head of the Actuarial Control Function regarding the selection and appropriateness of assumptions and methodologies used in the actuarial models for the proposed contract development.

[8]

[Total 25]

QUESTION 2

A South African life insurance company has been performing Market Consistent Embedded Value (MCEV) calculations for several years. From 1 January 2023, the company would have been required to complete published financial reporting using IFRS 17. Both these bases are market consistent bases.

- i. Discuss the primary differences between calculating insurance liabilities under IFRS17 and MCEV.

[12]

The company has an MCEV basis that it has used for the last 10 years and is considering using this as starting point for calculating the cashflows needed for IFRS17.

- ii. Outline the practical considerations when moving from a MCEV liability calculation methodology to an IFRS 17 liability calculation.

[8]

[Total 20]

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QUESTION 3

Three large life insurers who have published their Annual Financial Statements, including a comparison between IFRS4 and the transition to IFRS17. The balance sheets are summarised below.

Under IFRS4, insurance liabilities comprised a best-estimate liability, with compulsory margins prescribed by the regulations. Discretionary margins could be added depending on the insurance company's policy and methodology choices.

	Insurer 1		Insurer 2		Insurer 3	
	IFRS4	IFRS17	IFRS4	IFRS17	IFRS4	IFRS17
Assets	100	105	180	180	200	190
Liabilities	70	90	160	140	150	140
Net Asset Value	30	15	20	40	50	50

An insurance analyst has indicated that he does not understand how the transition to IFRS17 could have affected the Net Asset Value (NAV) of each insurer so differently.

- i. Discuss how the transition to IFRS17 could have affected the NAV of each insurer differently.

[20]

The insurance analyst has also been comparing the income statements of the insurer pre and post the transition to IFRS17.

IFRS4

Typical Profit/Loss
Premium income
- Actual claims and expenses
+/- Change in actuarial reserves
+ Investment income

IFRS17

IFRS 17 Profit / Loss
Insurance service revenue
Insurance service expenses
Insurance Service Result
Investment income
Insurance finance income / expenses

- ii. Compare and contrast the composition of the Income Statement under IFRS4 and IFRS17, using a guaranteed life annuity to explain how the components of income statement would emerge over-time.

[10]

[Total 30]

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QUESTION 4

A large life insurance company that operates in the South African market sells a range of investment and risk products. The company uses swap assets to back its annuity business.

The company calculates its Solvency Capital Requirements using the risk-free bond curve that is prescribed by the Prudential Authority of South Africa.

One of the executives has noted that the company's SCR cover ratio has been volatile over the last few reporting periods. Upon further investigation, it was identified that the volatility in the coverage ratio was caused by the annuities that are backed by swap assets but are valued by the PA bond curve to demonstrate solvency.

- i. Explain why the annuities that are backed by swap assets would cause volatility in the company's coverage ratio.

[5]

The risk executive of the company has proposed that the company apply to the PA to use the internal swap curve to calculate their SCR and Regulatory balance sheet. It is further noted that the swap curve that the company uses is lower than the PA prescribed bond curve.

- ii. Explain how the different components of the Regulatory balance sheet might be impacted by the application.

[13]

- iii. Discuss the merits of the executive's suggestion that the company should apply to the PA to use a swap curve for the Regulatory balance sheet.

[7]

[Total 25]

[Grand Total 100]

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END OF EXAMINATION