

# INSTITUTE AND FACULTY OF ACTUARIES

## EXAMINATION

5 October 2011 (pm)

### **Subject SA1 — Health and Care 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 before 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 three 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.*

<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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- 1** In Actuarial, competition for retail banking customers' business has become fierce. The banks have started to offer many rider benefits alongside their banking products, such as gym membership and car breakdown cover. The Bank of Actuarial has decided that it would like to offer its customers private medical insurance alongside its current account. All customers who take out the bank account will be automatically eligible for the PMI cover, without the need to be underwritten.

The bank approaches a leading PMI insurance company, and the insurer agrees to provide a group PMI product to the bank that will meet its requirements.

The next stage is to produce a premium quotation. The insurer therefore needs to decide how the premium will be structured, including possible rating factors.

- (i) Discuss how the premium could be structured. [4]

The bank needs to decide how the premium should be met, and in particular the extent to which the cost is passed onto the customers.

- (ii) Discuss how this issue may be addressed. [2]

The insurance company is considering how the experience and risks for this product might differ from those for an individual PMI product sold to one of its usual customers via an insurance intermediary.

- (iii) Discuss how the morbidity experience of the bank's product might differ from that of the insurance intermediary product. [6]

- (iv) Describe how other risks to the insurance company might differ. [6]

[Total 18]

- 2** An overseas regulator is designing a standardised template that can be used by local health and care insurance companies to submit solvency information on an annual basis to the supervisor.

Under the current reporting regime, assets are valued at market value and liabilities are valued using prudent assumptions. In addition to the policy reserves, insurers are required to hold capital requirements calculated using prescribed formulae. The template is expected to include a set of quantitative reporting forms and a valuation report.

- (i) List the information that should be included in this template. [20]

The overseas regulator is considering the introduction of a risk-based capital approach. Under this approach, the policy reserves will be calculated using best estimate assumptions and the additional amount of capital requirements will be quantified by assessing the financial impact of prescribed stress scenarios for the risks to which the insurer is exposed. In order for the regulator to assess the viability of this proposal, it wishes to expand the template to include information under the new approach as well as under the existing approach.

- (ii) Suggest the additional information to be included in the template. [7]

[Total 27]

- 3** (i) Outline State healthcare benefits provision in the UK. [6]
- (ii) Outline the features of insurance products that could be sold to replace this State provision. [5]

It has been proposed that the UK government could reduce the cost of healthcare to the taxpayer by withdrawing provision of free hospital treatment. All other healthcare provision would continue to be provided by the State.

Under this proposal all employees and employers would be required to contribute a fixed percentage of salary into a personal healthcare plan. The plan would be managed by an insurance company, which would invest these contributions on behalf of the individual. The funds would be used to purchase appropriate insurance or to pay directly for any hospital treatment required.

- (iii) Discuss this proposal from the perspectives of all affected parties, other than the insurance companies. [20]

A large UK health and care insurance company is thinking about entering this market if the proposal were to be enacted.

- (iv) Discuss the factors that it should consider in offering these personal healthcare plans. [24]
- [Total 55]

**END OF PAPER**