

EXAMINATIONS

19 April 2000 (am)

Subject 304 — Pensions and Other Benefits

Time allowed: Three hours

INSTRUCTIONS TO THE CANDIDATE

1. *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.*
2. *You must not start writing your answers in the booklet until instructed to do so by the supervisor.*
3. *Write your surname in full, the initials of your other names and your Candidate's Number on the front of the answer booklet.*
4. *Mark allocations are shown in brackets.*
5. *Attempt all 6 questions, beginning your answer to each question on a separate sheet.*

AT THE END OF THE EXAMINATION

Hand in BOTH your answer booklet and this question paper.

*In addition to this paper you should have available
Actuarial Tables and an electronic calculator.*

- 1** Discuss the different ways in which the State can help to ensure that all individuals have adequate benefit provision. [7]
- 2**
- (i) List the possible ways in which outstanding benefit payments under a defined benefit pension scheme may be provided when the scheme is discontinued. [3]
 - (ii) Discuss briefly the advantages and disadvantages of each approach listed in (i) from the point of view of the member. [4]
- [Total 7]
- 3** You have recently undertaken an actuarial valuation of a defined benefit scheme using prescribed assumptions. Liabilities are discounted using a current domestic bond rate. Other assumptions are set out in legislation and have not changed for many years. The results of the valuation show that assets are somewhat lower than the assessed value of liabilities. The finance director has expressed surprise because at the previous valuation assets exceeded liabilities.
- Describe with reasons why the funding position could have changed between the two valuation dates. [9]
- 4** A scheme provides death in service cover of:
- lump sum of $2 \times$ basic salary; plus
 - pension for spouse of 25% of basic salary.
- (i) List the principal assumptions required to determine the cost of the benefits. [3]
 - (ii) Outline the factors that need to be considered to set the assumptions. [12]
 - (iii) Three life companies have quoted for insuring the death benefits. The three quotations vary considerably. Explain with reasons why the quotations could be so different. [5]
- [Total 20]

- 5** You are the actuary to a final salary pension scheme. An actuarial valuation has just been completed and the following information is available:

	Currency Units
Value of benefits for pensioners and deferred pensioners	1,700
Value of past service benefits for all in service members allowing for future salary increases	3,800
Value of future service benefits for all in service members allowing for future salary increases	8,000
Value of benefits accruing for all members in the year after the valuation date allowing for future salary increases	500
Value of future service benefits for members aged 30 allowing for future salary increases	240
Value of future contributions by all members	3,000
Value of contributions by all members in the year after the valuation date	200
Value of all future contributions by members aged 30	100
Members contribute at the rate of 5% of salary	

- (i) Define and calculate the standard contribution rate and actuarial liability for each of the following funding methods.
- (a) Entry Age (new members assumed to enter at age 30)
 - (b) Projected Unit
 - (c) Attained Age [12]
- (ii) Discuss the characteristics of the standard contribution rate and actuarial liability for each of the three funding methods. [10]
- [Total 22]

- 6** A company operates a pension scheme for its employees who are allowed to join after ten years service. The scheme provides a pension at age 65 of a fraction of final salary for each year of service as a member of the scheme plus a spouse's pension on death after retirement.

Members contribute 5% of salary. On leaving service or the scheme the member is entitled to a deferred pension at age 65 based on salary at leaving and completed scheme membership.

- (i) Outline the possible advantages and disadvantages to the member and company of the ten year waiting period. [4]
- (ii) The Company wants to consider providing benefits for future employees only in respect of the ten year waiting period. Outline the different ways in which this can be achieved and the practical and financial issues that need to be considered. [12]
- (iii) The Company wants to allow members to transfer their pension rights to alternative arrangements. Two proposals have been made to calculate the amount available for transfer:
 - Method (a): The present value of the deferred benefits; or
 - Method (b): Double the contributions that have been made to the scheme by the member.

You have been asked to draft a short report for management which should:

- outline briefly the practical issues raised by the introduction of transferability;
- discuss in detail the issues that need to be considered when setting the actuarial basis for calculating the present value suggested in (a); and
- outline the advantages and disadvantages of each of methods (a) and (b).

Draft your report (4 marks are available for drafting).

[19]

[Total 35]