

# EXAMINATION

7 April 2008 (pm)

## Subject CA1 — Core Applications Concepts

### Paper Two

*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.*

<p><i>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.</i></p>
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- 1** (i) State the principles of investment. [2]
- (ii) Describe the actuarial techniques that can be used to determine an investment strategy. [5]
- [Total 7]
- 2** An insurance company has decided to enter the market for long-term sickness insurance.
- Discuss the effect of the external environment on the development of a product for this market. [8]
- 3** A large company has sponsored a funded defined benefit pension scheme for many years. Fifteen years ago the scheme was closed to new members, and also to future accrual of pensionable service for existing members.
- The scheme now has a small number of members still employed by the company, but several thousand members either with pensions in payment or with deferred pensions expressed in terms of an annual amount that increases with inflation both in deferment and in payment.
- (i) Describe the risks that the company faces in continuing to sponsor the defined benefit scheme. [6]
- It has been suggested that the company could transfer the risks relating to pensioners and deferred pensioners to an insurance company who would issue them with individual policies that will guarantee the benefits to which they are currently entitled under the scheme.
- (ii) Discuss the advantages and disadvantages of this suggestion from the viewpoint of the company. [7]
- [Total 13]
- 4** An insurance company is considering introducing a wedding insurance policy. The insurer intends to sell the policy through a large supermarket chain. The policy would be branded in the name of the supermarket, but the insurance company would cover the risks.
- (i) List the main risks that the policy should cover. [4]
- (ii) Explain why the insurer may wish to use the supermarket as its sales channel. [4]
- (iii) Discuss the rating factors the insurer could use in setting premiums. [6]
- [Total 14]

- 5**
- (i) (a) Define self-insurance in the context of general insurance.
  - (b) Explain why some organisations may choose to self-insure some of the risks that they face. [3]

A small company owns a chain of 30 retail units in and around a large city. The vast majority of transactions in the business involve cash. The annual turnover for each retail unit varies between \$500,000 and \$3,000,000. At present, the company does not have insurance against robbery, burglary or theft.

The company has now decided to obtain quotations for such insurance cover.

- (ii) Outline the general information an insurance company would need in order to set appropriate premiums. [7]
  - (iii) Describe specific measures that the retailer could take to reduce the risk of a claim and hence obtain a reduction to the premiums in (ii) above. [6]
- [Total 16]

- 6** A regional bank operates in a particular area of a country and provides residential mortgages.

- (i) Describe the sources of risks faced by this regional bank that relate to its residential mortgage business. [4]

The country's central bank increases short-term interest rates. Consequently, the regional bank's cost of borrowing rises and it decides to pass on its increased costs by increasing the interest rate it charges on residential mortgage lending.

- (ii) Describe the impact the changes might have on:
  - (a) the economy as a whole;
  - (b) the regional bank in particular. [9]

Part of the regional bank's mortgage portfolio consists of residential mortgages where it has lent money to higher risk borrowers and is charging a higher mortgage interest rate. The regional bank has decided to reduce its credit risk by securitising this part of its portfolio.

- (iii) Describe the considerations an institutional investor should take into account in determining an appropriate price to pay for this investment. [7]
- [Total 20]

- 7** (i) List the main items that should be set out in a written strategy for a project. [2]

A wealthy private foundation wishes to inspire a future generation of ultra-efficient vehicles.

It has been suggested that the foundation could sponsor a high profile international competition, which could offer a multi million dollar prize to the first team to develop a commercially viable vehicle that meets specified efficiency criteria.

- (ii) Discuss:
- (a) the expected costs of sponsoring such a competition;
  - (b) how these costs may be financed. [8]
- (iii) Describe other aspects of this suggestion that the private foundation will need to consider when developing the project strategy. [12]
- [Total 22]

**END OF PAPER**