EXAMINATIONS

11 September 2003 (am)

Subject 402 — UK Fellowship Life Insurance

Paper One

You must answer this subject only, you may not attempt another subject in the 400 series.

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 8 questions, beginning your answer to each question on a separate sheet.*

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 Actuarial Tables and your own electronic calculator.

1 Explain what is meant by the term "shadow unit" and describe its use in setting bonus rates for accumulating with profits contracts. [5]

2 Compare the supervisory valuation methods used for the following without profit non-linked contracts. Do not consider the actual bases used.

(a) Group Life assurance
(b) Individual term assurance [5]

3 The Very Old Small Reliable Insurance Company has been in existence for over 200 years. The assets of this UK insurance company are made up as follows:

Shares listed on the London Stock Exchange	45%
(These are concentrated in a small number of particular stocks)	
Unlisted shares	5%
British Government Stocks	25%
Debts	5%
Property	10%
Computer and other office equipment	5%
Art*	5%

* Paintings of the original Board by an artist who has since become particularly sought after.

(i) Describe how each of these asset classes would be valued for the purposes of the supervisory valuation. [5]

The company is currently finding it difficult to demonstrate its solvency.

(ii) Describe the actions it could take to improve its solvency position, given that the valuation basis cannot be weakened further with the existing asset holdings. [10]
[Total 15]

4 (i) State the purpose of each of the three main profit reporting methods:

- Statutory Solvency Basis (SSB)
- Modified Statutory Basis (MSB)
- Achieved Profits Method (APM)

[3]

(ii) Describe how each of these three methods reflects the impact of any new regular premium business written during the year. [11]
[Total 14]

5 (i) State the items that comprise the shareholder value of a proprietary life insurance company and list the reasons why the company would analyse the change in shareholder value from year to year. [6]

A life insurance company transacts business through both an employed direct salesforce and insurance intermediaries. Analysis of the change in shareholder value during 2002 has revealed that business written through insurance intermediaries generated a return on capital employed of 11% per annum, while business from the direct salesforce generated only 5% per annum. A risk discount rate of 10% per annum was used in the embedded value calculation.

(ii) Discuss the implications of these results for the company and the actions it might take. [7]

[Total 13]

6 A UK life insurance company has historically written only conventional non-linked life assurance products, but is now considering writing a unit-linked product.

(i) Define the term "risk discount rate", and describe how it is used in product pricing. [3]

(ii) Describe how the risk discount rate would be determined for pricing the new unit-linked product. [5]

It has been suggested that, in order to increase the competitiveness of the product, the risk discount rate should be reduced to allow lower premiums to be charged whilst maintaining the same profitability as a percentage of premium.

(iii) Discuss this suggestion. [3]

[Total 11]

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7 A UK mutual life insurance company has a wholly owned general insurance subsidiary. The life and general insurance companies share the same premises, which are owned by the long term business fund of the life company, and have the same corporate management. The life insurance company writes no pensions or overseas life assurance business.

Investment income and gains exceed expenses in the tax computation of the life company, owing to considerable volumes of endowment assurances written between ten and fifteen years ago. In the last five years the majority of new business has been term insurance and PHI.

(i) Discuss the considerations that would be taken into account in assessing the taxation basis and tax rate assumptions used in pricing the term insurance and PHI currently being written. [8]

The general insurance subsidiary has incurred large losses in each of the last five years. It has now been decided to cease writing new general insurance business and to run-off the existing business.

(ii) Discuss the effect that this decision would have on the group's expenses and hence on the taxation of the long term business fund in the life insurance company. [4]

(iii) Describe the actions that the life insurance company might take as a result of the change in tax position. [4]
[Total 16]

8 A proprietary life insurance company has written accumulating with profits business for the last ten years. It manages payouts by reference to asset shares, using both regular and terminal bonuses, which are normally declared annually. The with profits fund invests in both equities and fixed interest investments. Business is sold largely through insurance intermediaries.

(i) State the sources of surplus that are likely to be distributed by regular bonus and those that are likely to be distributed by terminal bonus. [4]

(ii) Describe the factors that the company is likely to have taken into account when setting the level of regular bonus when it first decided to offer accumulating with profits business. [5]

After many years of steady equity growth the equity market has now fallen for three years in a row.

(iii) Discuss the issues that would have been considered in determining the declarations of regular bonus over that period. [7]

(iv) Discuss how payouts, both discretionary payments and those at contractual payment dates, would have been managed over the three-year period. [5]
[Total 21]