INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

23 September 2014 (am)

Subject CA1 – Actuarial Risk Management

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 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 new page.*
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) Define credit risk. [1]

(ii) Describe the principles fundamental to good lending. [5]
[Total 6]

2 An insurance company has been writing a high volume of conventional motor insurance for a number of years.

In recent years, there has been a substantial increase in journeys made by trucks transporting heavy machinery along cross-country routes to remote locations. There are currently over twenty such routes/locations. The trend is expected to continue in future.

The insurance company has decided to develop an insurance product specifically targetted at this market, to provide cover if a truck breaks down or has an accident. The insurance cover will pay for repairs at the roadside or, if this is not possible, it will pay for the truck to be taken to an approved repair centre.

(i) Outline the risks this new product could introduce for the insurance company. [6]

(ii) Discuss the extent to which some of these risks could have their impact reduced through diversification or through alteration of policy terms. [5]
[Total 11]

3 A small general insurance company currently sells only one line of business. The company's strategic plan is to grow rapidly by acquiring other insurance companies.

The company's owners have identified a target company, and now wish to determine an offer price for the target.

(i) Outline the requirements of an actuarial model to place a value on the target company. [7]

(ii) Discuss why the owners may offer a different price to that suggested by the model. [3]

(iii) Discuss why the company may be able to operate more efficiently after completing the acquisition. [2]
[Total 12]

4 A general insurance company intends to launch a new product. It will cover policyholders for medical costs arising from an accident.

Describe how to determine the premiums for this product, including the process of collecting data and setting pricing assumptions. [13]

5 (i) Outline what is meant by Scenario Analysis, Stress Testing and Stochastic Modelling. [3]

(ii) Suggest, with reasons, which risk evaluation method in (i) is most appropriate for each of the following situations:

(a) market crash impact
(b) individual company capital assessment review
(c) valuation of a portfolio including guarantees

[3]

(iii) Discuss the use of a standard model for determining an insurance company's Solvency Capital Requirements compared with an internal model. Consider this from the perspective of:

(a) an insurance company.
(b) a regulator.

[10]
[Total 16]

6 (i) Outline the main features of an investment trust. [4]

An investment trust specialises in investing in unquoted equities and unquoted bonds.

(ii) Discuss the attractions of this investment trust to an investor. [3]

(iii) Describe how the investment trust might value its unquoted investments using cashflow techniques. [7]

Over the past six months there has been a rise in the main stock market index for the country where the investment trust is based, but over the same period the value of the investment trust's assets has fallen.

(iv) Discuss possible reasons for this difference in performance. [3]
[Total 17]

7 A defined benefit pension scheme is in the process of being wound up following the insolvency of the sponsoring company. The scheme was in surplus at the time of the insolvency. The scheme's membership comprises about 30% pensioners who have all retired in the last three years and about 70% deferred members who on average have twenty years until they reach retirement age.

(i) Discuss the issues and choices that will need to be considered by the scheme's trustees. [11]

An insurance company has been approached to provide the benefits exactly as in the scheme rules in exchange for a single initial premium.

(ii) Discuss the risks that the insurance company would be taking on. [8]

(iii) Outline the management tools that could be used to control these risks. [6]
[Total 25]

END OF PAPER