EXAMINATION

14 April 2008 (pm)

Subject SA2 — 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 3 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.

1 In a country that is regulated in the same way as the UK, a large proprietary life insurance company has only ever sold two kinds of savings products.

- A single premium investment bond invested in the company's unitised with profits fund. This contract has a fixed term of 10 years. Surrender penalties apply in the first five years. It is guaranteed that no market value reduction (MVR) will be applied at maturity or on earlier death.

- A regular premium conventional with profits endowment assurance. Historically surrender rates have been very low for this product, and surrender values have been calculated using a prospective method that makes allowance for terminal bonus. This method has generally paid more than asset share at early durations, but the volume of surrenders in the past has meant that the cost of implementing an alternative approach was not justified.

Five years ago the equity values in the country fell significantly, although recently they have recovered to a certain extent. Since the fall in equities, MVRs have been applied to surrenders of unitised with profits bonds purchased in the period before the fall in equities in order to provide some protection against exit rates. Due to the recent increase in equity values, it is expected that the MVRs could be removed over the next 18 months if equities continued to rise.

Recently, surrender rates for both products have increased significantly. At the same time, volumes of new business have fallen as a result of low investor confidence. There is a general feeling amongst distributors that with profits is no longer a concept that they can support.

In response to the current situation, a new without profits investment bond product is being considered. This product has significant levels of investment guarantees throughout the policy term and is significantly less profitable than the current product. It is expected that the new business volumes for the new product will be higher than for the existing product.

The Board of the company is concerned about the current events. Discuss each of its following suggestions.

(i) MVRs should be removed immediately in an attempt to stimulate new business volumes. [12]

(ii) The new bond should be launched, and further it should be launched immediately, six months ahead of schedule. [13]

(iii) The surrender value methodology for the endowment assurance should be revised immediately so that it better reflects asset share. [9]

(iv) The company should stop selling with profits business. [9]

[Total 43]

2 A recently established UK proprietary life insurance company only writes without profits term assurance business. The company calculates a market consistent European Embedded Value (EEV) on its business.

(i) Discuss how the disadvantages of using the achieved profits method are addressed by adopting EEV methodology. [7]

The company has performed EEV calculations (gross of tax) for its portfolio of in-force term assurance business. Some of the results were as follows (the figures at the end of the year exclude the impact of new business written during the year) .

	Start year (£000)	*End year (£000)*
Annual premiums payable at start of year	102,000	
Sum assured in force on death	10,000,000	
Present value of future profits on in-force business (PVIF)	3,023	2,346
Reserves	1,202	940

There is no free surplus and the contribution to EEV profit from new business was £100,000.

The following modelling assumptions are assumed:

- Premiums are payable at the start of the year
- Death claims are payable half way through the year
- Lapses occur at the year end
- Tax can be ignored
- Expenses are assumed to be incurred annually in advance

The EEV basis at the start of the year and the experience during the year were as follows:

	Basis at start of year	*Actual Experience*
Death rates	1% p.a.	1% p.a.
Lapse rates	10% p.a.	15% p.a.
Investment return/discount rate	5% p.a.	5% p.a.
Expenses	4% of premium	6% of premium

At the end of the year the EEV experience basis was strengthened and this reduced the PVIF at the end of the year by 3%; the £2.346m shown above is after this strengthening. There were no changes to the valuation basis used to calculate reserves.

(ii) Calculate the EEV profit or loss (gross of tax) arising during the year. [6]

(iii) List the main items in an analysis of change in the EEV movement. [6]

(iv) Analyse the gross of tax EEV profit (as calculated above) into the relevant components of operating return, explaining all calculations. [11]

 PLEASE TURN OVER

The company has also analysed the difference between its actual and expected tax surplus and found that the actual tax was significantly different from that expected due to the company moving to an “excess E” basis this year.

(v) Discuss the possible reasons for this change in tax position [4]

[Total 34]

3 A proprietary life insurance company currently writes only without profits term and conventional without profit endowment assurance business. It is considering purchasing a book of unit-linked group personal pension business.

(i) Describe the factors to consider in determining the price to pay for this business. [12]

The life insurance company has now purchased the book of business. It has become concerned about the risks from problems in the policy administration system that is used for this business.

(ii) Describe how this risk might affect the company’s capital requirements. [5]

(iii) Outline how the company could implement a risk management system to control this risk. [6]

[Total 23]

END OF PAPER