

EXAMINATION

20 April 2009 (am)

Subject CA1 — Actuarial Risk Management

Paper One

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 six 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** Outline with reasons the principles that a defined benefit scheme should follow in setting an investment strategy. [7]
- 2** A well-funded benefits scheme is investigating the possibility of providing a loan to a manufacturing company. Interest will be paid on the loan at a fixed rate over ten years, with full repayment at the end of the term.
- Outline the factors that the scheme should take into consideration when determining whether to make this loan. [10]
- 3** A life insurance company launched a single premium unit-linked bond product five years ago. The terms of the contract were as follows:
- Annual Management Charge of 1% of the accumulated fund each year
 - early exit charges to apply in first year at 3% of the accumulated fund, second year at 2% and in third year at 1%
 - guaranteed return of premium on death
- The policyholders have the choice of three funds to invest in:
- an equity fund
 - a fixed interest fund
 - a fund that guarantees at least the return of premium on every anniversary of the policy
- (i) Describe the approach that the company would have used to project its expected profits when it launched the product. [6]
- Having reviewed the policies' actual performance it is seen that the product has made losses every year since its launch.
- (ii) Discuss reasons why the losses may be occurring. [7]
- (iii) Outline the actions that management can take to reduce the losses on this product. [4]
- [Total 17]

4 A general insurance company specialises in domestic property insurance covering both buildings and contents. The company is considering various methods of controlling risks.

- (i) Discuss the factors that the company should consider before deciding on an appropriate risk transfer programme. [7]
- (ii) Discuss methods other than reinsurance which the company could use to control risks. [6]
- (iii) List the advantages that these methods have compared to a reinsurance programme. [4]

The company is part of a large multinational organisation that has a number of business units that are either similar general insurance companies, life insurance companies or investment companies.

- (iv) Discuss two approaches to managing the aggregation of risk arising from the multinational organisation's various enterprises. [4]
- [Total 21]

5 A large multinational corporation runs chains of fast food restaurants. Currently the corporation only operates in developed countries.

The corporation is considering expanding its operations by setting up in a large developing country.

- (i) Outline the options that the corporation should consider in deciding how to enter this developing market. [4]
- (ii) Discuss the factors that need to be considered to assess the viability of the expansion project and to identify and analyse the significant risks involved. You do not need to consider any issues relating to financing the project. [12]
- (iii) (a) List the main approaches for mitigating the major risks of a project; and
(b) Give one example of how each approach could be applied in this project. [6]

[Total 22]

6 The central bank of a developed country has reduced short term interest rates.

(i) Explain why the central bank may have taken this course of action. [9]

(ii) Discuss how a reduction in short term interest rates would affect the following types of investments that are domestic to the developed country:

- Government bonds
- Corporate bonds
- Equities
- Property

[14]

[Total 23]

END OF PAPER