

INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

30 September 2014 (pm)

Subject ST1 – Health and Care Specialist Technical

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 seven 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.

<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** Outline the key product features of a group critical illness insurance scheme. [6]
- 2** A health insurer currently reinsures 80% of its individual critical illness insurance business on a risk premium basis. The Chief Financial Officer has stated that the company is currently passing a significant proportion of its profits to the reinsurer and so has suggested that the level of reinsurance retention should be increased.
- Discuss this suggestion. [13]
- 3** A health insurer has a large portfolio of private medical insurance business.
- Describe how reserves for the following claims would be set:
- (a) A large cancer claim, the spend on which is already five times more than the average cost for a cancer claim and remains ongoing.
 - (b) A claim for back pain, requiring a series of physiotherapy treatments, which has just been reported.
 - (c) A minor sports injury claim that required only one treatment and has already been paid.
- [9]
- 4** (i) Explain what is meant by moratorium underwriting, as used in private medical insurance (PMI) business. [4]
- A health insurer has recently moved from front-end underwriting to moratorium underwriting for all new PMI policies sold. Under this new approach, the moratorium exclusion is completely removed five years after initially taking out the PMI policy, irrespective of policyholder health and treatments received.
- (ii) Discuss how the claims experience is likely to differ under this new moratorium underwriting approach compared with if the previous front-end underwriting approach had continued. [6]
- [Total 10]

5 A health insurer writes individual and group income protection insurance business.

The analysis of surplus on a realistic valuation basis shows that this business has been making morbidity and persistency losses over the last few financial years.

(i) Outline the investigations that the insurer should carry out in order to identify in more detail the causes of these losses. [10]

(ii) Suggest actions that the insurer could take in order to avoid making such morbidity losses in the future. [12]
[Total 22]

6 A large well-established health and care insurer sells critical illness, income protection, long term care and private medical insurance contracts.

Explain the effects that the following developments would have on its pricing:

(i) The introduction of home use test kits which identify the onset of Alzheimer's disease five years before it presents any symptoms. (Alzheimer's disease leads to cognitive impairment, particularly amongst the elderly.) [10]

(ii) The introduction of a drug which doubles the probability of surviving a stroke. [10]
[Total 20]

7 An insurer writes a range of long term health insurance business. Its Chief Financial Officer has suggested that, in order to cut costs, the amount of underwriting that the company carries out should be reduced.

(i) Discuss the advantages and disadvantages of this suggestion. [13]

(ii) Discuss ways in which the company could reduce underwriting costs. [7]
[Total 20]

END OF PAPER