

EXAMINATION

2 November 2012 (am)

Subject F202 — Life Insurance Specialist Applications

Time allowed: Three hours

INSTRUCTIONS TO THE CANDIDATE

- 1. Candidates will be issued with instructions to log-in using a password (which you will be provided with at the exam center).*
- 2. Candidates are required to submit their answers in Word format only using the template provided.*
- 3. Save your work continuously throughout the exam, on your computer's hard drive that you have been provided.*
- 4. You have 15 minutes at the start of the examination in which to read the questions. You are strongly encouraged to use this time for reading only, but notes may be made. You then have three hours to complete the paper.*
- 5. You must not start typing your answers until instructed to do so by the invigilator/supervisor.*
- 6. Mark allocations are shown in brackets on exam papers.*
- 7. Attempt all questions, beginning your answer to each question on a new page.*
- 8. Candidates should show calculations where this is appropriate (these could be copied from Excel into Word).*

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.

AT THE END OF THE EXAMINATION

Save your answers on the hard drive.

<p><i>In addition to this paper you should have available the 2002 edition of the Formulae and Tables and your own electronic calculator from the approved list.</i></p>
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QUESTION 1

You are an actuary working for a large propriety insurer in South Africa. You work in the product development and pricing area responsible for the risk products offered by your company. Ten years ago the company launched a range of risk only products including a range of critical illness (CI) risk products. The company is considering some product enhancements to the CI product in the coming months.

- (i) Describe the product features of a risk only CI product in the South African market. [9]

Through internal discussions around the current CI product and the possible changes, the statutory actuary of your company stated that he has always been concerned about maintaining a high level of risk management for CI products and wants to ensure that this continues.

- (ii) Describe how the company can manage the insurance risk on their CI products through product design, the claims and underwriting process as well as any other tools available to the company. [23]

The statutory actuary has had an initial discussion with the reinsurer of the CI products. He was concerned to hear a comment from them that they have been disappointed with the losses they have witnessed from the CI business with his company. As far as the statutory actuary is concerned the CI business has delivered profits over the years.

- (iii) Describe the potential reasons for the differences in the two sets of views of the profitability. [9]

The statutory actuary has also commented to you that he has read a few reports from the U.K. with regards to their national screening programme that has been in operation for a number of years.

With reference to a number of diseases, individuals from the population within various age groups are invited for free screening every 3 to 5 years. For example, the cervical cancer screening works as follows:

The NHS Cervical Screening Programme (NHS CSP) invites women aged 25 to 50 for screening every three years and those aged 50 to 64 every five years. The programme aims to prevent cervical cancer by detecting and treating cervical abnormalities before they cause problems.

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- (iv) The statutory actuary has asked you what the likely impact on the company would be in terms of its CI portfolio if such an initiative was ever introduced in South Africa. [9]

[Total 50]

QUESTION 2

You are a consultant actuary working in the South African life insurance industry. You specialise in financial soundness valuation and embedded value reporting and you have consulting relationships with a number of life insurers.

- i. Describe the minimum sensitivities to be disclosed when reporting embedded values. [5]
- ii. Describe how you would allow for future automatic regular premium increases when calculating the statutory valuation method liabilities and the embedded value. [4]
- iii. Discuss the expected impact of the replacement of secondary tax on companies with dividend tax on the embedded value of life insurers in the first year after implementation. [6]

[Total 15]

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QUESTION 3

A large South African proprietary life insurer sells a wide range of products, including individual smoothed bonus policies and risk only policies. Investment management is performed internally.

The assets underlying the insurer's individual smoothed bonus product are invested in a balanced fund. The insurer proposes to increase offshore exposure in the balanced fund.

- i. Discuss potential reasons for the proposal and factors the insurer should consider. [9]
- ii. Describe the investigations that would be performed in assessing the proposal. [9]

The company has just completed its year-end valuation, including the calculation of its value of new business and operating profit for the financial year, and its embedded value and reserves as at the end of the financial year. The Finance Director has now discovered that R10m may have been incorrectly allocated in the expense analysis. The costs were allocated to issuing expenses, but she believes they should have been allocated to maintenance expenses. (In both cases the expenses would apply to all the insurer's products.)

- iii. Describe how the financial metrics mentioned above would change if the expenses were reallocated and all the calculations performed again with updated expense assumptions. [9]

The insurer currently allows negative rand reserves for its risk only policies. It is now proposed to zeroise these reserves, i.e. eliminating negative reserves on a per policy basis.

- iv. Discuss the issues that the insurer should consider when assessing this proposal. Also describe the impact on its financial position, as measured by its CAR ratio, which is currently 3. [8]

[Total 35]

Grand Total [100]

END OF PAPER