EXAMINATIONS

19 April 2004 (am)

Subject 403 — UK Fellowship General Insurance

Paper One

You must answer this subject only, you may not attempt another subject in the 400 series.

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 6 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) Define the following terms:

(a) Working Layer
(b) Stability Clause

[2]

(ii) Suggest why and when each of the above may be used. [4]

[Total 6]

2 List the reasons why the risk based capital held by an insurance company (as a percentage of written premium) might vary from one line of business to another.

[6]

3 You are the actuary for a small general insurance company that writes only personal lines motor business.

Describe, with examples, the uncertainties relating to the estimates of the company's claims liabilities.

[10]

4 You are the actuary for a UK general insurance company that writes only commercial motor fleet business.

(i) Describe the variety of experience rating methods that could be used to set the risk premium for the different sizes of fleet. [6]

(ii) Discuss the factors that you would take into account when determining the credibility factor, ignoring the effect upon the premium thus determined compared with the market or previous premiums charged. [2]

(iii) (a) State the other components (non risk premium) of the theoretically correct premium rate.

(b) Explain how they are loaded onto the risk premiums.

(c) Suggest likely values for them.

[10]

At the beginning of 2004 the underwriting director suggests that the company's fleet rates are competitive and that during 2004 the company should write twice as much gross written premium as was written during 2003. You have been given the following information:

Current solvency margin = 40% of premium written in the year
Dividend distribution = 25% of the net insurance profit after tax
Gross interest rate = 5% per annum
Tax = 33%

(iv) The directors wish to maintain the solvency margin at the current level of 40%.

Calculate the required gross insurance profit for 2004 as a percentage of the gross written premium in 2004, defining the terms in any formula that you use. [3]

(v) The finance director suggests a more conservative strategy. Strengthen the solvency margin required to 50% at the end of 2004 and assume profitability of 10% of gross written premiums which is in line with that achieved in 2003.

Calculate the increase in gross written premium that this would permit. [2]

(vi) State, with reasons, which of the strategies suggested in (iv) and (v) is most likely to be achievable. [4]

[Total 27]

5 You are an actuary working for a general insurance company that writes only mortgage indemnity guarantee business. You have been asked to produce a document regarding the updating and revision of its business plan.

(i) State the areas likely to be covered in such a document. [7]

(ii) List the assumptions that you would need to make in preparing the plan. [6]

(iii) Explain how you would determine the levels at which the assumptions should be set. [13]

[Total 26]

 PLEASE TURN OVER

6 A general insurance company writes a portfolio of construction business that consists of civil engineering construction risks. Construction companies may insure building projects that have a planned duration of up to seven years with this insurance company. The insurer will pay for damage occurring during the construction process and building defects discovered for a short period after the building is handed over to the client. The insurance cover starts when the project commences and premiums are payable annually in advance. Premiums are based on the value of completed work and work that will be completed during the coming year. The company compiles monthly statistics on an underwriting year basis and all the premiums and claims are assigned to the underwriting year in which the project commenced.

(i) List the perils that are likely to be covered by the policies described above. [2]

(ii) Describe the features that you are likely to see in the premium and claim data triangles. [6]

(iii) Describe the risks to the insurance company arising out of the premium and claim estimation processes. [9]

(iv) The company cedes some of this portfolio to a reinsurance company. Under the terms of this treaty the insurance company provides half yearly bordereau to the reinsurance company

(a) Explain what is meant by the term bordereau.

(b) Describe the differences that you might see between the reinsurance company and insurance company premium and claim data triangles.

[8]

[Total 25]

END OF PAPER