EXAMINATION

19 September 2008 (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 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 7 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 You are the actuary to a large defined benefit pension scheme which is scheduled to undertake a funding valuation in the near future.

(i) With reference to the Actuarial Control Cycle, set out the key stages of the valuation process that should be undertaken. [4]

(ii) Describe why the actual experience should be monitored. [2]

(iii) Suggest why you might not assume past experience will be repeated. [2]
[Total 8]

2 A friend of yours has a retirement savings policy which matures shortly on her 65^{th} birthday at which time she has to choose one of the following options:

(a) a lump sum of £150,000

(b) an annual fixed single life income of £10,000

(c) an annual single life income of £7,000 (increasing annually in line with prices)

Discuss the issues she should consider in making her decision. [8]

3 The Government of a developing country has decided to monitor the management of the country's largest defined benefit pension schemes by looking at the role of trustee boards, their documented policies and their supervision and monitoring procedures.

(i) Suggest the key features of best practice in these areas. [7]

(ii) List the possible forms of controls the Government may impose to improve the security for members in each of the three areas mentioned above. [3]
[Total 10]

4 You have been asked to advise the government of a developing country which is reviewing its state pension provision.

Currently a flat rate pension is available at age 55 to all citizens, whether employed or self-employed, who have paid flat rate contributions for 10 years or more. On death, the pension continues at half rate to spouses or other dependants. The pension and contribution rates are reviewed from time to time in line with average earnings.

(i) Over recent years, the contributions have been insufficient to meet benefit outgo, with the balance met out of general taxation. Discuss how this position may have arisen. [5]

(ii) Discuss possible steps which the country can take to bring contributions more into line with expected benefit outgo. [8]
[Total 13]

5 A company operates a pension scheme to which both the company and the active members contribute 5% of basic salary in respect of retirement benefits. To cover expenses, the company deducts 0.5% of salary from the joint contribution before it is invested into an individual account for each member.

At retirement, the accumulated cash sum is converted into an annuity using rates which are reviewed by the scheme's actuary every three years. Annuities are paid out of the fund for the lifetime of the member, and subsequently at 50% for the lifetime of a nominated dependant.

On death in service, the scheme provides a lump sum of twice basic salary, and an annuity of 25% of basic salary payable for the lifetime of a nominated dependant.

(i) Set out the key financial and demographic risks faced by the company. [5]

(ii) Discuss how these risks might be managed. [10]
[Total 15]

6 As actuary to a defined benefit pension scheme, you have recently carried out an actuarial valuation which has disclosed a large and unexpected surplus on the ongoing funding basis. Legislation in the relevant country requires that any valuation surplus needs to be eliminated over the next three years.

(i) The trustees have asked you to set out the options available to eliminate the surplus. Discuss the factors you would take into account and give examples of the different ways that the surplus could be used. [10]

Pensions in payment from the scheme are currently paid out of the fund and there are no guaranteed increases to benefits in payment. They are reviewed from time to time, and an appropriate allowance for the cost of any discretionary pension increases is made in the ongoing funding basis.

The trustees are considering buying out the liability for existing pensioners and their dependants with an insurance company.

(ii) Discuss the issues that the trustees should consider before making a decision.
[10]
[Total 20]

7 You are the actuary advising a company which is setting up a pension scheme for the first time. It is proposed that the pension benefit for a member who is in service at the specified retirement age is calculated as the greater of:

- 1/100th of basic salary at retirement for each year of completed company service; and
- the benefit purchased from a defined contribution account funded by a contribution of 5% of salary from the member and 5% of salary from the company.

You have been asked to advise the company on the options for members who leave service before the specified retirement date.

(i) Discuss the factors which the company might take into account when designing benefits and explain these factors in relation to possible benefit designs. [10]

(ii) Explain the purposes and key features of the following types of actuarial valuations for this pension scheme:

- Funding
- Accounting
- Cost of providing guaranteed benefits from an insurance company
- Bulk transfer value to another pension scheme

[16]
[Total 26]

END OF PAPER