

INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

26 April 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 Describe, in your own words, the process involved in carrying out an asset liability model exercise for a large defined benefit scheme. [5]

2 The managers of a large defined benefit pension scheme wish to assess the covenant of the sponsoring employer. They are proposing to undertake the assessment by reviewing the sponsoring employer's credit rating provided by a specialist credit rating agency.

(i) Discuss the managers' proposal. [5]

The managers have now completed their review of the employer covenant, which has been assessed as weak. The latest funding valuation of the pension scheme showed that the scheme was in surplus.

(ii) Describe four actions the managers of the scheme may take following this covenant assessment. [4]

[Total 9]

- 3 A travel agency is considering providing its employees with an annual bonus, in the form of a cash lump sum, as an employee performance incentive. The cash lump sum will be set at a base value, depending on individual employees' performance, and adjusted each year in line with two additional factors: price inflation and overall company performance. The proposed base values for the first year, dependent on employee performance rating, are as follows:

<i>Performance rating</i>	<i>Cash lump sum (\$)</i>
Poor	0
Satisfactory	100
Good	400
Excellent	1,000

The adjustments in respect of overall company performance will be dependent on the profits made by the travel agency each year, as follows:

<i>Company profits</i>	<i>Cash lump sum adjustment (%)</i>
Significantly below target	0
Below target	50
On target	100
Above target	120
Significantly above target	150

The travel agency wishes to investigate how the benefit may be financed. It has employed an actuary to determine the expected cost of providing the lump sum to its employees over the next 10 years.

- (i) List the assumptions that the actuary will require. [4]
- (ii) Discuss the key factors the company should consider when deciding on an appropriate financing method for the bonus. [6]

[Total 10]

- 4**
- (i) Describe the key areas of scheme design where pension schemes may differ. [10]
 - (ii) Suggest possible reasons why the scheme designs differ. [5]

Two large vehicle manufacturers, Titan Motor Company (Titan) and Bullet Cars (Bullet), operate in the same country. Each manufacturer sponsors its own defined benefit pension scheme that is open to new entrants and to future accrual. Both companies employ manual workers, engineers and designers and are run by directors.

Titan is considering acquiring Bullet, and its directors have requested a copy of Bullet's company accounts. Bullet's pension scheme will form part of the acquisition.

- (iii) Describe the key items of information from these accounts, in relation to Bullet's pension scheme, that will be of interest to Titan's directors. [8]
- [Total 23]

- 5**
- The managers of a defined benefit pension scheme are reviewing the terms for determining transfer values that members will receive if they take their accrued benefits from the scheme. The managers had reviewed the commutation factors earlier in the year.

- (i) Describe the key areas to consider when setting transfer value terms. [6]
- (ii) Explain how the assumptions for calculating transfer values may differ from the scheme's funding basis. [3]

A deferred member of the scheme has requested a transfer value quotation.

- (iii) List the individual member data items required to calculate the transfer value. [3]
- (iv) Describe possible reasons why the member has requested a transfer value quotation. [6]

The member has appointed a financial adviser to advise them on their transfer value quotation.

- (v) Discuss what the financial adviser should consider in advising the member. [8]
- [Total 26]

6 A funding valuation of a large defined benefit pension scheme that is open to accrual, and sponsored by a mining company, is due with an effective date of 1 January 2022. The previous funding valuation at 1 January 2020 showed that the scheme was in deficit and a recovery plan was put in place to address this.

(i) Describe the main steps of the funding valuation process. [6]

The trustees have asked their actuary to advise them on the assumptions that may need to be made for the funding valuation.

(ii) Describe the key assumptions that should be made for the funding valuation. [12]

An actuarial analyst has completed the calculations for the funding valuation. Their calculations show that the funding level is much higher than that at the previous funding valuation.

(iii) Describe possible reasons for the improvement in the funding position. [9]
[Total 27]

END OF PAPER