

INSTITUTE AND FACULTY OF ACTUARIES



EXAMINATION

30 September 2013 (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 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>

- 1** A large health and care insurer sells long term health and care insurances, including income protection, long term care and critical illness insurances. It is currently reviewing its range of products.
- (i) Suggest reasons why a health and care insurer may choose to stop selling a particular product line. [8]

Following the review, the insurer has concluded that its critical illness insurance products do not appear to be profitable. It has therefore proposed that it stops selling this business.

- (ii) Discuss the potential implications of this proposal. [12]

These critical illness products are currently reinsured using a quota share arrangement, on an obligatory basis.

- (iii) Discuss the possible reinsurance implications for the insurer and the reinsurer of discontinuing sales of critical illness products. [7]

The marketing director has stated that he would prefer to keep critical illness insurance in the company's overall range of products.

- (iv) Suggest alternatives to discontinuing the critical illness insurance products. [15]
[Total 42]

- 2** A health and care insurer is interested in making use of new technology to improve its decision making process.

It has decided to offer online health monitoring to its income protection insurance policyholders. Policyholders would be asked to register their initial data including age, gender, height, weight, medical history and current medication. They would then be asked to record their weight, exercise undertaken and calorie, cigarette and alcohol consumption on a daily basis.

Future developments include the option to have personalised health messages such as a medication reminder sent to a mobile phone number and a mobile phone "app" (application) which allows barcodes of food to be scanned before consumption.

- (i) Suggest other types of personalised healthy living messages that could be provided to the policyholder. [4]
- (ii) Describe the advantages to the health and care insurer of the proposed online health monitoring. [7]
- (iii) Outline possible issues that the insurer should take into account whilst trialling this new technology. [8]
[Total 19]

- 3** (i) Explain each of the following functions in the context of national healthcare financing:
- (a) revenue collection
 - (b) pooling of resources
 - (c) purchasing of interventions

[9]

The following criteria are amongst those normally used to assess different healthcare funding systems:

- transparency of cost
- social fairness
- consumer empowerment
- quality of care, including encouragement to follow best practice
- conflicts of interest
- matching expectations with treatment capacity

- (ii) Assess the following funding systems based on the criteria listed above:

- (a) General taxation, with free healthcare provided by national health services.
- (b) Social health insurance contributions paid by the employer and the employee, with provision through competing insurers.
- (c) Voluntary health insurance, paid by the employer.
- (d) Mandatory catastrophe insurance, paid by the individual, which covers all medical expenses above a threshold, plus a tax-protected savings account which aims to cover medical expenses below the threshold.
- (e) Voluntary health insurance, paid by the individual, with related tax subsidies; those not taking out insurance will remain in the national health service system.

[30]

[Total 39]

END OF PAPER

