

INSTITUTE AND FACULTY OF ACTUARIES



EXAMINATION

2 May 2014 (am)

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 before 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 six questions, beginning your answer to each question on a new page.*
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 An insurance company provides annuity contracts to defined benefit pension schemes in respect of current pensioners. In return for a one-off premium, the insurer makes regular payments to the scheme, equal to the pensions payable to members covered by the contract and their dependants.

- (i) Set out the advantages and disadvantages to the sponsor of a defined benefit pension scheme of purchasing an annuity contract covering all its pensioners. [5]

The insurer has recently introduced a medical underwriting option. Where a scheme has chosen to take up this option, the insurer will assess individual members' expected longevity and adjust the premiums charged, based on insured individuals' medical histories and lifestyle indicators (such as smoking and exercise). Schemes can still choose for the premium to be calculated without medical underwriting.

- (ii) List the other factors, in addition to medical history and lifestyle indicators, that the insurer might take into consideration in assessing an individual member's life expectancy. [3]

- (iii) Discuss whether the sponsor of a pension scheme might want to take advantage of the medical underwriting option. [7]

[Total 15]

2 The Trustees of a defined benefit pension scheme are currently reviewing the Scheme's investment strategy. The Scheme remains open to benefit accrual. The Scheme Sponsor has proposed that the Trustees switch a significant proportion of the assets from bonds to equities.

- (i) Outline the investment characteristics of bonds compared with equities. [5]

- (ii) Explain the possible impact of the proposed switch to equities on members' benefits. [3]

- (iii) Outline the factors the Trustees should take into account in setting an investment strategy. [5]

[Total 13]

3 The Trustees of a defined benefit pension scheme have decided to review the factors used for the various options available to members within the scheme.

- (i) List the main options that are likely to be available to members within the scheme. [2]
- (ii) Set out the general approach to setting assumptions to calculate the factors for the options. [4]

An active member of the scheme is approaching normal retirement age, but is also very ill and not expected to live for more than a year. He has asked the Trustees what his options might be so that he can provide for his spouse after his death.

- (iii) Set out the benefits and options that might be available to the member. [9]
- [Total 15]

4 As part of the funding valuation, the Trustees of a defined benefit pension scheme have decided to obtain an assessment of the strength of the sponsoring employer's covenant.

- (i) Outline why the assessment of the employer covenant is important. [2]
- (ii) Explain when is it not necessary to assess the covenant. [3]

The assessment has shown that the employer's covenant has improved since the previous funding valuation and is now very strong.

- (iii) Explain how the improved covenant might affect the financing of the scheme, including the current funding valuation. [7]
- [Total 12]

5 The government of a developed country is proposing to require employees who are not currently members of an occupational pension scheme and their employers to contribute to a defined contribution (DC) pension arrangement that meets the government's criteria.

- (i) Suggest why the government might be planning to introduce this measure. [3]
 - (ii) Outline the factors that the government might consider in setting the minimum level of contributions that must be made under its proposal. [10]
 - (iii) Discuss the difficulties the government may face in implementing its proposal. [6]
 - (iv) Suggest how the difficulties that you identified in part (iii) may be overcome. [3]
- [Total 22]

6 A Company is considering setting up a pension scheme for its employees and wants to make sure that the administrative burden is minimised.

(i) Set out the possible eligibility criteria that the Company could impose. [2]

The Company wishes to set up a defined benefit pension scheme but wants to make sure that costs are affordable and predictable.

(ii) Suggest how a scheme could be designed so that the Company can achieve its aim. In your answer you should consider the key features of a defined benefit scheme. [14]

The company has decided to provide benefits based on final pensionable salary with the following design:

- Normal Retirement Age of 65
- accrual rate of $1/60^{\text{th}}$ of pensionable salary for each year of service
- no pension increases in payment
- cap of £45,000 on pensionable salary

The Standard Contribution Rate (SCR) using the Projected Unit Age Method for a member age 40 is 25%, which includes an assumption of 3% for increases to pensionable salaries, and ignores the cap.

(iii) Calculate the SCR, allowing for the cap on pensionable salary, for a member age 40 whose current pensionable salary is:

- (a) £45,000
- (b) £30,000
- (c) £20,000

You should show your workings and state any other assumptions that you make. [7]

[Total 23]

END OF PAPER