

INSTITUTE AND FACULTY OF ACTUARIES



EXAMINATION

30 April 2015 (am)

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 new page.*
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.

- 1** A large UK proprietary insurance group is seeking a buyer for its health insurance subsidiary. The subsidiary specialises in individual and group income protection (IP) insurance business.

As part of this process, the insurance group will prepare an Information Memorandum (IM). This document is provided by the seller to prospective bidders with the aim of marketing the business for sale.

- (i) Set out a list of the information that is likely to be included in this IM. [25]

In the financial reporting section of the IM, one of the items appearing in the Modified Statutory Basis (MSB) balance sheet is the Deferred Acquisition Costs (DAC) asset.

- (ii) Describe the issue that a DAC asset is designed to address and how it achieves this. [4]

- (iii) State the conditions under which acquisition costs should not be deferred or may only be partially deferred, under the MSB regulations. [2]

The value of the DAC asset for the subsidiary's individual IP insurance business is significantly higher than that for the group IP insurance business.

- (iv) Suggest possible reasons for this. [4]

The subsidiary has produced two sets of projections of the expected future annual profits arising from its in-force individual IP insurance business, excluding future new business.

One set of projections is of the expected future annual profits determined under MSB reporting regulations. The other has been produced using an embedded value approach, under which annual profit is defined as the change in embedded value over the year.

These projections show that the expected annual profits under MSB regulations are higher than the expected embedded value profits.

- (v) Justify this difference. [5]

[Total 40]

2 A reinsurer specialising in health insurance business is currently undertaking a project to review the quality and effectiveness of its data management.

- (i) Outline the aspects of data and its management that could cause issues for the reinsurer and that it therefore needs to consider in its review. [7]
- (ii) Outline the potential benefits of good data management to the reinsurer. [12]
- (iii) List the statistical information that the reinsurer should require a ceding insurer to provide. [5]

The reinsurer has received a request from a ceding insurer for the termination of an existing reinsurance treaty covering guaranteed premium standalone individual critical illness insurance business. The reinsurer needs to determine the recapture value of the treaty, i.e. how much the ceding insurer should pay the reinsurer in order to be released from the treaty.

- (iv) Propose, with justification, the most appropriate theoretical approach by which the recapture value should be determined. [2]
- (v) Describe how the recapture value would be determined under this approach, including how the assumptions would be set. [12]

The reinsurer has decided not to charge the recapture value that was calculated using this theoretical approach.

- (vi) Suggest possible reasons for this decision. [2]
- [Total 40]

- 3** ABC Health sells a wide range of health and care insurance products, including individual private medical insurance (PMI).

A major competitor has recently introduced a new premium rating factor into its individual PMI product: the month in which the customer was born. An analysis conducted by ABC Health has confirmed that its PMI claims experience varies by the month in which the policyholder was born.

Before the competitor introduced this change, premium rates offered by the two companies were broadly in line with each other.

ABC Health has decided not to introduce month of birth as a new premium rating factor.

- (i) Suggest possible reasons for this decision. [6]
 - (ii) Explain what the potential risks are for ABC Health given its decision not to introduce month of birth as a new premium rating factor. [6]
 - (iii) Suggest actions that ABC Health could take to mitigate the potential impact of not introducing month of birth as a new premium rating factor. [8]
- [Total 20]

END OF PAPER