

EXAMINATION

20 May 2021

Subject F202 — Life Insurance Specialist Applications

Time allowed: Three hours and fifteen minutes, plus an additional five minutes to allow for scrolling 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. *Questions are only available in the ASSA Exam Platform and may not be printed.*
3. *Submit all of your answers in the ASSA Exam Platform only. No uploads of answers (handwritten or otherwise) to the ASSA Exam Platform will be accepted.*
4. *You may not use any other computer program (e.g. Email, MS Word or Excel) or files, nor open any other browser during the examination.*
5. *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.*
6. *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.*
7. *Mark allocations are shown in brackets.*
8. *Attempt all questions.*
9. *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.*
10. *You may return to your answers to review and amend during the allotted examination time. Once you are happy with your answers you need to **Finish all and Submit** your work. Once you have submitted you will not be able to make any more changes to your answers.*
11. *You must submit all work BEFORE the end of the allotted examination time. Take this into account when planning your review and submission. There will be no time announcements.*

Note: Answers will be saved automatically during the examination if you are connected to the ASSA Exam Platform. However, 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 a range of annuity products. It currently offers the following products:

- Fixed Annuity (level or fixed increases)
- With-Profit Annuity
- Living Annuity / Equity-linked Life Annuity (ELLA)

- i. Describe the advantages and disadvantages of these annuity contracts to the company and the policyholders as well as the risks to each party.

[18]

The company is considering adding two products to the annuity range.

The first product (Tontine Product) has elements of a tontine in its structure. Policyholders' premiums are invested in a unitised portfolio. Each policyholder splits their investment into a pension account and a bequest account. An annual drawdown rate is selected and the funds to pay this income are removed from the two accounts in proportion to the split of the original investment. On death, the bequest account is paid to the policyholder's dependents, but the balance of the pension account is credited to the remaining members' pension & bequest accounts in proportion to their pension account balances.

The second product (Smooth Index Annuity) consists of an annuity that has an annual increase equal to a percentage of the increase in a specified index less an annual fee. The percentage of the index increase is set between 40% and 80% and is selected by the policyholder at inception. The index is a weighted average of the last 5 years' returns on a reference portfolio, which is a balanced investment fund. The annual increase is subject to a minimum of 0%.

- ii. Discuss the issues of equity with regards to these two new products and suggest how the product design can be adapted to improve the equity.

[11]

- iii. Discuss the advantages and disadvantages of the Tontine Product when compared to an ELLA.

[7]

- iv. Discuss the advantages and disadvantages of the Smooth Index Annuity when compared to a traditional With-Profit Annuity.

[5]

[Total 41]

PLEASE TURN OVER

QUESTION 2

Outline the responsibilities and duties that APN106 requires from the Head of Actuarial Function (HAF) with regard to smooth bonus business and bonus declarations.

[Total 9]

QUESTION 3

A South African life insurance company only writes regular premium unit-linked endowment policies in the entry level market.

- The benefit payable on death, surrender and maturity is the value of the units.
- The policy also includes a funeral rider benefit, which pays a defined sum insured on death only, intended to cover funeral costs.

- i. State the three regular valuations that need to be carried out by long-term insurers to meet statutory or regulatory requirements. For each, state the regulatory body under which it falls and the legislation (or statutes) governing it.

[6]

The valuation of the liabilities for the published financial accounts based on the Financial Soundness Valuation (FSV) methodology needs to be completed.

- ii. Outline the general principles for setting a best estimate assumption basis and set out a suitable best estimate valuation basis that can be used for calculating the non-unit reserve of the endowment policies.

[14]

- iii. Explain why the components of the calculated non-unit reserve may be negative.

[6]

The company is launching the product through a new distribution channel. Due to a lack of persistency data of the new channel the existing experience is being used to set the pricing and valuation basis. The Head of Actuarial function is concerned that the persistency experience might be different for the new channel. Although the calculated non-unit reserve is negative, the Head of Actuarial function indicates that a zero reserve should be held.

- iv. Explain why the Head of Actuarial function might propose holding a zero non-unit reserve as opposed to a negative reserve.

[4]

PLEASE TURN OVER

During the past year the country was impacted by the COVID-19 pandemic. Material excess deaths were recorded, when measured against historic long-term experience. Limitations on the movement of people were also put in place. The limitations on movement and the pandemic itself had a significant negative economic impact which resulted in a significant increase in unemployment.

The regular annual experience investigation is being performed, with the objective of setting the mortality and persistency valuation basis for the year end valuation.

v. Describe the expected results from the experience investigation and any proposed long-term valuation basis changes. In addition, outline any potential short-term reserving implications.

[17]

vi. Outline the impact of the mortality and persistency experience on the solvency position of the company.

[3]

[Total 50]

[Grand Total 100]

END OF PAPER