INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

4 October 2017 (am)

Subject ST4 – Pensions and other Benefits Specialist Technical

Time allowed: Three hours

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. *You have 15 minutes of planning and reading time before the start of this examination. You may make separate notes or write on the exam paper but not in your answer booklet. Calculators are not to be used during the reading time. You will then have three hours to complete the paper.*

4. *Mark allocations are shown in brackets.*

5. *Attempt all five questions, beginning your answer to each question on a new page.*

6. *Candidates should show calculations where this is appropriate.*

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 company currently provides a defined benefit pension scheme for its employees. The benefits provided by the scheme are a pension equal to $1/60^{th}$ of final salary for each year of service, plus a death benefit lump sum of two times salary. The company is proposing to replace the current scheme with a flexible benefit scheme.

(i) Explain what is meant by a flexible benefit scheme. [1]

(ii) List the benefits that could be included in the proposed scheme. [5]

The company decides to set up a flexible benefit scheme, offering a range of benefits to employees. The scheme has been designed such that the overall benefit provision will have the same expected cost to the employer as the current scheme.

(iii) Explain why the employer might want to provide a core level of certain benefits under the flexible benefit scheme. [2]

(iv) Set out the advantages and disadvantages of this new scheme to:

(a) the employer; and

(b) the employees.

[8]
[Total 16]

2 A company sponsors a defined contribution pension scheme where it contributes 10% of salary. Members can contribute at a level of their choice between 0% and 10% of salary. On retirement at age 65 each member's accumulated fund is converted to an inflation-linked pension with a 50% spouse's pension attached to it. The conversion rates are set each year by an actuary.

Over the last five years, only 80% of eligible members have chosen to join the scheme, and the average contribution rate of those members has only been 2%.

(i) Suggest ways by which the company could increase the participation rates and contribution levels. [5]

The default investment fund choice for the scheme is a lifestyling fund.

(ii) Explain what is meant by lifestyling and why it is often used. [3]

Each year members are sent personal benefit statements.

(iii) Suggest what information could be included in these statements. [5]

(iv) Explain why it is important that the information included in the members' benefit statements is clear and relevant. [2]

The company is considering offering income drawdown at retirement as an alternative to annuity conversion.

(v) Explain what is meant by income drawdown. [1]

(vi) Set out the factors a member should consider when deciding between income drawdown and an annuity. [4]

(vii) Comment on the changes that may be required to the default investment fund if income drawdown is to be offered. [3]

(viii) Suggest other options the scheme could offer at retirement. [5]
[Total 28]

3 A large defined benefit pension scheme is undergoing a formal actuarial funding valuation. The trustees have just received a valuation report from the actuary to the scheme. The report complies with UK professional standards.

(i) Outline the professional requirements that would have applied in the production of the report. [3]

The scheme has recently closed to new entrants. The sponsor is also considering ceasing accrual in the scheme.

(ii) Explain how each of these two events might impact the Standard Contribution Rate and Actuarial Liability. [7]

As part of the report the life expectancy on the valuation basis is shown for members of the scheme at age 65. This has reduced since the last valuation, whilst the life expectancy of the general population has increased.

(iii) Suggest reasons why this might have happened. [3]

During the valuation process the sponsor announces that its profits for this year are expected to be significantly lower than in previous years.

(iv) Discuss how the trustees might react to this announcement. [9]
[Total 22]

4 (i) Set out the likely changes to an individual's income and expenditure as a result of retirement. [3]

The Net Replacement Ratio (NRR) is often used as a measure of the level of retirement provision.

(ii) Explain why an appropriate NRR might vary between individuals. [4]

A survey in a developed country has revealed that the average NRR is less than 30%.

(iii) Suggest why the NRR is so low. [2]

(iv) Discuss ways by which State and employers can help to increase the NRR.[10]
[Total 19]

5 (i) Define the term Standard Contribution Rate. [1]

A company sponsors a defined benefit pension scheme that provides a pension at age 65 of 1/60th of pensionable salary for each year of service. Pensions in payment increase in line with price inflation, and have an attaching 50% spouse's pension.

(ii) Estimate the Standard Contribution Rate using the Projected Unit Method for a 40 year old male joining the scheme, stating any assumptions you make. [5]

The company wishes to reduce the ongoing cost of providing pension benefits through the defined benefit scheme.

(iii) Suggest six distinct ways of changing the scheme benefits such that the Standard Contribution Rate calculated in part (ii) reduces. [3]

(iv) Without performing any calculations, comment on the effectiveness of each of the changes suggested in part (iii). [3]

(v) Suggest other ways the company could reduce its ongoing pension costs. [3]
[Total 15]

END OF PAPER