EXAMINATION

29 September 2009 (pm)

Subject ST2 — Life Insurance Specialist Technical

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 before 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 seven 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 (i) List the requirements that an actuarial model should satisfy. [4]

(ii) Describe the basic features of an actuarial model for projecting life insurance business. [4]
[Total 8]

2 (i) Describe the risks to which a life insurance company is exposed with regard to policy data. [3]

For several years, a life insurance company has sold unit-linked life insurance contracts. The analysis of surplus performed by the company has indicated a large unexplained loss. It has been suggested that there may be errors in the data extraction process.

(ii) Describe the steps that the company should take to ensure the data was accurate and appropriate. [6]
[Total 9]

3 A small but growing life insurance company writes only term assurance business. It currently reinsures 80% of claims payments using a quota share arrangement. It is considering stopping using this arrangement.

(i) Suggest reasons why it may choose to do this. [3]

(ii) Describe how the proposal may change the risk profile of the company. [4]

(iii) Discuss how the company may seek to mitigate the increased risks. [5]
[Total 12]

4 (i) Describe the attributes of the four main distribution channels open to a life insurance company. [7]

(ii) Describe the costs that would be incurred by a life insurance company that uses each of these channels. [4]
[Total 11]

5 A life insurance company sells, and has only ever sold, unit-linked endowment assurance contracts.

(i) Describe the main features of these contracts. [5]

The economy in which the company operates has just gone into recession. Unemployment is rising and house prices are falling.

(ii) Discuss how these conditions may impact its unit-linked business. [5]
[Total 10]

6 Company Z sells individual unit-linked endowment assurances for the purposes of retirement planning. This is a large market in the country in which Company Z operates. Under local regulation policyholders are able to transfer their policies between life insurance companies, investing their existing fund plus future premiums into the unit-linked investment funds available from the new provider. These transfers are largely initiated by insurance intermediaries.

Company Z is looking to be more active in this “transfer market” and therefore wishes to enhance its current product in order to be more competitive. It believes this will enable it to attract more transfer values from other companies.

(i) Describe the key considerations for Company Z when designing the enhanced product. [13]

(ii) Discuss ways in which the company could reduce its exposure to withdrawal risk for this enhanced product. [5]

Some life insurance companies offer a guarantee within their unit-linked endowment assurance products. The guarantee provides a minimum level of immediate annuity that the fund will provide at retirement. The guarantee is given in terms of a minimum fixed monetary amount per annum. This guarantee in respect of the existing fund remains when the fund is transferred between providers. The guarantee must be maintained by the company the policyholder is with at their standard retirement age (a fixed date). However the guarantee does not apply to future premiums paid after the transfer.

(iii) Discuss the main additional risks to the company when accepting a transfer value that includes a guaranteed minimum annuity amount. [4]

(iv) Discuss how the company could manage the risks described in part (iii). [5]
[Total 27]

7 (i) Define the embedded value of a life insurance company. [2]

A proprietary life insurance company has written conventional with profits, conventional without profits business and unit-linked business over a number of years.

(ii) Describe the calculation of the embedded value for this company. [You do not need to include details of modelling approaches, data or assumptions] [7]

(iii) Discuss how the assumptions used to calculate the embedded value are likely to compare with those used to calculate any supervisory reserves. [14]
[Total 23]

END OF PAPER