INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

23 April 2014 (pm)

Subject SA4 – Pensions and other Benefits Specialist Applications

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 have 15 minutes before the start of the examination in which to read the question. You are strongly encouraged to use this time for reading only, but notes may be made. You then have three hours to complete the paper.*
3. *You must not start writing your answer in the booklet until instructed to do so by the supervisor.*
4. *Mark allocations are shown in brackets.*
5. *Attempt all three 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 (i) Define Cash Equivalent Transfer Value (CETV). [1]

(ii) Outline the principles underlying the calculation of a CETV. [8]

(iii) Set out the advantages and disadvantages of a member taking a CETV. You should consider all key parties that are affected. [7]

A company sponsors a final salary scheme which provides a pension based on service with the company, with a normal retirement age of 65. The scheme ceased accrual as at 1 January 2014 and a valuation on the CETV basis shows 90% funded with a deficit of £50m.

(iv) Outline the factors that the Trustees should consider before deciding to reduce CETVs. [5]

Following the cessation of accrual the sponsoring employer is considering buying-out the scheme's liabilities with an insurance company. The Finance Director is keen to reduce the cost of the buy-out and has heard that an Enhanced Transfer Value exercise could help. He has asked an actuary to prepare a brief report setting out the process and the possible benefits, as well as any downside.

(v) Set out the key points that the actuary should include in his report. [6]
[Total 27]

2 ABC plc operates a long-standing defined benefit pension scheme ("the Scheme") for all of its employees. The Scheme provides members with the following benefits:

- a pension on retirement at age 65 based on service to, and salary at, retirement or earlier date of leaving
- pensions accrued before 6 April 1997 increase in payment at a fixed annual rate of 3%
- pensions accrued between 6 April 1997 and 5 April 2005 increase in payment annually in line with the Retail Prices Index (RPI) subject to a maximum of 5%
- pensions accrued after 5 April 2005 increase annually in line with RPI subject to a maximum of 2.5%
- early leavers receive statutory revaluation in deferment
- on retirement members are permitted to exchange part of their pension for a tax-free lump sum up to the statutory maximum

The statutory triennial funding valuation has an effective date of 6 April 2013. The following market yields applied at that date:

Over 15 year gilt yield	2.2%
Over 15 year index-linked gilt yield	–0.4%

Other assumptions made were:

Extra return assumed for corporate bonds	0.4%
Equity Risk Premium	2.0%

The asset split at the valuation date was:

Equities	30%
Gilts	35%
Corporate Bonds	35%

Approximately 60% of the liabilities are in respect of non-pensioners, and 40% pensioners.

(i) Discuss the key financial assumptions the scheme actuary will need to set. [10]

(ii) Outline how these assumptions might be derived. [4]

The actual assumptions used for the valuation were:

Pre-retirement discount rate	3.3%
Post-retirement discount rate	2.3%
Inflation (RPI)	2.6%
Inflation (CPI)	1.9%
Earnings Increases	4.1%
Pension Increases – RPI max 5%	2.6%
Pension Increases – RPI max 2.5%	2.3%

The balance sheet on a Technical Provisions basis using these assumptions was as follows:

	£m
Active liabilities	300
Deferred pensioner liabilities	300
Pensioner liabilities	400
Total liabilities	1,000
Total assets	700
Deficit	300

The Trustees have proposed a Recovery Plan requiring deficit contributions of £36m a year over 10 years from April 2014.

ABC plc is experiencing financial difficulties due to economic conditions and the decline of the sector in which it operates. The Finance Director states that ABC cannot afford the deficit payments. He has appointed an actuary to look at the valuation who has put forward a number of proposals for the assumptions and Recovery Plan, as detailed below:

- The Scheme's liabilities have an average duration of approximately 20 years, which is significantly longer than that of the gilt yield used to derive the assumptions. Looking at the gilt yield curve, a yield of 3.0% (0.8% higher) is proposed as a starting point.

- The Equity Risk Premium is too low. 3.5% is a reasonable historic average and this should be used. The same applies for the derived bond yield. The actual over 15 year corporate bond yield was 3.9% at the valuation date so this is more appropriate.

- Evidence suggests that CPI should be 1% less than RPI.

- Earning increases have been less than RPI for the last few years, so the employer believes that earnings should be set to RPI minus 1%.

- The Scheme commutation factors are about half the assumed cost of pension. The current assumption is that members take 75% of the statutory maximum pension exchanged for cash, whereas in reality members always take the maximum, so 100% should be assumed.

- The Recovery Plan should be spread over 20 years, in line with the average duration of the liabilities.

The Trustees have asked the Scheme Actuary to prepare a report in response to the proposals, including:

- an estimate of the difference that each change will make to the liabilities.
- the effect of each proposal to the required deficit payments.

(iii) Discuss the points that the Scheme Actuary should include in his report [26]
[Total 40]

3 A Company sponsors a non-contributory Final Salary Defined Benefit (DB) scheme which is still open to accrual, but was closed to new members 10 years ago. New employees can join the Company's defined contribution (DC) scheme where the Company contributes a minimum of 10% of pensionable salaries for all members, plus further contributions up to a maximum of 5% of pensionable salaries to match any voluntary member contributions. This structure was originally designed to enable members to achieve a similar level of benefits to the DB scheme, should they wish to.

The Company has noticed that over the past ten years members retiring from the DC scheme are receiving significantly lower benefits than members in the DB scheme have accrued over the same period.

(i) Suggest reasons why members of the DC scheme might have accrued lower benefits than members of the DB scheme. [11]

The Company is concerned that the members of the DC scheme are receiving an unfair deal compared with those in the DB scheme. However, it is also concerned that the risks in the DB scheme are all taken by the Company.

(ii) Describe three ways in which the Company could share risk with the members currently in the DB scheme. [9]

The Company wishes to continue with its DB scheme. However, the contribution rate for this scheme has increased substantially over recent years and is now higher than the maximum Company contribution rate of 15% for the DC scheme.

The Company has asked its actuary to prepare a report to consider the following issues:

- how to bring the company contribution rates to the two schemes closer together

- how to address the problem that members of the DC scheme have been accruing lower benefits than members of the DB scheme

The Company has stated that it is willing to take on some risk in the DC scheme.

(iii) Set out the points the actuary should make in the report. [13]
[Total 33]

END OF PAPER