

# EXAMINATION

11 April 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** A company is proposing to cease accrual to its defined benefit pension scheme. As a consequence, all the active members will leave pensionable service and become deferred pensioners.

Discuss the options available to the trustees to meet the provisions of outstanding benefit payments, stating the risks of each option from the trustees' perspective. [8]

- 2** You have been appointed as actuary to Company X, a young and dynamic advertising agency. Employees are highly incentivised, with a relatively low basic salary but very high levels of potential performance related pay. They are all on fixed term contracts of 10 years. Voluntary turnover of staff is high, with the average duration of employment being two years. The ethos of Company X is to "recognise and reward success but not tolerate failure". The managing director has approached you with an instruction to design a defined benefit pension arrangement for the employees which is in keeping with the company ethos and the current pay structure.

Discuss the points that you would make in your advice taking into account the main features of a typical pension scheme. [10]

- 3**
- (i) List the roles the State is likely to play in relation to retirement benefit provision. [2]
  - (ii) Outline arguments for and against advance funding of social security systems. [4]
  - (iii) Describe how the State may use the taxation system to encourage provision for retirement by or on behalf of individuals. [4]

[Total 10]

- 4 You are the actuary to a final salary pension scheme whose members contribute at the rate of 5% of pensionable salaries. An actuarial valuation of the scheme has recently been completed and the following information is available:

<i>Present value of:</i>	<i>Units (million)</i>
Benefits for pensioners and deferred pensioners	170
Past service benefits for active members allowing for future salary increases	380
Future service benefits for current active members allowing for future salary increases	480
Future contributions by all current members	180
Contributions by current active members in the year after the valuation date	20

<i>Valuation assumptions:</i>	<i>% per annum</i>
Discount rate	6
Salary increases	4
Price inflation	3
Revaluation on deferred benefits	3

The average term to retirement of the active members weighted by salaries is 10 years.

- (i) Define and calculate the standard contribution rate and actuarial liability using the Attained Age Funding Method. [3]
  - (ii) Estimate the standard contribution rate using the Projected Unit Funding Method. [3]
  - (iii) Estimate the standard contribution rate using the Current Unit Funding Method. [4]
- [Total 10]

**5** You are the adviser to a large self administered defined contribution pension scheme. You have been asked to analyse the potential risks for the sponsor, trustees and the scheme members under the following headings:

- Administration
- Investment
- Charges
- Member Understanding

Discuss the potential risks and how they might be mitigated.

[14]

[Total 14]

**6** You are the actuary to a defined benefit pension scheme. As part of the valuation, the trustees are reviewing the scheme's investment strategy and you have recommended an asset liability modelling (ALM) exercise be carried out.

- (i) Explain why the scheme's investment policy should be reviewed as part of the valuation. [3]
- (ii) Outline the general issues that should be considered in the investment strategy review. [4]
- (iii) State the objective of an ALM exercise. [1]
- (iv) List four distinct measures of risk that could be used when setting the objectives of the ALM exercise. [2]
- (v) Describe the information you will need to perform the ALM exercise. [4]
- (vi) Describe the results from the ALM exercise, how these can be used and any limitations. [6]

[Total 20]

- 7**
- (i) List four scenarios where a defined benefit pension scheme sponsor's covenant would not require detailed investigation by the trustees. [2]
  - (ii) Describe the terms "viable ongoing" and "in distress" in relation to the status of a scheme sponsor. [2]
  - (iii) A Scheme valuation has revealed a deficit of £50m on a specified ongoing funding basis. Suggest, with reasons, what information you would need to determine whether the Scheme Sponsor is "viable ongoing" or "in distress". [11]

Given the past service deficit, the Sponsor is looking at reducing its costs and mitigating the risks of the Scheme.

- (iv) Discuss how the use of early retirement options may help. [4]
- (v) Discuss briefly the issues the Sponsor should consider if they want to propose that members exchange their pension with inflation linked annual increases in retirement for a higher starting pension without pension increases. [2]
- (vi) Outline the advantages and disadvantages for the Sponsor of offering transfer values that are 10% greater than the standard transfer values that are available to members for a limited period only. [7]

[Total 28]

**END OF PAPER**