

## EXAMINATIONS

4 April 2001 (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 8 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** The government of a developing country is drawing up pensions legislation to regulate occupational schemes which provide pensions linked to final salary. At present most of these schemes only pay pensions to those members who are still employed by the company on the day before they retire.

Outline the considerations which the government should take into account when they are drafting regulations covering benefits which could be granted to members who leave service before retirement age. [5]

- 2** You are the actuarial adviser to a company that runs a defined benefit pension plan.

The company currently insures a wage continuance benefit which, following 13 weeks' sickness leave, pays an annual income to the employee of 75% of pre-sickness basic earnings less any sickness benefit provided by the State insurance arrangement. The wage continuance benefit is payable until age 65 and increases each year at the fixed rate of 5%. Whilst the employee receives the wage continuance benefit, they remain an active member of the pension plan and continue to accrue benefits.

The cost of providing this wage continuance benefit has doubled in the last three years and the personnel director has asked if there is anything that can be done to reduce this cost.

Outline the options available. [6]

- 3** A company is to open an overseas operation. In the country in which it is to operate there is no general practice of providing employee benefits other than pay and bonuses. You have been asked by the financial director of the company to advise on benefit design. List the types of benefits which it might be appropriate to provide. [6]

- 4** (i) List six interested parties for a defined benefit pension plan. [3]
- (ii) A defined benefit pension plan provides discretionary increases to pensions in payment. Historically, these have been provided on an annual basis broadly in line with price inflation. At the point of retirement, the letters informing members of their pension details have included a clear statement of intent to continue this discretionary practice.

Outline the issues to be considered by the company sponsoring the plan before a decision is taken on whether or not to include allowance for discretionary pension increases in the funding of the plan. [7]

[Total 10]

- 5** A company operates a pension plan for its employees. The pension at age 65 is  $\frac{1}{60^{\text{th}}}$  of final salary for each year of plan membership with dependants' pension benefits on death. The company meets the balance of cost of the plan. Consideration is being given to allowing members to transfer benefits from previous pension arrangements to provide additional benefits.

Three options are being considered.

- (a) Granting additional service.
- (b) Granting additional fixed pension at age 65.
- (c) Investing the transfer value available on a money purchase benefit and using the proceeds to buy an annuity from an insurance company.

Outline the issues to be considered by the company before a decision is taken.

[10]

- 6** A company final salary pension plan is to be discontinued.

- (i) Outline the options which may be available for the provision of the accrued benefits. [4]
- (ii) Outline the factors which will affect the suitability or otherwise of each of these options. [11]

[Total 15]

- 7** An employer operates a defined contribution (DC) pension plan. Both the employer and employees pay contributions at 5% of salary. Normal retirement age is 65.

The employer is considering what benefits to provide for employees who fall ill. Currently, there is an informal arrangement whereby employees remain on the payroll receiving 50% of their salary for as long as they are unable to work; the employer continues to make pension contributions based on the salary when the employee falls ill but the employee ceases to contribute.

The finance director wishes to avoid this long-term commitment and has proposed a new system under which if an employee is still ill after 5 years then he should be given early retirement. An additional lump sum would be paid into his DC account equal to the employer pension contributions that would have been paid between then and his normal retirement age (NRA) based on the full rate of salary. The total DC account would then be used to purchase an annuity for the employee.

- (i) Stating any assumptions you make, estimate the early retirement pension (as a percentage of salary) that this system would provide for an individual who joins the pension plan at age 35 and falls ill at age 40. [10]
  - (ii) Describe how the retirement benefits provided by this system will compare with what this employee may expect from the existing and former arrangements. [8]
  - (iii) Discuss the advantages and disadvantages, for the employer, of establishing this system. [6]
- [Total 24]

- 8**
- (i) (a) List the three main types of actuarial models used in the management of benefit provision, and explain the main requirements of such a model.
  - (b) Discuss the limitations of such models, and explain how these limitations can be allowed for in the use of the model. [10]
  - (ii) (a) List four funding methods used to set contributions for a final salary pension plan.
  - (b) Describe the main criteria for choosing a method, and explain how these will differ for each method in (ii)(a). [14]
- [Total 24]