INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

10 April 2019 (pm)

Subject SP4 – Pensions and other Benefits Specialist Principles

Time allowed: Three hours and fifteen minutes

INSTRUCTIONS TO THE CANDIDATE

1. *Enter all the candidate and examination details as requested on the front of your answer booklet.*
2. *You must not start writing your answers in the booklet until instructed to do so by the supervisor.*
3. *Mark allocations are shown in brackets.*
4. *Attempt all questions, begin your answer to each question on a new page.*
5. *Candidates should show calculations where this is appropriate.*

Graph paper is NOT required for this paper.

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 A large company sponsors a final salary pension scheme which is currently open to future accrual of benefits. The company board has stated an aim of reducing the cost of sponsoring the scheme.

(i) Suggest **six** possible actions the company board could take to achieve its aim. [3]

(ii) Comment on the likely effectiveness of **four** of the actions you have identified in part (i). [4]
[Total 7]

2 In a developed country, a law has recently been passed which requires all companies based in that country to provide pension benefits to their employees. A small engineering company which has never provided any pension benefits has asked an actuary for advice in setting up a pension scheme.

(i) Set out the key issues the company should consider in designing the pension scheme. [6]

The company is concerned about the risks associated with providing pension benefits.

(ii) Set out the actions the company could take to manage these risks through the benefit design. [8]

The company workforce has a strong employee representation which has asked for input into the initial design of the benefits.

(iii) Identify the key features which the employee representatives might look for in the pension scheme. [4]
[Total 18]

3 A defined benefit pension scheme has a commutation option at retirement where members are permitted to exchange part of their pension for a cash lump sum. Commutation factors have historically been set to be actuarially neutral on the funding valuation basis.

The current commutation factors at age 60 and age 65 are as follows:

£16.45 for every £1 of pension per annum at age 60 and
£12.30 for every £1 of pension per annum at age 65.

These were determined using a net discount rate of 2.1% p.a.

The equivalent net discount rate now is 2.3% p.a. All other assumptions remain unchanged.

(i) Estimate the commutation factors at ages 60 and 65 assuming they are updated to allow for the revised assumptions. [4]

The scheme's trustees have asked their actuary for advice on whether the scheme's commutation factors need to be changed.

(ii) Set out the points the actuary might make in their response. [6]
[Total 10]

4 The government of a developed country with an ageing population wants to reduce the amount it spends in respect of its older citizens.

(i) Outline methods by which the government's financial expenditure on the elderly could be reduced. [4]

(ii) Outline how the government could encourage more saving for retirement among the working population. [7]

A government adviser has put forward the following two proposals:

- Annual state pension payments are only to be increased if national average earnings have risen over a certain threshold over the previous year.
- State pension benefits are to be linked to national life expectancy and will reduce if life expectancy increases.

(iii) Discuss the advantages and disadvantages of each of these proposals. [9]
[Total 20]

5 A small employer sponsors a large defined benefit scheme which closed to new members ten years ago and they are concerned about the risks associated with this scheme.

(i) Explain how the employer might use insurance to manage its financial exposure to the benefits associated with this scheme that come into payment before retirement age. [3]

(ii) Describe how the purchase of annuities in the names of the members would affect the risks faced by the employers and members of the scheme. [4]

An incentive exercise is defined as an invitation or inducement provided to a member to change the form of their accrued defined benefit rights.

(iii) Set out the arguments for and against the employer undertaking an incentive exercise. [4]

[Total 11]

6 The accounting standards board ('the Board') of a country is deciding whether to revise its guidance for producing accounting disclosures for defined benefit pension schemes.

The Board has asked an actuary for advice on whether the Attained Age or Projected Unit method would be more appropriate as a method of producing accounting valuations.

(i) Comment on the suitability of each of these methods for the purpose of performing accounting valuations. [3]

The Board has also asked the actuary to provide advice on how schemes should set their mortality assumptions. In particular, it has asked the actuary to cover the factors that schemes should consider when setting their mortality assumptions.

(ii) Set out the points the actuary should include in their response. [6]

Under the Board's current guidance, the discount rate is determined based on the expected return available from each individual scheme's assets.

(iii) Discuss alternative ways of calculating a discount rate to be used in producing the accounting disclosures. [6]

[Total 15]

7 (i) Define sponsor covenant. [2]

The trustees of a large defined benefit pension scheme are concerned that the sponsoring employer is in financial difficulties.

(ii) Set out the initial investigations the trustees could make in order to verify their concerns. [5]

The investigations carried out by the trustees show that the sponsor covenant has weakened.

(iii) Suggest possible actions the trustees might take. [6]

The chair of the trustees wishes to modify the scheme's investment strategy in response to the weakening of the covenant. He has proposed investing in high-risk growth assets.

(iv) Discuss the suitability of the chair's proposal. [6]
[Total 19]

END OF PAPER