

# EXAMINATION

14 April 2008 (pm)

## 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 at 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.*

*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** An employer plans to introduce a flexible benefits package for all staff. Each employee will be allocated annually a fund which may be used to purchase benefits. The fund will be calculated as the notional value of the current benefits given to employees. The fund can be used to purchase additional holiday, gym membership, travel insurance cover, life assurance cover and a range of health insurance benefits (excluding income protection). Employees can increase the value of their fund by reducing any existing benefits or holiday. Any fund value not spent will be added to basic salary.
- (i) Suggest suitable health insurance benefits which might be included in the overall package. You should include a brief description of the cover and suggest alternative benefit covers. [8]
  - (ii) Describe the potential for anti-selection under the various benefits of the scheme, discussing how you would manage the anti-selection risk. [5]
  - (iii) Explain why income protection cover is usually provided as part of the basic employment benefits rather than as part of a flexible benefits package. [4]
  - (iv) Suggest possible options and design features if income protection cover had been included in the flexible benefit arrangement. [5]
- One of the employees has suggested a discount on each and every health insurance contract suggested in section (i) if gym membership is purchased.
- (v) Comment on the suggestion. [4]
- [Total 26]

- 2** The health insurance division of a UK bancassurer writes all of its healthcare business in the UK. The health insurance division has been put up for sale. Your company, a major UK health insurance provider, has been invited by the bancassurer to bid for the business of the health insurance division. You have been assigned by the board as part of the project team on this merger and acquisition project.
- (i) List the information you would request in order to place a value on the target business. [15]
- From the information you obtain from the target company, you notice that the mortality/morbidity assumptions used in the target company's published embedded value calculations are markedly different from the best estimate assumptions used by your own company.
- (ii) Suggest possible reasons behind the differences. [7]
  - (iii) Describe the methodology and assumptions you would use to place a value on the in-force business. [10]
  - (iv) Discuss the other factors that you would consider before submitting the bid. [12]
- [Total 44]

**3** You are the member of an actuarial task force (under the UK Actuarial Profession) which has recently been set up to examine the current approaches in the area of reserving with a view to recommending suitable practice. At the initial stage, the task force wishes to get details of reserving practices in income protection and critical illness from all the insurers in the UK market. It has been agreed that a questionnaire will be sent out for this purpose.

- (i) Recommend what should be covered in this questionnaire. (Your answer does not need to cover the design or style of the questionnaire.) [20]

The representatives of an overseas actuarial professional body have approached your task force asking for help with designing a survey in the area of pricing practices.

- (ii) Suggest the additional topics that you might include in the questionnaire. [5]

While the exercise on benchmarking and recommending good practice proves to be a success on reserving, members of your task force have expressed concerns over the limitations of such a survey on pricing practices.

- (iii) Suggest the areas in which potential problems could arise in respect of benchmarking pricing practices and making recommendations on suitable practices to the market. [5]  
[Total 30]

**END OF PAPER**