

EXAMINATION

6 June 2011 (am)

Subject F101 — Health & Care Fellowship Principles

Time allowed: Three hours

INSTRUCTIONS TO THE CANDIDATE

1. *Enter all the candidate and examination details as requested on the front of EACH OF your answer booklets.*
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 seven (7) questions, beginning your answer to each question IN A SEPARATE BOOKLET.*
6. *Candidates should show calculations where this is appropriate.*

AT THE END OF THE EXAMINATION

Hand in your answer booklets, with any additional sheets firmly attached to the correct booklet, 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

You are the government actuary to a medium sized middle income country with a well established health insurance market. The country has a reasonably deep and liquid equity and bond market and corporate governance is well established. As part of a regular review of the different acts regulating the health insurance market, you have been asked to determine an appropriate framework for the companies to report on solvency, operating profit and the fair treatment of customers.

- i. Outline how your recommendations for the reserving bases for the solvency and operating profit calculations would differ. Explain your reasoning. [2]
- ii. Based on your answer to (a) above, outline the key issues to consider in determining an appropriate level of capital for insurers to hold. [2]
- iii. Outline additional items or metrics that companies should report on, including reasons for inclusion. [5]

[Total 9]

QUESTION 2

You have been asked to develop a pre-funded long-term care product that will be marketed to young professionals so that they can provide care for elderly parents.

- i. Describe the benefits that would be included in such a policy, including add-ons to make the product more attractive to the target market. [7]
- ii. Outline the risks associated with the policy from the insurer's perspective. [8]

You have been asked to consider an up-front commission structure based on the first year's premium as opposed to commission based on a level percentage of premiums.

- iii. Evaluate the relative merits of these two approaches, taking into account how an up-front commission structure affects the risks identified above. [6]

[Total 21]

PLEASE TURN OVER

QUESTION 3

You have been asked to develop an investment strategy for an established book of PMI business.

- i. Briefly outline the ways in which the regulator can influence investment strategy. [5]
- ii. Describe the key factors (other than regulation) to consider in developing such a strategy. [9]

[Total 14]

QUESTION 4

A critical illness product includes a benefit for cancer. The level of the benefit depends on the stage of disease progression at the time of diagnosis. The stage is assessed by an independent panel of oncologists based on reports submitted by the claimant, and cases can be classified into four stages. The policy also defines five different types of cancer. A benefit payment is only made once and there are no reinstatements.

- i. State the customer needs that this benefit is designed to meet. [3]

The insurer is considering obtaining reinsurance cover for this policy.

- ii. Evaluate whether a treaty or facultative approach is appropriate. [3]
- iii. The reinsurer has proposed a surplus reinsurance treaty where the retention limit per claim is the cover for stage 2 of the type of cancer for that claim. Describe how this cover will work and discuss the merits of this proposal. [5]

[Total 11]

PLEASE TURN OVER

QUESTION 5

A country has a well-established private health insurance industry which services approximately 20% of the population while the balance relies on State facilities (which they can access for free). The Government is considering establishing Social Health Insurance for employed people earning above a defined income threshold. It would be compulsory for individuals earning above the income threshold to contribute a defined percentage of their income to Social Health Insurance. Individuals may elect to buy additional private health insurance cover for benefits in excess of those covered by Social Health Insurance.

- i. Discuss whether the Government should provide the Social Health Insurance benefits through its own health facilities or contract with private healthcare facilities (which offer a higher quality service). (5)
- ii. Discuss whether the Social Health Insurance premium should be set as a fixed percentage of salary. (4)

Total [9]

PLEASE TURN OVER

QUESTION 6

You are an actuary working in the pricing team of a large insurance company. For over ten years now your company has sold income protection (IP) products to employer groups. The benefit covers 75% of an employee's income, and pays till the maximum of the chosen normal retirement age (NRA) and age 65. The employer can choose to add an additional benefit of up to 15% of salary to pay for retirement funding, whilst the employee is disabled. The benefit increases at a fixed rate of 5% per annum. The definition of disability is "if you are unable to do your current occupation, or an alternative occupation that you could reasonably be expected to do given your education and training."

Your marketing actuary has approached you with the idea of launching an IP product for individuals. There are only two companies offering this product and the products have only been available for one year.

- i. Discuss the operational, risk management and product design issues you would need to consider if you want to launch an individual IP product. You must consider the features of the product that will make it more attractive and relevant to the individual life market. (10)
 - ii. Explain how you would estimate the effect that the following benefit design changes would have on claims experience:
 - a. An option to increase the NRA beyond age 65;
 - b. A shortened waiting period;
 - c. Benefit increases that are inflation linked;
 - d. A change in disability definition to own occupation; and
 - e. An increase in the replacement ratio. [8]
 - iii. Outline how you would go about pricing the individual life product. [6]
- Total [24]

QUESTION 7

A large multinational health insurer wants to launch a PMI product in a new market. You are the head of the product design team and have been asked to design a suitable product.

- i. List the features of the market and the stakeholders that you would need to consider in designing the product. [7]
 - ii. Outline the policy features that impact on the simplicity and clarity of the product from a customer point of view. [5]
- Total [12]

END OF PAPER