INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

20 April 2012 (pm)

Subject ST4 – Pensions and other Benefits 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) List the Technical Actuarial Standards issued by the Board of Actuarial Standards in the United Kingdom (UK). [3]

(ii) Outline the issues that a UK actuary should consider when deciding whether actuarial work done for an overseas pension scheme should comply with the various Technical Actuarial Standards. [4]
[Total 7]

2 A pension scheme sponsor is seeking to reduce investment risk by purchasing investment products from an insurance company.

(i) Outline the options available. [4]

(ii) Discuss the financial implications of taking this approach. [4]
[Total 8]

3 A defined benefit pension scheme provides members with a single life pension at age 65, which increases each year in line with price inflation. At retirement, members can choose either or both of the following options:

- Exchange up to 25% of the pension for an immediate lump sum, calculated as £15 for every £1 per annum of pension given up.

- Swap the remaining pension that increases with price inflation for a non-increasing pension that will be 30% higher.

Discuss the issues that members should consider in making their decisions regarding these two options. [12]

4 A defined benefit pension scheme currently has 80% of its assets invested in equities and 20% in bonds. The scheme sponsor wishes to reduce the investment risk when market conditions allow.

The scheme is proposing to put in place a strategy to reduce risk over the longer term by establishing a process whereby the percentage equity holding is automatically reduced in stages when pre-arranged funding levels are reached.

(i) Discuss the advantages and disadvantages of this proposed strategy. [5]

(ii) Outline the issues that need to be considered before adopting the process. [4]

(iii) Outline three other high level approaches that could be considered in order to reduce risk for the scheme generally, without reducing the pension benefits.[3]
[Total 12]

5 A defined benefit pension scheme has just completed a funding valuation using a prudent actuarial basis. The scheme is now considering a review of the following items:

- the transfer value basis;
- the factors used for exchanging pension for cash at retirement;
- the early retirement reduction factors; and
- the late retirement factors.

(i) Discuss whether it is appropriate to use best estimate or prudent actuarial assumptions, for each of the items listed above. [6]

(ii) Outline the relative advantages of using fixed or market related factors. [4]

(iii) Set out the other issues that should be considered when determining appropriate factors for actuarial calculations. [6]
[Total 16]

6 (i) List the main sources of surplus or deficit in a defined benefit pension scheme. [4]

The latest funding valuation of a small defined benefit pension scheme has revealed a significant surplus. The previous valuation had shown a small deficit. An analysis of the experience between the valuations has revealed that the surplus arising in the latest valuation was almost entirely due to the death of one pensioner with no dependants, the value of whose benefits was a significant proportion of the scheme's liabilities.

(ii) Discuss the options available to the scheme trustees in respect of this surplus, including examples of how it could be used. [10]

The analysis also revealed that salary increase experience over the inter-valuation period reduced the surplus available by a small amount. The Finance Director of the sponsoring employer believes that average salary increases over the period were broadly equal to the actual inflation experienced over the period. The previous valuation had assumed that salary increases would be in line with inflation. He has asked the actuary to explain why there has been an experience loss in respect of salary increases.

(iii) Suggest the points that the actuary might make in her response to the Finance Director. [6]
[Total 20]

7 Currently, the government of a developed country imposes a requirement for its residents who have defined contribution (DC) pension provision to use the whole of their DC funds to purchase an annuity with an insurer at age 65. This policy is unpopular with residents of the country because annuities are viewed as expensive and inflexible.

(i) Discuss the options that the government may consider in order to address residents' concerns. [5]

A working party appointed by the government has proposed that the requirement to purchase annuities is relaxed. Under this proposal, residents with DC funds would be able to retain some (or all) of their DC funds in their own personal investment account. Residents would be able to withdraw money from these accounts to meet their ongoing needs.

(ii) Discuss the factors which may affect whether a resident chooses to take advantage of this increased flexibility. [8]

The government currently provides a state pension on a means-tested basis. Residents over age 65 who have a total income of less than $100 per week are provided with a state pension of $100 per week. The means test is carried out on an annual basis and looks at the resident's income over the month before the date of each test. The government has reservations about the working party's proposal, as it wishes to avoid an increased number of residents becoming dependent on state pension provision.

(iii) Explain how the proposed system could lead to an increase in the number of residents who are eligible to receive a state pension. [2]

(iv) Discuss safeguards that could be built into the proposed system to ensure residents are adequately provided for in retirement. [10]

[Total 25]

END OF PAPER