INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

16 April 2024 (am)

Subject SA4 – Pensions and Other Benefits Specialist Advanced

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.

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1 A final salary pension scheme in a developed country has a Normal Retirement Age (NRA) of 65.

Early and late retirement is allowed in the scheme rules, with trustee and sponsor consent, but this has always been withheld by the sponsor. The trustees are keen to encourage more flexibility for members and have therefore asked their actuary to assist them with preparing a proposal to present their arguments for permitting early and late retirement to the sponsor.

(i) Set out the points that the actuary may present in the proposal, including:

(a) the advantages and disadvantages of allowing early and late retirements, from the point of view of members, sponsor and trustees.

(b) how early and late retirement pensions may be calculated.

[12]

The trustees and sponsor discuss the actuary's paper at a meeting and agree to allow early and late retirements. At the meeting they ask the actuary to provide a verbal estimate of what early and late retirement factors might be for a deferred member at age 64 and 66 respectively.

The increases on scheme benefits are set out below.

<table>
<tr><th></th><th>Revaluation in deferment</th><th>Pension increases in payment</th></tr>
<tr><td>Pension accrued up to 31 December 2009</td><td rowspan="2">In line with the increase in inflation since date of leaving, capped at 4% p.a. over the period of deferment until NRA.
Revaluation is applied each 1 January based on published inflation index as at the previous 1 October.</td><td>No increases.</td></tr>
<tr><td>Pension accrued from 1 January 2010</td><td>In line with inflation with a minimum of 0% p.a. and a maximum of 4% p.a.
Increases are applied at 1 January each year, based on published inflation as at the previous 1 October.</td></tr>
</table>

(ii) Set out the points that the actuary should make in response at the meeting regarding the early retirement factor at age 64 and the late retirement factor at age 66. You do not need to provide any detailed calculations, just a simple explanation in non-technical terms. You should explain any assumptions you make. [6]

The new early and late retirement factors have now been in place for some time. The number of members opting to retire either early or late is much higher than the trustees and sponsor were expecting.

(iii) Suggest reasons why more members than expected are choosing to retire early or late. [5]

A global economic crisis has caused markedly higher levels of inflation worldwide. Domestic inflation over the year to the previous 1 October has been 12%. During October, the trustees received queries from three members regarding the impact of higher inflation on their benefits:

- An active member who is looking to retire at NRA in January next year
- A deferred member who is about to retire at age 67 in November
- A deferred member who is looking to retire early in December this year.

The trustees have asked their actuary to draft, on their behalf, the replies to the members.

(iv) Set out the points that the actuary would make in their replies. [10]

The trustees have also asked what other options are available to them in respect of high inflation and members' benefits.

(v) Outline the possible actions the trustees could take in response to the current high levels of inflation. [4]

[Total 37]

2 The trustees of a defined benefit pension scheme have just received a report on the initial results of the scheme's triennial valuation. The report includes an analysis of surplus, set out in the table below.

2020 Deficit	(150)
Interest on deficit	(20)
Investment returns higher than assumed	800
Deficit contributions plus interest	120
Ongoing contributions lower than cost of accrual	(20)
Change in financial assumptions	(750)
Change in demographic assumptions	60
Transfers out	(30)
Membership movements	(50)
Inflation higher than assumed	(100)
Salary increases higher than assumed	(60)
Miscellaneous	90
2023 Deficit	(110)

The trustees have asked their actuary to present a training session on the analysis of surplus at their next meeting.

(i) Set out the points to be included in the presentation, in particular:

- The reasons for the analysis
- What experience is included in each item
- A brief explanation of the derivation of the figures.

[16]

Following the presentation, the trustees have reviewed the results of the analysis of surplus and have raised the following questions:

- For ongoing contributions lower than the cost of accrual, the sponsor has paid at the rate that was calculated in the 2020 valuation. Why has there been a loss?
- Our understanding is that transfer values are calculated on a best estimate basis compared to the more prudent valuation basis. How can there be a loss on transfers out?
- The sponsor has informed us that average salary increases over the inter-valuation period have been lower than assumed in the previous valuation. Why is there a loss arising from salary increases being higher than assumed?
- What is the miscellaneous item?

(ii) Set out the points the actuary would include in response to the trustees. [10]

The trustees are concerned about the relatively large numbers shown in the analysis. They are worried about the volatility of the funding position and have asked the actuary for their views.

(iii) Comment on the trustees' concerns. [6]

[Total 32]

3 ABC Leisure, a large hotel chain in a developed country, sponsors a Defined Benefit (DB) scheme for its permanent employees. The government of the country is proposing to introduce auto-enrolment legislation, which means that all employers will have to enrol all new employees into a scheme that will need to meet certain minimum requirements.

The sponsor has asked you to provide a short paper on auto-enrolment to help them understand what they may need to provide in the future.

(i) Outline the main points you would include in your reply. They should include details on:

(a) what minimum requirements the government may impose for the scheme.

(b) what particular issues the employer may face in administering the scheme due to the fact that it is a hotel chain that employs a large proportion of seasonal workers.

[8]

ABC decides to set up a Defined Contribution (DC) section in the scheme for new employees. They have proposed that members of the DC section should be able to transfer their service into the DB section any time after they have reached 2 years' service in the DC scheme. They will receive the same amount of backdated service in the DB scheme as they had in the DC scheme.

(ii) Set out the key considerations that the trustees should make before deciding whether to accept ABC's proposal. [8]

A few years later the government has proposed to double the current minimum level of employer and employee contributions for auto-enrolment schemes.

(iii) Explain how the government's proposal could affect the sponsor and scheme members, including how your answer to part (ii) may change. [5]

Several members of both sections of the scheme have asked about climate risk, how it may affect the sections in the future and if anything is being put in place to reduce the risk.

(iv) Discuss the likely risks arising from climate change, including how those risks may be mitigated, from the viewpoint of:

(a) the sponsor.

(b) members of the DB section.

(c) members of the DC section.

[10]
[Total 31]

END OF PAPER