EXAMINATIONS

27 September 2004 (am)

Subject 303 — General 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 8 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 (i) List the types of generic policy and claims data that would be required for a premium rating exercise. [5]

(ii) Give examples of the specific rating factors that should be considered when pricing:

(a) personal medical expenses
(b) employers' liability insurance

[4]
[Total 9]

2 A general insurance company expects to write business at a loss ratio of 70% and incurs expenses of 10% commission and 10% other management expenses. It pays taxes of 30% of profits. It also pays out 10% of its post tax profits to shareholders in the form of a dividend. The insurance regulator requires it to demonstrate a minimum solvency ratio of 50% at the end of the year. Its current solvency ratio is 50%.

(i) Calculate the maximum growth rate that it can sustain without recourse to additional capital, stating any assumptions that you make. [4]

(ii) Suggest ways in which this insurer might be able to grow more quickly than the rate calculated in part (i). [5]
[Total 9]

3 State the advantages and disadvantages to a large multinational company of setting up a captive insurer. [6]

4 A general insurance company writes a wide range of general insurance products. The reserve estimates for each homogenous portfolio are calculated using the Bornheutter-Fergusson method. Company procedures dictate that the initial estimate of the ultimate loss ratio is not changed once selected.

You are an actuary responsible for setting the reserve estimates for a stable portfolio of short tailed business. You are reviewing the historical data for a fully developed year. In this year $100m of premiums were written in a soft market. The portfolio is reserved using the Bornheutter-Fergusson method based on reported claims, and at the time of writing the expected cost of claims was under estimated. The initially selected estimate of the ultimate loss ratio was 100% and the difference between the initial and actual ultimate loss ratio is 20%.

The expected run off pattern for this portfolio is given below.

End of year	1	2	3
Paid claims	30%	90%	100%
Reported claims	50%	105%	100%

(i) Explain why reported claims at the end of year 2 might exceed the ultimate claims. [4]

(ii) Calculate the impact that the difference between the initial and actual ultimate loss ratio has on the declared profits of the company at the end of each of the three years, stating any assumptions you make. [4]

(iii) State the advantages and disadvantages to the company of its policy of not changing the initial estimate of the Bornheutter-Fergusson ultimate loss ratio. [4]

[Total 12]

5 (i) List the third parties whose financial failure could have an impact upon a general insurance company, giving in each case an example of the financial effect upon the insurer. [6]

(ii) Describe the measures that an insurance regulator might impose in order to reduce the risk of third party failure to the insurers that it regulates. [4]

[Total 10]

6 A general insurance company specialises in writing commercial property insurance business.

(i) List the rating factors that it is likely to use in order to determine appropriate premium rates. [3]

(ii) List the risks that the insurance company faces in relation to claims experience from this class of business. [4]

(iii) Give examples of the measures that the insurance company could put in place to control / reduce the variability of its claim experience. [7]

[Total 14]

7 The government of a small developing nation wants to encourage exports from that country. One of the measures that it has taken is to set up an export credit insurer. An exporter can buy credit insurance from the insurer for each consignment of goods that it exports. If the customer in the foreign country fails to pay for the goods, then the insurer indemnifies the exporter.

(i) Describe the characteristics of the claims that the export credit insurer is likely to receive. [5]

(ii) List the policy data items that the export credit insurer will need to capture when setting up a policy onto its system. [2]

(iii) Suggest appropriate ways to group claim development statistics for this insurer when carrying out a reserving exercise to set outstanding claim reserves. [2]

(iv) Describe how the unearned premium reserve would be calculated for this insurer. [2]

(v) Suggest with reasons, suitable reinsurance structures for the export credit insurer. [4]

[Total 15]

8 You are the actuary for a large general insurance company selling household buildings and contents insurance, through a broker network. The company has been writing this business for 12 years. In common with its competitors in the market, the company uses only geographical location and sum insured as rating factors.

The finance director of your company is considering the implications of introducing some form of experience rating in order to set the company apart from the rest of the market, and has asked for your assistance in analysing the impact of such a move.

(i) Describe the different types of experience rating that could be considered, and their consequences to the insurer. [4]

(ii) Compare the relative merits of the different options in this circumstance, and make a recommendation between the alternatives. [7]

(iii) Discuss the impact that the introduction of experience rating may have on the insurance company and its policyholders. [9]

It has been decided to introduce the experience rating from 1 January 2005.

(iv) Describe the portfolio movement analyses that could be put in place to monitor the impact of this introduction. [5]

[Total 25]

END OF PAPER