EXAMINATIONS

13 September 2002 (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 7 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 Describe the investigations which are required in order to calculate the Deferred Acquisition Cost asset of a portfolio of unit-linked and conventional without profits business. [4]

2 (i) Describe briefly the equating policy values method and the emerging costs method used to price a life insurance product. [4]

(ii) State with reasons why the emerging costs method might be preferable. [4]
[Total 8]

3 A large proprietary company has been following a strategy of purchasing life insurance companies, closing them to new business, and maximising the profit on their existing business. It is currently considering the purchase of a small mutual life insurance company which only writes conventional with profits business. Under the proposal, shareholders would receive 10% of surplus.

(i) Describe the methodology the proprietary company would use to calculate the value of the mutual company to its shareholders (no basis is required). [11]

(ii) Discuss the factors which the proprietary company would consider when deciding on the expense assumptions for its calculation. [6]
[Total 17]

4 A mutual life insurance company has two types of contract in force:

- regular premium conventional with profits endowment assurances; and
- single premium unit-linked whole life assurances

It has decided to close to new business and to distribute its estate to the remaining with profits endowment policyholders. The estate is defined to be the sum of two components:

- The excess of the with profits assets over the amount required to meet the with profits policyholders' reasonable expectations.

- The present value of future profits from the unit-linked whole life assurances.

(i) Describe how the company would quantify the size of its estate. [14]

(ii) Discuss the approaches the company could take towards distributing its estate and the how it would decide which approach to adopt. [8]
[Total 22]

5 A UK proprietary life insurance company sells a full range of life assurance and pensions products.

The following is an extract from its tax computations for 2000 and 2001:

	2000	*2001*
	£m	*£m*
BLAGAB		
taxable income	2,200	1,050
allowable expenses	(700)	(1,000)
surplus arising	250	150
PENSION		
Case VI surplus	(150)	200

You are given the following information:

- There are no NCI or pension Case VI losses brought forward from 1999.
- The company's aggregate rate of policyholder tax is 21%.
- The rate of corporation tax is 30%.
- The company does not receive any franked investment income.

(i) Define NCI Profit. [3]

(ii) Calculate the tax liability for both policyholders and shareholders for 2000 and 2001. [6]

(iii) List possible reasons for the pattern of results. [3]
[Total 12]

6 An established UK proprietary life insurance company is considering launching a new group income protection product. It has no previous experience of writing income protection business, though it has, in the past, sold other group products, including group life insurance.

(i) Describe, with reasons, the reinsurance arrangements that are most likely to meet the insurer's requirements. [4]

(ii) Describe the factors that influence the choice of the retention limit. [10]

(iii) Describe the practical assistance that the reinsurer could offer to the life insurance company in managing this business. [5]
[Total 19]

7 A proprietary life insurance company has for some years run an executive remuneration scheme for management, under which a proportion of embedded value growth above a threshold rate of 10% per annum is divided amongst the management team.

When the scheme was originally set up, the risk discount rate was 13.5% per annum, and the yield on a 10 year UK Government security was 7.5% per annum. The current values for these assumptions are 8.5% and 4.5% per annum respectively.

For the most recent year, the company has just disclosed an annual rate of embedded value growth in excess of 25%, which included 15% arising from changes to demographic assumptions. In order to reduce the cost of the scheme, the managing director has proposed that the threshold rate of embedded value growth is raised to 15% per annum.

(i) List the possible sources of embedded value growth. [5]

(ii) Discuss the managing director's suggestion on the basis of the information given. [6]

(iii) Outline the investigations that would be performed to decide whether the proposal is reasonable. [7]
[Total 18]