

INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

11 September 2023 (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 A company is reviewing its long-standing defined contribution pension scheme, in which members are required to purchase an inflation-linked single-life annuity with their whole fund at retirement.

(i) State alternative options that could be offered to members at retirement. [3]

Prior to retirement, members are provided with annual benefit statements, which include information on the current value of the members' individual funds.

Two members of the scheme have compared their annual benefit statements.

Their fund values were the same in the previous year's benefit statement. However, one fund value is now showing as being higher than the other.

(ii) Describe possible reasons why one fund value may be higher than the other.

[5]

[Total 8]

2 A defined benefit pension scheme is set up under a trust. Currently, the scheme has three trustees. All three trustees are employed by the sponsoring company as well as being members of the scheme.

The sponsoring company is proposing to replace all the current trustees with a single independent trustee, who is neither employed by the company nor is a member of the scheme. This trustee will be a paid professional, acting as trustee for this, and other, pension schemes.

(i) Describe the role and responsibilities of a trustee. [7]

(ii) Discuss the implications, for the scheme, of the sponsoring company's proposal.

[6]

[Total 13]

- 3** A large textile manufacturing company sponsors a defined benefit pension scheme. The scheme is closed to new entrants and to future accrual of benefits. The normal retirement age in the scheme is 60. The company employs factory workers and office managers.

The scheme managers have asked their actuary to review the late retirement terms. A significant number of scheme members elect to take their benefits after age 60.

- (i) Outline four reasons why the late retirement option is popular. [2]
- (ii) Describe the factors that should be considered when reviewing the late retirement terms. [7]

The company is concerned that given the popularity of the late retirement option, the cashflows in the scheme are volatile, because it is difficult to predict when members will retire. One of the company directors suggests that the late retirement option is removed, and members' pension benefits are automatically put into payment at age 60 if they haven't been taken earlier.

- (iii) Discuss the implications for the scheme, and for the company, of the director's suggestion. [8]
- [Total 17]

- 4** A company is preparing its annual financial statements and has appointed a new auditor to review them once completed. The company has asked the auditor to set out their disclosure requirements in respect of the pension scheme.

- (i) Outline the disclosure requirements that may be included in respect of the pension scheme. [8]

Transfer values are calculated on a best estimate basis. The company would like to include an allowance for transfer values in the calculation of the liabilities disclosed in the accounts. They have asked their actuary to perform an analysis of the recent experience of transfer-value take-up to help determine a suitable assumption for the incidence of transfer values in the calculations.

- (ii) Describe how the actuary may carry out such an analysis. [7]
- (iii) Explain the possible shortcomings of the result of such an analysis. [5]
- [Total 20]

5 The government of a developing country currently finances its state pension scheme using a pay-as-you-go method.

- (i) Describe what is meant by a ‘pay-as-you-go method’ of financing in this context. [1]

The government is considering alternative funding methods but doesn’t wish to fund in advance.

- (ii) Outline four alternative methods that the government could use to finance its state pension scheme. [4]

Currently, a flat rate of pension is paid to citizens on reaching age 70, provided they have lived and worked in the country for a minimum of 35 years. Other citizens are not entitled to a state pension.

Due to an increase in the cost of living in recent months, the government is considering a review of the retirement benefits it provides to citizens.

- (iii) Describe how the state pension could be changed to help ensure that the population achieves a certain standard of living during retirement. [5]
- (iv) Explain how the pay-as-you-go contributions may need to change in response to any changes to the state pension. [2]

There is currently very little private pension provision in the country.

- (v) Outline actions the government could take to increase private pension provision. [5]

[Total 17]

- 6** The funding valuation of a large defined benefit pension scheme is due. The previous funding valuation of the scheme 2 years ago revealed a funding level of 120% on the scheme's funding basis.

The scheme is closed to future accrual of benefits, and some of the benefits are linked to inflation.

The scheme invests in equities, index-linked government bonds and liability-driven investment assets, hedging both interest rates and inflation.

The actuary has been asked to advise on setting the financial assumptions.

- (i) Outline the information that is needed to set the financial assumptions for the funding valuation. [4]

Due to a large increase in oil prices in the country, inflation is expected to be significantly higher than the levels seen in the last 10 years.

- (ii) Discuss the potential implications to the funding valuation of significantly higher inflation. Your answer should consider the:

- assumptions used.
- value of the assets.
- value of the liabilities.

[9]

As part of the funding valuation, the actuary needs to provide the trustees with an estimate of the funding position on a solvency basis.

- (iii) Describe the key differences between the solvency and funding valuations. [4]

The valuation has been completed and the results show that the scheme is 125% funded on the funding basis and estimated as 101% funded on the solvency basis.

The trustees wish to consider securing the benefits with an insurer. However, the company would like the scheme to continue.

- (iv) Discuss the advantages and disadvantages of continuing the scheme on a self-sufficiency basis, instead of securing the benefits with an insurer. [8]

[Total 25]

END OF PAPER