Faculty of Actuaries Institute of Actuaries

EXAMINATIONS

14 April 2000 (pm)

Subject 404 — UK Fellowship Pensions

Paper Two

**You must answer this subject only,
you may not attempt another subject in the 400 series.**

Time allowed: Three hours

INSTRUCTIONS TO THE CANDIDATE

1. *You have 15 minutes at the start of the examination in which to read the questions. 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.*
2. *You must not start writing your answers in the booklet until instructed to do so by the supervisor.*
3. *Write your surname in full, the initials of your other names and your Candidate's Number on the front of the answer booklet.*
4. *Mark allocations are shown in brackets.*
5. *Attempt both questions, beginning your answer to each question on a separate sheet.*

AT THE END OF THE EXAMINATION

Hand in BOTH your answer booklet and this question paper.

In addition to this paper you should have available Actuarial Tables and an electronic calculator.

1 (i) Describe the Minimum Funding Requirement ("MFR") and how it may affect the level of funding required from an employer. [8]

(ii) Describe how the Market Value Adjustment ("MVA") under the MFR is calculated. [6]

(iii) List the items the actuary should take into account when providing the periodical certification of the Schedule of Contributions? [5]

A UK company runs a final salary pension arrangement. The scheme is non contributory and not contracted out. All pensions in payment are guaranteed to increase in payment in line with price inflation on 31 March each year based on the rate of inflation in the previous calendar year.

The last detailed MFR calculations were carried out by you on 1 April 1998. The liabilities for active members, deferred pensioners and pensioners calculated on the MFR basis (excluding the expense loading) but after applying the MVA were as follows:

Active members	£25 million	(of which £15 million was in respect of members more than 10 years from retirement)
Deferred pensioners	£20 million	(of which £10 million was in respect of members more than 10 years from retirement)
Pensioners	£30 million	

	1 April 1998	*1 April 1999*
Scheme assets	£90 million	£105 million
Number of active members	500	500
Active members total salary roll	£9,000,000	£9,500,000
Number of pensioners	500	500
Total pensions in payment	£2,300,000 p.a.	£2,400,000 p.a.
Number of deferred pensioners	500	500
(net) Dividend yield on FTSE Actuaries All Share Index	2.36%	2.33%
FTSE Actuaries Government Securities 15 year Yield Index	5.86%	4.66%
FTSE Actuaries Government Security Index-Linked Real Yield Over 5 years (5% inflation) Index	2.85%	1.73%

The Company has contributed at the rate of 15% of basic salary from 1 April 1998 up to 1 April 1999. The MFR regular contribution rate as at 1 April 1998 was 12.5% of salary. Assume that inflation has remained level at 2.5% per annum over the period.

(iv) Estimate the change in the MFR funding level as at 1 April 1999 based on the above data. State with reasons any additional assumptions you make. [14]

(v) Having received the results of your MFR review the finance director has stated that she feels that the scheme costs are too volatile. She has asked you to suggest ways in which the company costs can be made less volatile and/or reduced.

Draft your response to the finance director outlining the ways in which the volatility and level of company costs can be reduced. You should assume that the company wishes to maintain a defined benefit arrangement.

Your answer should include:

- Comments on the different approaches to measuring scheme costs;
- Suggested amendments to the benefit structure;
- Possible changes in investment strategy.

There are 5 marks for drafting. [17]
[Total 50]

2 You are the actuary to a small UK final salary pension scheme for the executives of a rapidly expanding internet provider. The company has been running for five years, having been set up by two of the current executives, who established the pension scheme three years ago. The scheme provides 1/60 of final salary for each year of company service. Investment management is provided by an external fund manager.

(i) The finance director of the company has asked you to explain the trustees' responsibilities regarding the investment strategy of the scheme.

Explain the trustees' responsibilities, noting any regulatory requirements, and discuss the advice you would give them in fulfilling these responsibilities. [16]

(ii) The finance director has read an article explaining that traditional actuarial techniques are out of date and that a stochastic approach is more appropriate. He has asked you for a brief report on stochastic processes, and why you do not use such methods for the scheme.

Draft a report in response.

There are 4 marks for drafting. [18]

(iii) The company has recently taken over a long established computer manufacturing company. Employees in this company have been granted benefits in the scheme allowing for past service with the purchased company. A bulk transfer has been made to the scheme equal to the past service reserve for the transferred members. Explain how your answer to part (i) would be altered by this purchase. [5]

(iv) The managing director has been discussing benefits with his counterpart at a similar competitor company who has set up a scheme providing unapproved benefits. He has asked you to explain what these schemes are and how they could be used for the executives of the company, including any transferred from the purchased computer manufacturing company. Describe the points you would make in your reply. [11]

[Total 50]