

# EXAMINATION

22 September 2008 (pm)

## Subject SA2RSA — Life Insurance Specialist Applications

*Time allowed: Three hours*

### **INSTRUCTIONS TO THE CANDIDATE**

1. *Enter all the candidate and examination details as requested on the front of your answer booklet.*
2. *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.*
3. *You must not start writing your answers in the booklet until instructed to do so by the supervisor.*
4. *Mark allocations are shown in brackets.*
5. *Attempt all questions, beginning your answer to each question on a separate sheet.*
6. *Candidates should show calculations where this is appropriate.*

### **AT THE END OF THE EXAMINATION**

*Hand in BOTH your answer booklet, with any additional sheets firmly attached, and this question paper.*

*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.*

**PLEASE TURN OVER**

## Question 1

A South African proprietary life insurer markets a conventional without profit individual disability income product.

- (i) An analysis of claims has shown recent experience to be worse than that shown in industry experience studies. Discuss the possible reasons for the difference observed between the company's claims experience and that of the industry. [8]
- (ii) The current product design includes a long-term premium guarantee. Briefly discuss why this may be an undesirable feature from the company's point of view, and suggest how it might be modified to reduce its effect. [4]
- (iii) The product currently provides a choice of waiting periods. The Director of Marketing has proposed that an additional waiting period be offered, which will be shorter than those currently available on the product. Discuss the factors and assumptions which should be considered when pricing this new benefit. [7]
- (iv) Contrast the tax treatment of disability income and lump sum disability products purchased by individuals. [3]

[Total 22]

## Question 2

A small listed South African life insurer writes only unitized with profit and unit linked savings products, and term assurance business. The company has been suffering as a result of writing very low volumes of new business. A major shareholder has proposed that the company closes to new business and allows the existing business to run off over time.

- (i) Discuss the factors that would be taken into account in assessing the proposal. [19]

Stock markets have experienced an extended period of poor returns. The company's CAR cover has fallen during this period, with a number of companies being similarly affected.

- (ii) Assuming that the company does not close to new business, discuss how it could improve its CAR cover. [19]

The poor investment returns have also resulted in a greater public focus on the value for money provided to surrendering unit linked policyholders. A prominent politician has proposed that recurring premium unit-linked policies should be designed with no front end loading and with no penalty on early surrender, the full value of the units purchased being returned to the policyholders on withdrawal (although Market Value Adjusters will be allowed).

- (iii) Discuss the implications of this suggestion for life offices. (Assume the ruling regulatory position in South Africa as at mid-2007.) [10]

[Total 48]

**PLEASE TURN OVER**

### Question 3

A South African life office sold with profit immediate annuities up until 2001. All of the annuities have the same structure:

- The premium rates were calculated using a net discount rate of 6%.
  - Annuitants are entitled to 100% of all investment and mortality profits, but are not entitled to any other sources of surplus (deficit).
  - The insurer levies the following charges before any surplus (deficit) is determined for bonus purposes:
    - A monthly policy fee, currently R10, which grows at the same rate as the annuity.
    - Charges for investment administration and capital totaling 1.5% p.a. of the underlying assets.
- (i) Describe how the assets and the various components of the liability of the product would be determined for purposes of the Statutory Valuation Method. [21]

The assets underlying the annuities are invested 70% in equities and 30% in bonds. Very high investment returns have been achieved in the last 2 years, significantly higher than the bonuses declared in the same period. This has resulted in a large bonus stabilization reserve. However, the Statutory Actuary has concerns about the soundness of the product in a low interest rate environment.

- (ii) Discuss the rationale for the Statutory Actuary's concerns, and describe methods the insurer could use to address them. [9]  
[Total 30]

**END OF PAPER**