Actuarial Society of South Africa

EXAMINATION

6 October 2009 (pm)

Subject SA4RSA — 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 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.*

3. *You must not start writing your answers in the booklet until instructed to do so by the supervisor.*

4. *Mark allocations are shown in brackets.*

5. *Attempt all questions, beginning your answer to each question on a separate sheet.*

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.

PLEASE TURN OVER

QUESTION 1

You are an actuary at a firm of pension fund consultants and actuaries in an emerging market economy whose demographics and retirement fund industry, including its social security programmes, are very similar to those in South Africa. Your clients include companies, trade unions and the government.

The government has renewed its efforts towards implementing its long-debated social security and retirement fund reform plans. It has proposed a defined benefit scheme with a pension based on average salary over the last five years before retirement, subject to a guaranteed minimum pension, and which will commence in 2010. Membership will be compulsory for all employed citizens.

(i) Contrast the two main systems of funding for state pension provision, and justify which system you would recommend for this government's proposed national fund. [6]

(ii) List the concerns that this foreign government might have had with the retirement fund industry and, under each concern, describe how a national fund can achieve the government's goal to reform the industry. [17]

The government's department of finance has asked for your views, at this interim stage, on their intended scheme design. This is a 10% total contribution rate; a cap on pensionable earnings that will enjoy tax relief; an option for high earners to opt-out to an accredited fund in respect of their earnings in excess of a specified annual amount; a retirement age of 62; and lump sum death and lump sum disability benefits.

(iii) Evaluate these design features and recommend suitable alternatives, where you consider these necessary. (You are not required to comment on the defined benefit nature of the scheme.) [14]

(iv) Set out the further areas where the government will need to make decisions.[6]

One of your firm's clients is a large life office that offers various retirement fund products to individuals and employers, including retirement annuities, umbrella funds and insured pension and provident funds. They have asked one of your colleagues to draft a report setting out the potential threats to their business, and the opportunities that may be available if the government introduces the national fund.

(v) Discuss the threats and opportunities to the business of the life office. [7]

[Total 50]

PLEASE TURN OVER

QUESTION 2

You are the valuator to a non-contributory defined benefit fund, which you valued a year ago. The fund only has active members and at retirement members must purchase an equivalent pension from an insurer. The fund's rules do not allow members to become deferred pensioners. Death and disability benefits are fully insured.

The basic fund details as per the last valuation are summarised below. There are no member or employer surplus accounts. The valuation method sets the member liability equal to the past service liability (without a minimum of the exit benefit):

Market value of assets	R90 million
Members' liability	R84 million
Surplus	R6 million
Number of members	500
Average age	35
Average pensionable service	10 years
Average annual salary	R125 000
Required contribution rate in respect of retirement benefits	13.5%
Retirement age	65
Retirement benefit per year of pensionable service	2.0% of final salary
Valuation method	Projected unit credit
Minimum benefit method	Index Linked Gilt yield
Valuation assumptions:	
Discount rate	9.0%
Earnings increases	6.2%
Average annuity rate at age 65	14.7
Index Linked Gilt yield + 0.05%	3.0%
Pre-retirement decrements	Ignored

PLEASE TURN OVER

Fund assets were invested in a typical balanced portfolio with 65% in equities, 25% in bonds and 10% in cash. During the past year, the All Share index fell by 30%, the yield on the long-dated Bond Index remained constant at 8% and cash returned 10%. The average salary increase granted during the year was 12% and membership statistics remained unchanged.

As a result of the downturn in the economy, the employer is experiencing financial difficulties. After a meeting with the trustees and the financial director you were asked to assist with a number of estimates. Based on current economic conditions, you have decided to increase the discount rate by 1% but to leave the other assumptions unchanged. The Index Linked Gilt yield remained unchanged, on the basis of which you decided not to change the net post-retirement discount rate.

(i) Using the information provided, estimate the fund's financial position, the value of minimum benefits and the required contribution rate for retirement benefits. You should assume that contributions and investment income are equal to benefit payments over the year. State any further assumptions that you make. [7]

(ii) Estimate the main sources of the change in the financial position. [5]

(iii) Discuss the financial implications for the employer, the members and the fund of each of the following options should the employer be unable to pay the required contributions:

(a) Liquidation of the Fund. [7]

(b) Ceasing accrual of retirement benefits [7]

[Total 26]

PLEASE TURN OVER

QUESTION 3

You are the valuator to a final salary pension fund. Following a sale of part of the business, a significant part of the assets and liabilities of the fund are to be transferred to another final salary pension fund..

You are in the process of completing the latest statutory valuation. The last one was submitted more than three years ago and showed a small surplus in the employer's surplus account, and a solvency reserve. There is no Member Surplus Account and no other contingency reserves.

Since the last valuation, equities, representing 67% of the fund, have dropped sharply.

(i) Set out your checklist for determining the transfer values including a discussion of the methods and assumptions that might be used to calculate them. [21]

The trustees are divided on the method and basis for determining the transfer values, primarily because one of the newly elected trustees, recently transferred from the UK, has argued that they should be based on the value of the members' exit benefits..

(ii) Detail the factors that you would bring to the trustees' attention, in response to the issue raised by the newly elected trustee. [3]

[Total 24]

END OF PAPER

