INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

21 April 2017 (am)

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 must not start writing your answers in the booklet until instructed to do so by the supervisor.*

3. *You have 15 minutes of planning and reading time before the start of this examination. You may make separate notes or write on the exam paper but not in your answer booklet. Calculators are not to be used during the reading time. You will then have three hours to complete the paper.*

4. *Mark allocations are shown in brackets.*

5. *Attempt all six 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 (i) Describe the two main forms of critical illness insurance benefit. [4]

(ii) Define the term assessment period, in relation to a critical illness insurance product. [1]

(iii) Explain why a critical illness insurance provider may include an assessment period clause in its terms and conditions. [3]
[Total 8]

2 ABC Healthcare is a health insurance company which reinsures a significant proportion of its income protection and critical illness insurance business.

One of the company's reinsurers, XYZ Reinsurance, has recently had a very significant credit downgrading by all the credit rating agencies. The Finance Director of ABC Healthcare consequently has serious concerns about the ongoing solvency of XYZ Reinsurer.

(i) Suggest the likely benefits of analysing reinsurance credit or counterparty risk. [3]

(ii) Outline the potential costs to ABC Healthcare of the insolvency of XYZ Reinsurance. [2]

(iii) Suggest, with reasons, 4 different ways in which the total reinsurance credit or counterparty risk of ABC Healthcare could be reduced. [4]

The reinsurance treaty with XYZ Reinsurance has a clause allowing ABC Healthcare to immediately terminate the reinsurance treaty in the event of such a downgrade.

(iv) Discuss the potential actions ABC Healthcare could take if it does decide to terminate the treaty. [4]

(v) Outline how the risk profile of ABC Healthcare would alter immediately after the treaty is terminated. [2]
[Total 15]

3 A large well established health insurer currently sells critical illness (CI) insurance products through a tied salesforce.

Sales and profits have been falling so the insurer has appointed a new marketing manager whose main objective is to increase sales of CI insurance policies.

He has suggested that the company runs advertisements during a popular reality show on national television. The advertisement will be for the current CI insurance product and potential policyholders will be directed to a website to make their application.

(i) Give three advantages and three disadvantages of the proposed television campaign to the company. [3]

It is expected that the profitability of the combined portfolio of policies sold partly through the television campaign and partly through the existing tied salesforce will differ from the profitability of the product when it was just sold by the sales force. The insurer has not yet decided whether to offer the same price to both distribution channels or whether to reprice those policies sold under the new approach.

(ii) Explain why the profitability is expected to differ, including consideration of:

- differences in experience between the two portfolios.
- new business volumes and mix.
- other pricing inputs and profitability drivers. [18]

[Total 21]

4 Describe how the Value at Risk (VaR) approach may be used to evaluate the risk-based capital requirement for a health and care insurance company. [10]

5 (i) Explain, in the context of income protection (IP) business:

(a) deferred period
(b) replacement ratio
(c) rehabilitation / partial benefit

[3]

(ii) State reasons why IP insurance contracts normally have a non-zero deferred period. [2]

In country A, the length of period for which statutory sickness benefits are payable to government workers is dependent on each individual's length of service, as set out in the table below:

Length of service	*Length of period for which statutory sickness benefits are payable*
Up to 1 year	3 months
Between 1 to 2 years	6 months
Between 2 to 3 years	12 months
More than 3 years	24 months

An established insurer in country A currently only offers IP insurance products with a deferred period of 12 months. It has decided to launch a new IP insurance product to target the specific needs of government workers in country A.

(iii) Discuss the considerations that this insurer should take into account before launching this product, including the following:

(a) pricing and profitability
(b) marketability and saleability
(c) operational factors

[15]

[Total 20]

6 A large health insurer currently writes an extensive book of private medical insurance (PMI) business in its domestic market, Country A, to individuals and groups.

Recently country B has been recruiting large numbers of people working in mining and mineral extraction industries from country A to work in country B for one to five years.

The Sales Director has proposed that an international version of its PMI product should be developed. This will be marketed to such individuals looking to move to work abroad in Country B (where there is no State healthcare provision available for such individuals).

(i) Describe how the benefits for the targeted insured members for such a product would be designed. [6]

(ii) Describe the operational changes that would need to be made by the insurer in respect of the proposed new PMI version. [3]

(iii) Describe how the proposed new PMI product version would be priced. [8]

(iv) Assess the Sales Director's proposal, including the possible risks. [9]
[Total 26]

END OF PAPER