Actuarial Society of South Africa

EXAMINATION

28 MAY 2012(am)

Subject F203 — *General Insurance* Specialist Applications

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 both 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 from the approved list.

Question 1

(i) Define:

- Direct insurance
- Personal lines insurance
- Product pricing
- Rating

[4]

(ii) Give all the advantages and disadvantages to an insurer of selling its business through intermediaries.

[9]

StableSure is a medium sized South African direct short term insurer, writing comprehensive personal lines business and commercial lines business. A new insurance company, BT Insure, has recently entered the market. BT Insure is part of the BT Financial Services (BTFS) group that provides a wide range of financial services to over 3.5 million clients in the South African market. BT Insure only writes comprehensive personal lines cover through BTFS's nationwide distribution channel of brokers and agents and also caters for clients who prefer dealing directly with their insurance company. BT Insure has acquired a large number of policyholders after three months of operation. During these three months StableSure's figures have been impacted as follows:

- Personal lines client base (number of policyholders) has dropped by 4%
- Personal lines underwriting results have deteriorated by 10%

The pricing has always included an underwriting margin of 10% on average and the rating bases have been stable over the last year.

Concerns have been raised about StableSure's drop in business volume and deterioration of results. StableSure's chief operating officer believes that selling business through intermediaries will solve both problems.

(iii) Discuss the likely reasons why there has been a change in business volume and deterioration in results and the merits of the chief operating officer's proposal.

[11]

The chief executive officer is concerned about the loss of business. He is under significant pressure from the board of directors to remedy this situation immediately. He wants StableSure to adopt the following simultaneously:

(a) Reduce all rates by 10% with immediate effect, until further notice and
(b) Introduce a "matching" strategy. When a policyholder tries to cancel his/her policy with StableSure, the call centre must offer to match the rates that the policyholder is being offered elsewhere.

(iv) Discuss the model that should be built in order to assess the sensitivity of business volumes to the rate change suggested in (a).

[6]

(v) Explain your concerns with regards to the chief executive officer's proposal, suggesting improvements to both (a) and (b) that you believe are necessary before implementation.

[12]

After investigation and claims analyses it has been determined that internal processes, people and systems in the claims department were the main contributors to the deterioration of results. Given this, StableSure's chief risk officer is concerned about internal risk management in the claims department.

(vi) Discuss the issues to consider in a claims risk management strategy to address the chief risk officer's concerns.

[8]

[Total 50]

Question 2

A niche South African short term insurer, writing only liability and guarantee lines has been operating for only two years . The current IBNR provision for the company is 15% of net written premium. Unearned premium provisions are earned on a straight line basis.

The balance sheet of the company is as follows:

Assets	
Cash	55
Equities	55
Premiums due	45
Total Assets	**155**
Liabilities	
Total technical liabilities (net of reinsurance)	50
Contingency Reserve	50
Total Liabilities	**100**
Free Assets	**55**

The cash is in a bank with an international A+ rating.

Premium information (in Rm) for the last 2 years is:

	Guarantee	Liability	Total
Net Written Premium Previous year	40	25	65
Net Written Premium Current year	100	50	150
Net Earned Premium Previous Year	30	20	50
Net Earned Premium Current Year	80	45	125
Gross Earned Premium Previous Year	37	23	60
Gross Earned Premium Current Year	103	57	160
Gross Technical Liabilities Previous Year			20
Gross Technical Liabilities Current Year			56
Operating Expenses Current Year			25

The FSB has recently launched interim measures that prescribe the calculation of the value of the assets, liabilities and capital requirement of short term insurers. The FSB document contains the following prescribed factors:

IBNR factors per development period:

	Period 0	Period 1
Guarantee	16.32%	5%
Liability	12.49%	4.47%
Engineering	6.62%	2.90%

Insurance Risk Factors

	Factor
Guarantee	50%
Liability	32%
Engineering	25%

Market Risk Factors:

	Factor
Cash	0%
Equity	38%

Credit Risk Factors:

	Factor
A+ to A-	1.03%
Unrated	3.4%

(i) Outline the differences between the new interim measures and previous liability and capital adequacy requirements in terms of

a. The valuation of each of the technical liabilities

b. Valuation of the capital adequacy requirements

[8]

The candidate does not have to quote any specific factor.

(ii) Calculate the differences between the new interim measures and the previous requirements for IBNR provisions, the Minimum Capital Requirement and the Solvency Capital Requirement, stating any assumptions made with reasoning. [9]

(iii) Comment on the implications of these differences for the company. [2]

(iv) Discuss the advantages of the interim measures compared to the previous requirements as well as any shortcomings still prevalent in the interim measures. [12]

At a recent management meeting, the following strategy for the next year was discussed.

a. Change the investment strategy by using 50% of the cash to buy either equities or bonds to increase investment income;
b. Increase the premium written for the guarantee and liability business by 20%.
c. Start writing engineering business. The NWP for the first year is expected to be fairly small but the three year projection is to grow rapidly.
d. The engineering book will be protected by an excess of loss and a catastrophe treaty.

(v) Discuss the implications of this strategy on the company's capital and IBNR given the introduction of the interim measures. [9]

A year later the company implemented the strategy above. However, the engineering premiums written were higher than initially projected and the forecast for the next year shows substantial growth. The management is unsure about the appropriate reinsurance for this book because

a. they are not sure that they have adequate underwriting experience in this class of business, and are concerned about unacceptable volatility in the underwriting results, and
b. they are concerned about the possible impact that the growth will have on their capital.

(vi) Discuss alternative reinsurance structures that will address the management's concerns and propose an optimal programme. [10]

[Total 50]

[Total 100]

