EXAMINATIONS

23 September 2004 (am)

Subject 302 — Life Insurance

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 A life insurance company is considering changing the way it distributes profits from the additions to benefit method (using both reversionary and terminal bonus) to a contribution dividend method. Under the proposal a cash dividend would be paid at the end of each year.

(i) State a possible formula for the dividend, defining all the symbols used. [3]

(ii) State the advantages and disadvantages of the proposal for the company and the policyholders. [5]

[Total 8]

2 A life insurance company plans to develop a model to assess the profitability of its term assurance business.

(i) Describe the basic features of the model that would be used for this purpose. [4]

(ii) Discuss how the company would use the results of its experience investigations to determine the experience assumptions to be used within the model. [6]

[Total 10]

3 A life insurance company is developing a new regular premium unit-linked endowment assurance product to be sold through insurance intermediaries.

(i) List the main types of expense that may be incurred. [3]

(ii) Discuss the factors to be taken into account in determining the types of charge that could be made in order to cover expenses. [9]

[Total 12]

4 A life insurance company writes a significant volume of group term assurance contracts associated with the lump sum death in service insurance provided under occupational pension schemes. It reassures any amount above a retention limit for individual lives assured on a risk premium basis.

Describe how the company would use the control cycle to review the retention limit for this portfolio. [12]

5 (i) Explain why a life insurance company might project its solvency position into the future. [3]

A life insurance company writes business solely through its own employed salesforce. For many years the total new business production and the size of the salesforce have both been stable. During 2003 there was a decline of 50% in the size of the salesforce, with the average production per salesperson remaining unchanged.

(ii) Explain how this change might affect the solvency position on the supervisory basis at the valuation at 31.12.2003 compared with the valuation at 31.12.2002. [5]

(iii) Discuss how the solvency position might change in future years if the new salesforce size and average production persist. [5]

(iv) Discuss the actions the company could take in these circumstances. [4]

[Total 17]

6 A life insurance company sells non-linked critical illness contracts through insurance intermediaries. It is considering increasing its medical limit (the limit at which it asks for a report from the applicant's doctor) to counter rising underwriting costs.

(i) State why the company would underwrite these contracts at inception. [3]

(ii) List the questions that the company would include on the proposal form in order that it could underwrite the application. [6]

(iii) Describe the factors the company should take into account when setting a new medical limit and how it would determine by how much it should be increased. [6]

(iv) Outline the principal methods by which special terms might be applied to the contract as a result of the underwriting process. [4]

[Total 19]

7 A life insurance company intends to launch a non-linked term assurance product in an overseas country. The company already sells some low premium savings products in that country, but does not currently offer protection products there. The new term assurance product will be sold only through insurance intermediaries based in the overseas country.

(i) Describe the main risks faced by the insurance company with this new product. [10]

(ii) Explain how these risks could be mitigated. [12]

[Total 22]

END OF PAPER