

EXAMINATION

7 October 2010 (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 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.

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) State the principles of investment. [2]

A health and care insurer writing a range of long-term business outsources the management of the assets backing the reserves to an external fund manager.

- (ii) Outline the factors to take into account in assessing the performance of the fund manager. [4]
[Total 6]

- 2** (i) Outline the different types of commission that may be paid to a sales adviser selling health and care products. [3]

A health and care insurer is considering stopping paying commission, and moving to alternative methods of remunerating sales advisers.

- (ii) Discuss the possible reasons for this move. [3]
[Total 6]

- 3** (i) List the reasons why a health and care insurer might want to analyse its supervisory surplus and the change in its embedded value. [5]

A health insurance company has been making losses over the last few years and its solvency position has worsened. The company has performed analyses of experience, surplus arising and the change in embedded value and is using this to reassess its view of how to manage the future.

- (ii) Suggest actions that may be taken to improve the financial position of the company. [10]
[Total 15]

- 4** (i) Discuss the following profit criteria commonly used for the pricing of health and care insurance products:
- (a) net present value
 - (b) internal rate of return
 - (c) discounted payback period
- [8]

You have been given the following pricing cashflows of a portfolio of health and care policies. It should be assumed that the premiums are received at the start of each year, the profit cashflows arise at the end of each year, the survivorship factors are the probability of surviving from the start of the policy to the end of the year shown and the figures given are per policy in-force at time zero.

Product A

Year	1	2	3	4	5
Premium	100	100	100	100	100
Outgo	200	50	50	50	50
Profit	-100	50	50	50	50
Survivorship factor	0.9	0.8	0.7	0.6	0.5

- (ii) Calculate the following profit criteria at time zero, using a risk discount rate of 8% p.a.:
- (a) net present value as a percentage of the present value of premiums
 - (b) discounted payback period (in whole years)
- [5]

You have also been given the following pricing information of another portfolio of health and care contracts.

Product B

Year	1	2	3	4	5
Premium	100	100	100	100	100
Outgo	150	60	70	80	90
Profit	-50	40	30	20	10
Survivorship factor	0.9	0.8	0.7	0.6	0.5

Net present value (NPV) 14.66
 Present value of premiums (PVP) 285.62
 NPV / PVP 5.1%

Discounted payback period 3 years

- (iii) Comment on the relative financial attraction of the two products. [2]
 [Total 15]

- 5** A health insurance company sells pre-funded long term care insurance business, funded either by a single premium or by level annual premiums.

These products currently do not provide a lump sum cash value on lapse, but the insurer is considering whether to introduce this feature.

- (i) Discuss whether the products should offer a lump sum cash value for policyholders who wish to surrender their policy. [7]
 - (ii) List the data and assumptions required in order to determine the cash values, if the suggestion goes ahead. [3]
- [Total 10]

- 6** A large health and care insurer is well established in the critical illness market. The marketing manager has proposed introducing tiered benefits as a variant to the standard critical illness product. None of its competitors is currently offering a tiered benefits critical illness product.

- (i) Outline the product features of a critical illness policy with tiered benefits. [4]
 - (ii) Discuss the proposal to introduce tiered benefits. [14]
- [Total 18]

- 7** A small health and care insurer is considering launching a group Locum Protection insurance product for chiropractors.

Locum Protection insurance is a form of income protection insurance which is purchased by professionals. It has a short deferred period and offsets the salary and other employment costs of a temporary replacement professional by paying a regular income during periods of incapacity of nominated staff.

- (i) Outline the needs that this product addresses. [4]
 - (ii) Discuss the risks to the insurer arising from selling this product. [18]
 - (iii) Discuss how the insurer might sell this product. [8]
- [Total 30]

END OF PAPER