`Faculty of Actuaries | Institute of Actuaries

EXAMINATION

4 September 2006 (pm)

Subject CA1 — Core Applications Concepts

Paper 2
(Liabilities and Asset Liability Management)

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.*

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.

CA12 S2006

1 List the requirements that a capital market regulator may impose on a bidder who is seeking to take over a publicly listed company. [4]

2 A government is introducing regulation of benefit schemes. The legislation will create the statutory role of an Actuary for each scheme. The Actuary will be required to carry out a valuation of the scheme, using assumptions set out in regulations, to determine the future level of contributions, and to report the results to the scheme sponsors.

(i) State the items the Actuary might be required to certify in the formal report on this valuation. [3]

(ii) Discuss the issues that the Actuary should consider when preparing the report. [3]

(iii) Outline the main items that would be included in the report. [3]
[Total 9]

3 An employer sponsors a final salary benefit scheme. The scheme includes the following features:

- Employees who leave employment with less than 3 years' service receive no benefit. Employees who leave after 3 years are entitled to a deferred pension payable from normal retirement age of 65 — deferred pensions are not increased between leaving and retirement.

- On death in service, the scheme pays a lump sum of 3 times salary to an employee's dependants. No benefits are payable on death in deferment.

The employer wants to amend these features of the scheme to make it more attractive to potential new recruits. His objective is to do this without significantly increasing the cost of the scheme to the employer.

(i) Discuss why the existing scheme design may not appear attractive to individuals who are being recruited. [3]

(ii) Describe two changes to the benefit structure that might achieve the employer's objective, and explain how each change would achieve this objective. [4]

(iii) Discuss the implications for existing scheme members if the employer amends the scheme in any way that makes it more attractive to potential new recruits without significantly increasing the cost of the scheme to the employer. [7]
[Total 14]

4 (i) Outline the reasons why the claims experience of two major private motor insurance companies might differ significantly. [4]

A reinsurance company provides reinsurance cover on private motor insurance business.

(ii) Discuss the principal ways in which the reinsurer might assist a new company to enter the private motor vehicle market. [10]
[Total 14]

5 A life insurance company prices level immediate annuity contracts on the assumption that it will earn an investment return 0.75 percentage points per annum in excess of the yield on appropriately dated government bonds. It invests 75% of the single premiums received for this contract in corporate bonds and 25% in ordinary shares.

Discuss whether this investment policy is appropriate, identify the risks to the company from following it, and suggest possible alternative investment strategies. [15]

6 (i) Set out a possible structure for analysing the risks of a financial product provider. [4]

(ii) Discuss the main management control systems that can be used by a life insurance company to reduce its exposure to risk. [5]

A life insurance company writes whole of life assurance contracts on the following bases:

(a) non-linked, without profits
(b) non-linked, with profits

(iii) Discuss how the company can limit its exposure to mortality and investment risks in each of the above contracts. [8]
[Total 17]

 PLEASE TURN OVER

7 Company A is a small life insurance company. It has never written with profits business, but writes a wide range of without profits non-linked and unit-linked business. New business volumes have been declining steadily over the last ten years. Company A's chief executive will be retiring in the next twelve months. Company A is a wholly owned subsidiary of Company B.

Company B is a large general insurance company with a substantial share in the market for domestic residential property insurance. Both Company A and Company B have concentrated their marketing initiatives towards members of the legal professions in the country concerned.

Company C is a medium-sized mutual life insurance company, writing all classes of with and without profits business, and operating across the whole market.

In the territory in which all three companies operate, the regulatory capital requirement for insurance companies is based on the risk profile of the company's business, subject to a minimum monetary amount.

Company B is seeking to dispose of Company A, and has asked interested purchasers to make an indicative offer prior to entering into a due diligence and detailed assessment period.

(i) Outline reasons why Company B might be seeking to dispose of Company A. [5]

(ii) Discuss the financial and operational issues that Company C would have to consider before deciding whether to make an indicative offer. [10]

(iii) Describe the calculations that Company C would undertake in order to quantify its offer. You should describe how to deal with the limited amount of data available at this indicative offer stage. [12]

[Total 27]

END OF PAPER