

INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

19 April 2022 (am)

Subject SP4 - Pensions and Other Benefits Specialist Principles

Time allowed: Three hours and twenty minutes

In addition to this paper you should have available the 2002 edition of the
Formulae and Tables and your own electronic calculator.

If you encounter any issues during the examination please contact the Assessment Team on
T. 0044 (0) 1865 268 873.

1 The XYZ pension scheme is a final salary pension scheme that is open to new members and currently has more than 100,000 members. The scheme's managers are carrying out an actuarial valuation.

(i) Write down the main data requirements for carrying out a funding valuation. [8]

(ii) Describe suitable checks that should be carried out to ensure the membership data is appropriate. [7]

Since the previous funding valuation, there has been a global pandemic.

(iii) Discuss how the pandemic may affect the results of the valuation. Your answer should include the impact on:

- member experience since the previous valuation.
- assumptions for valuing liabilities.
- asset valuations.

[12]

[Total 27]

2 A developing country has limited private pension provision.

The government of the country has proposed introducing a state pension benefit for the first time.

(i) Outline the key issues the government of the country should consider before establishing a state pension benefit. [4]

It is proposed that the state pension will be set equal to median earnings in the country and be paid to all citizens of the country for life from their 70th birthday. The benefit would be funded by an additional tax equal to 10% of earnings.

(ii) Discuss the suitability of the government's proposals. [10]

The Government Actuary has been tasked to determine whether the proposed 10% tax is sufficient to fund the new state pension benefit on a Pay-As-You-Go basis.

(iii) Set out, with reasons, the key information and assumptions the Government Actuary would need to complete this task. [6]

[Total 20]

3 A company operates a cash balance scheme.

- (i) Describe the main features of a cash balance scheme. [3]

The cash balance scheme is funded using a Projected Unit Method with a control period of 1 year. There is currently a surplus in the scheme.

- (ii) Explain, in your own words, what is meant in this context by the following terms:

- Actuarial Liability
- Standard Contribution Rate
- Modified Contribution Rate.

[5]

- (iii) Outline the risks associated with a cash balance scheme, commenting on how these change on retirement. [6]

[Total 14]

4 (i) Describe, in your own words, what is meant by an ESG investment strategy, giving examples of the type of factors that may be considered. [4]

A pension scheme has assets of around \$1bn, invested across a range of different asset classes.

- (ii) Describe the factors the scheme managers should take into account when considering whether to amend the current strategy to increase the holding of ESG investments. [7]

- (iii) Give examples of possible actions the government of a country could take to influence pension schemes in that country to invest in ESG investments. [4]

[Total 15]

5 A company operates an executive pension scheme for its directors.

- (i) Explain how insurance can be used to mitigate the risk of providing lump sum benefits and dependants' pensions on death. [4]

One of the members of the executive pension scheme dies and an annuity is set up for the surviving spouse.

- (ii) Describe the different ways that the insured benefits could be allowed for in the company's valuation figures. [4]

[Total 8]

- 6** ABC Co. operates a defined contribution pension scheme. An employee must work at ABC Co. for 6 months to become eligible to join the scheme. If they contribute exactly 7% of their salary to the pension scheme, ABC Co. also pays 7% into the pension scheme. If they contribute more or less than 7% of their salary to the pension scheme, ABC Co. does not pay any contributions.

A high proportion of ABC Co.'s employees do not join the pension scheme.

- (i) Describe, in your own words, why an individual saving for retirement may prefer to save money outside of a pension scheme. [2]

The Managing Director of ABC Co. is concerned that members will not have adequate savings at retirement and would like to encourage individuals to join the scheme.

- (ii) Discuss features that could be included in the design of the scheme to encourage a higher take-up rate. [8]

ABC Co. is based in a developed country where there is limited pension provision from the state.

- (iii) Give examples of how the state could encourage adequate occupational pension scheme provision in the country. [6]

[Total 16]

END OF PAPER