EXAMINATIONS

September 1998

Subject H — Pensions

Paper Two

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 all 4 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.

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1 You are the actuary acting for Company A. Company A is buying a division of Company B, and is negotiating purchase terms.

Both companies provide defined benefit pension schemes, each covering around 1,000 employees in service. The division to be bought employs around 200, of whom most are scheme members.

The major features of the design of each scheme are as follows:

	Company A	***Company B***
Pensionable salary	Basic pay, less the Lower Earnings Limit	Basic pay, plus specified pensionable allowances
Final pensionable salary	Average annual pensionable salary over the last 3 years of service	Average annual pensionable salary over the last 3 years of service
Normal retirement age	65	65
Pension at normal retirement age	1/60th of final pensionable salary per year of scheme service	1/60th of final pensionable salary per year of scheme service
Maximum commutation lump sum	3/80ths of final year's basic pay per year of service	Maximum permitted by Inland Revenue
Pension increases	Only statutory increases guaranteed, but in practice pensions in excess of the Guaranteed Minimum Pension have been fully inflation-proofed over the last 10 years	Pensions in excess of the Guaranteed Minimum Pension increase in line with Limited Price Inflation
Spouse's pension	50% of member's pension (including pension for prospective service to normal retirement age for members dying in service, based on pre-commutation pension for members dying after retirement)	50% of member's pension (including pension for prospective service to normal retirement age for members dying in service, based on pre-commutation pension for members dying after retirement)
Lump sum payable on death in service	4 times final pensionable salary	3 years' basic salary at the rate payable at the date of death
Members' contributions	5% of pensionable salary	None
Early retirement (good health)	With the employer's consent, member can retire at any age after 50, and will receive an actuarially reduced pension	Member can choose to retire at any age after 50, and will receive an actuarially reduced pension

	Company A	*Company B*
Ill-health early retirement	Covered by separate permanent health insurance plan	Immediate payment of member's pension, based on prospective service to normal retirement age

The companies have been negotiating the terms of the sale and purchase agreement, which sets out the calculation of a transfer payment to be paid from Company B's pension scheme to Company A's for transferring employees. Company A wishes the payment to include a proportionate share of the surplus in Company B's scheme. Company B is offering a transfer payment on a past service reserve basis.

(i) Describe the arguments that Company A might present to support its case for a transfer payment including surplus. [4]

(ii) Give reasons why Company A might be willing to accept a past service reserve transfer payment. [5]

(iii) Transferring employees are to be offered membership of Company A's pension scheme. Discuss the issues to be considered when designing the benefit structure which Company A should offer transferring members for periods of service after the purchase has completed. [10]

(iv) It is eventually agreed that a past service reserve transfer payment will be offered for periods of past service. The actuarial assumptions to be used to calculate the transfer payment are similar to those used by Company A for determining company contributions and pension expense for the company's accounts. Outline two approaches that could be used to determine the benefits to be granted in the Company A pension scheme in relation to Company B service (other than exactly mirroring existing Scheme B benefits), setting out the advantages of each approach. [5]

[Total 24]

2 You are advising the trustees of a medium sized defined benefit pension scheme which is not contracted-out. Two former members have approached the trustees to request that they rejoin the pension scheme having previously transferred their benefits from the scheme.

Member A is still employed by the company and opted out of the scheme 5 years ago to set up a personal pension after being in the scheme for 20 years. She also transferred her accrued entitlement into her personal pension. She wishes to have the full period of her past service re-instated to the date she first joined the scheme and join for future service benefits.

Member B left the company's employment 5 years ago and transferred his deferred pension entitlement into an insurance policy. He wishes to have his deferred pension re-instated in the scheme.

(i) Outline the issues that the trustees should consider before allowing each member to rejoin the pension scheme. [4]

(ii) Describe the basis which you would use to calculate the cost of re-instating Member A's past service rights. List all the financial and demographic factors about which you will need to make assumptions and suggest, with reasons, suitable values for the financial assumptions. [12]

(iii) You have calculated that the re-instatement cost for Member B is £20,000. The member's financial adviser has queried this figure since the transfer value was only £5,000 and the current fund value of the insurance policy is only £7,000. Explain the possible reasons for this large difference. [8]
[Total 24]

3 A company has an occupational money purchase scheme which is not contracted-out. Members pay 5% of salary. The Company pays contributions in accordance with the following table:

Age	*Company contribution rate*
under 30	3%
30–40	5%
40–50	8%
over 50	12%

The scheme operates a "lifestyle" investment approach. The lifestyle approach to be adopted for this scheme is that up to 10 years before Normal Retirement Age all contributions are invested in a fund which tracks the FTSE Actuaries All Share Index. Over the last 10 years the investments are gradually switched so that at retirement 75% is invested in a fund that tracks an appropriate UK Gilt Index and 25% is invested in a cash deposit fund.

Additional Voluntary Contributions are invested using the same approach except that over the final 10 years investments are only switched into the UK Gilt Fund.

(i) Outline the principles and other considerations which trustees should follow when setting the investment policy for a defined contribution scheme. [5]

(ii) Describe the characteristics of the assets underlying the three investment funds being used and set out the reasons why the lifestyle approach may be suitable. [8]

(iii) Discuss reasons why the Company may have chosen to have contribution rates which increase with age. [5]

(iv) The Managing Director has asked you to draft a notice to members covering the main features of AVCs and the reasons why members should consider paying AVCs. Draft an announcement. [10]
[2 marks are available for drafting]
[Total 28]

4 You have been appointed as scheme actuary to a defined benefit scheme which has just been closed to new entrants. You are carrying out the triennial valuation of the scheme.

The previous valuation used the projected unit method but you intend to use the attained age method to calculate the recommended contribution rate.

The following is an extract from your valuation.

Assumptions:		
	Interest	9%
	Salary Progression	7.5% (no salary scale)
	Post retirement increases (guaranteed)	4.5%
	Dividend growth	4% (100% equities assumed)

	Value at time t		***Present value (at t = 0)***	
Year t	*Benefits accrued over the year t to t + 1 £'000*	*Pensionable payroll earned over the year t to t + 1 £'000*	*Benefits accrued over the year t to t + 1 £'000*	*Pensionable payroll earned over the year t to t + 1 £'000*
0	476	3,440	476	3,440
1	504	3,612	463	3,314
2	542	3,837	456	3,229
3	579	4,050	447	3,127
4	609	4,220	431	2,990

	Value at time t		***Present value (at t = 0)***	
Year t	*Benefits accrued over the year t to t + 5 £'000*	*Pensionable payroll earned over the year t to t + 5 £'000*	*Benefits accrued over the year t to t + 5 £'000*	*Pensionable payroll earned over the year t to t + 5 £'000*
5	3,164	21,564	1,737	11,856
10	2,810	18,796	1,012	6,780
15	2,504	16,322	583	3,801
20	1,642	10,347	257	1,620
25	0	0	0	0

Value of benefits accrued at valuation date = £5,882,000

Actuarial value of assets at valuation date = £7,850,000

Pension liabilities are bought out at retirement so there are no pensioner liabilities.

The average term to retirement age is 10 years.

(i) Describe the different funding objectives of the Projected Unit Method and the Attained Age Method. [4]

(ii) Discuss the advantages and disadvantages of the Projected Unit Method and Attained Age Method for this scheme. [7]

(iii) Calculate the contribution rate you would recommend under each method. [5]

(iv) Calculate, on an approximate basis, whether or not the scheme has a statutory surplus. [5]

(v) Outline the actions which can be taken to eliminate a statutory surplus. [3]

[Total 24]