

EXAMINATION

31 May 2010 (am)

Subject F101 — Health and Care Principles

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, including 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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QUESTION 1

Describe briefly the main types of reserve that a health insurer would hold for its income protection business. [Total 4]

QUESTION 2

You are advising a very small private health insurer selling private medical insurance. The insurer's underwriting results have fluctuated significantly in recent years and the management is concerned about the insurer's viability.

- i. Outline the challenges that the underwriting results and the very small risk pool present to the insurer. [7]
- ii. Discuss possible strategies for managing these challenges. [7]

[Total 14]

QUESTION 3

A Total and Permanent Disability Benefit (TPDB) is a lump sum benefit paid to a life insured on total and permanent disability.

- i. Describe the advantages and disadvantages of this cover, as compared to income protection cover, from a policyholder and a healthcare insurer perspective. [4]
- ii. List and explain three different definitions of disability and their appropriateness to this type of benefit. [6]

[Total 10]

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QUESTION 4

You are the approved actuary to an established medium-sized healthcare company in Simindia. In the past the company has only sold individual income protection and critical illness policies as well as some individual private medical insurance (PMI) business. The company's competitors all offer group cover, and the company has now decided to sell group PMI, income protection and critical illness policies to employers for covering their staff. It is possible for employers to make it a condition of employment for all employees to join the appropriate scheme.

- i. Discuss how the assumptions used in pricing and reserving for the group PMI business would differ from those used for the individual business. [10]
- ii. Describe the risk management techniques which can be used for group income protection and critical illness business that are not suitable for use in individual business. [4]
- iii. Outline how the investment strategy would differ for the group income protection and group critical illness business compared to the individual business. [2]

[Total 16]

QUESTION 5

A health insurer is offering an underwriting-free upgrade of critical illness cover to current policyholders who do not have loadings for impaired health. The upgraded benefits would cover a wider range of critical illnesses than the standard policy.

- i. Discuss the advantages and disadvantages of the offer for:
 - a. Salespeople;
 - b. Current policyholders; and
 - c. The insurer. [9]
- ii. Describe the process that would be followed to determine the price of the additional benefit. [10]

[Total 19]

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QUESTION 6

An insurer writes individual life income protection policies. Its annual premiums are R500m. The insurer is concerned about overall losses on the portfolio (due to the current weakening economy) and has added an aggregate excess of loss (stop loss) arrangement with Reinsurer B to its current 50 / 50 quota share arrangement with Reinsurer A.

- i. Outline the key problems for the insurer with writing a stop loss reinsurance contract on income protection business and how could you mitigate these problems. [4]

The stop loss structure covers 90% of the insurer's claims from R275m to R350m. During the year the insurer has 135 claims of R50,000 per month (which are all still claims on 31 December). The treaty says that claims must be capitalised at 100 times the monthly benefit.

- ii. Explain why the reinsurer would only offer 90% cover, and why there is a cap on the reinsurance cover. [1]
- iii. Calculate the stop loss reinsurance claim. [5]
- iv. Calculate the total value of the insurer's claims for the year. [5]

[Total 15]

QUESTION 7

You work for a small insurance company that to date has only sold mortality benefits. You now want to launch an accelerated critical illness (CI) benefit.

- i. Describe the impact that this will have on your underwriting department. [4]
- ii. You have not yet decided whether to launch a 100%-only product, or one that pays different percentages of the sum insured for different severities. Outline the factors you would consider in making this decision. [6]

[Total 10]

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QUESTION 8

You have recently read an article published in a trade magazine which argued that Free Cover Limits (FCLs) were not necessary for insurance companies who wrote group insurance, and were merely an administrative burden to everyone involved.

- i. Set out the points that you would make in a letter to the magazine discussing the advantages and disadvantages for the insurer of doing away with FCLs in group insurance (your answer does not need to be in letter form). [6]
- ii. Describe how you would go about setting an appropriate FCL. [6]

[Total 12]

END OF PAPER