

# EXAMINATIONS

28 April 2004 (am)

## Subject 304 — Pensions and Other Benefits

*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 8 questions, beginning your answer to each question on a separate sheet.*

### **AT THE END OF THE EXAMINATION**

*Hand in BOTH your answer booklet, with any additional sheets firmly attached, and this question paper.*

<p><i>In addition to this paper you should have available Actuarial Tables and your own electronic calculator.</i></p>
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**1** Discuss the advantages and disadvantages of direct property investment for a defined benefit scheme which is closed to new entrants. [6]

**2** You have been asked to advise an employer who sponsors a final salary pension plan which has the following features:

- The plan has an accrual rate of  $1/80^{\text{th}}$  for each year of service.
- Normal retirement age is age 65.
- It does not provide any increases to pensions in payment.
- Employees who leave employment with less than 5 years service receive no benefit. Employees who leave after 5 years are entitled to a deferred pension payable from normal retirement age — deferred pensions are not revalued between leaving and retirement.
- On early retirement employees are given a pension equal in actuarial value to the leaving service deferred benefit.
- On death in service, the plan pays a lump sum of 5 times salary to an employee's dependants. No benefits are payable on death in deferment.
- Employees do not make contributions to the plan.

The employer is concerned that the plan is insufficiently attractive to new recruits who may not expect to remain in service until retirement.

- (i) A male employee, who commenced service at age 35 and is now aged 64, is deciding whether to retire early. Stating any assumptions you make, estimate the value (as at age 65) to this employee of the final year's benefits if he decides to stay until age 65, expressing the value as a percentage of the employee's salary in the year. [4]
- (ii) Without doing accurate calculations, sketch a graph illustrating the value of the benefit accruing in each year of this individual's career, assuming a discount rate of 6% a year and salary growth of 4% a year throughout. [2]
- (iii) (a) Comment on the implications if the employer amends the plan to make it more attractive to new recruits without significantly increasing the cost of the plan to the company.
- (b) Suggest two ways in which this may be done. [4]

[Total 10]

- 3** A management consultant has produced a report on risk management for the sponsor of a defined benefit pension scheme. The report included sections on:
- Assessing risks and evaluating potential impacts
  - Implementing risk monitoring measures
  - Monitoring financial performance
- (i) Outline the main financial, operational and legislative risks associated with the defined benefit pension scheme. [5]
- (ii) Discuss how the risks in part (i) could be assessed and monitored as part of the actuarial control cycle. [3]
- (iii) Suggest possible solutions to mitigate the risks. [4]
- [Total 12]
- 4** It has been suggested that the security of members' benefits in a defined benefit pension scheme could be enhanced by issuing detailed disclosure of information to all members.
- (i) Discuss how the introduction of regulations requiring the disclosure of information to members could increase security for members. [3]
- (ii) Outline three possible pieces of key information that could be issued to members to achieve the objective of increasing security and discuss the main advantages and disadvantages of issuing this information to members. [6]
- (iii) Outline other methods of regulation that could be used to enhance the security of members' benefits. [3]
- [Total 12]
- 5** The government of a developing country has proposed new legislation which will require employers to meet the funeral expenses of their current and former employees. For former employees, the amount payable is 0.2% of the cost of the funeral for each month of employment. On the death of a current employee, the amount payable is the total cost of the funeral less any amount due to be paid by that employee's former employers. The intention is for the legislation to be retrospective.
- (i) Describe two methods other than insurance by which this benefit could be financed. [7]
- (ii) State with reasons which method you would recommend. [2]
- (iii) List the issues the government should address before the legislation is enacted. [3]
- [Total 12]

- 6** A defined benefit pension scheme has been closed to new entrants for a number of years. A recent actuarial valuation report shows that the recommended contribution rate and the deficit have both increased since the last valuation report.
- (i) Outline the factors that may have contributed to the increases to the deficit and the recommended contribution rate. [4]
- (ii) Discuss the key issues and implications for the pension scheme being closed to new entrants under the following headings:
- Membership profile
  - Funding methods and assumptions
  - Investment strategy
- [9]  
[Total 13]

- 7** A pension scheme provides a single life pension to members in retirement. The pensions in payment are reviewed each year and if scheme resources permit, they are increased in line with price inflation. At retirement members are to be given the option to give up part of their pension to provide a pension payable from the member's death to a dependant.
- (i) Outline the issues to be considered when determining the terms to offer for this option. [9]
- To avoid queries and complaints from members, the sponsoring employer has asked you as actuary to the scheme if the same terms could be offered irrespective of the sex of the member and their chosen dependant, although the employer agrees that allowance should be made to reflect the age of the two parties.
- (ii) Outline the implications of the employer's suggestion and possible methods for setting the terms. [5]
- (iii) List restrictions you would recommend applying on the exercise of the option. [2]
- [Total 16]

- 8** You are advising an individual who has recently changed jobs. His previous employer operated a final salary pension plan under which he has an entitlement to a pension of \$10,000 a year payable at age 60. The previous employer is offering your client a cash value as an alternative to this pension entitlement.

Under local legislation, such a cash value would have to be invested in a personal pension fund — the fund must remain invested until the individual reaches age 55, after which time the individual can choose when to draw all or some of the fund.

- (i) List the additional information you need in order to give advice to your client under the following three headings:
- Personal information about your client.
  - The benefits that the final salary plan would provide if your client does not take a cash value from his previous employer.
  - The benefits your client might receive from a personal pension if he takes a cash value from his previous employer.
- [6]
- (ii) Discuss the key issues that your client should consider in deciding whether to take the cash value from his previous employer. [10]
- (iii) On your advice, your client decides that the cash value offered is not sufficiently high to make the transfer worthwhile. He asks you to write to the previous employer asking for a higher amount. Outline the points you would make in this letter. [3]
- [Total 19]

**END OF PAPER**