

INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

12 April 2024 (am)

**Subject CP1 – Actuarial Practice
Core Principles**

Paper Two

Time allowed: Three hours and twenty minutes

In addition to this paper you should have available the 2002 edition of the Formulae and Tables and your own electronic calculator.

If you encounter any issues during the examination please contact the Assessment Team on T. 0044 (0) 1865 268 873.

1 In a developed country there is a difference in pay between men and women known as the gender pay gap. The government is aware of the gender pay gap and has been taking action to address it, such as introducing regulation to enforce greater transparency in relation to employers' promotion, pay and reward processes, including a specific reporting requirement on gender pay gaps.

The country also has a gender pensions gap (the difference between the pensions of men and women). This is significantly greater than the gender pay gap. To date, the government has not done anything to address the gender pension gap.

The government has now decided to take action to reduce the gender pension gap. The government is proposing to reduce the income tax rate for women by 5% for the next 5 years. The tax rate for men would remain unchanged. For example, if the rate of income tax was 25% then women would pay 20% and men would still pay 25%.

An actuary has recently started working for a new employer. The actuary has been asked to investigate the gender pension gap for the employer's company and to write a report for the employer.

- (i) Describe the factors the actuary would need to consider before agreeing to carry out this work. [3]
- (ii) Outline the information that the actuary would need from the client before beginning the work. [5]
- (iii) Discuss how the gender pension gap could be measured. [4]
- (iv) Suggest possible reasons why the gender pension gap is greater than the gender pay gap. [6]
- (v) Discuss how effective the government's income tax proposal would be in reducing the gender pension gap. [4]
- (vi) Suggest other possible actions that the government could take to reduce the gender pension gap. [5]
- (vii) Comment on how other stakeholders may be affected by any reduction in the gender pension gap. [5]
- (viii) Describe the risks an individual with a lump sum at retirement may be exposed to. [8]
- (ix) Suggest the types of products that financial providers could offer individuals in respect of their lump sums on their retirement. [4]
- (x) Discuss how your suggestions in part (ix) may impact the risks identified in part (viii). [6]

[Total 50]

- 2 A small life insurance company (Company X) writes only immediate annuities. An extract from its latest financial information is as follows:

<u>Regulatory balance sheet at end of year</u>	£m
Assets at fair value	<u>100</u>
Liabilities	
At fair value	(85)
Required solvency and capital margins	<u>(10)</u>
	<u>(95)</u>
Free assets	<u>5</u>

New business is typically issued based on expected returns close to fair value investment returns. During the last financial year new business was priced assuming an average investment return assumption of 5% p.a. The end of year fair value investment return assumption for the company's liabilities is 7% p.a.

Company X has had a full independent review of its data and no issues were found. However, the company's annual profits have been declining for several years and the company is considering two options to increase its annual profits in the future. The two options are:

Plan A: Increase the profitability of its immediate annuity business.

Plan B: Increase overall company profits by selling different insurance products, possibly under a different brand name.

- (i) Discuss Company X's likely investment strategy for the assets backing its immediate annuity business. [7]
- (ii) Set out how the investment return assumption for the fair value of liabilities would be determined. [2]
- (iii) Explain why the investment return assumption for the fair value of liabilities can be higher than the average investment return assumption used in pricing last year's new business. [4]
- (iv) Describe how an analysis of experience could be used to investigate Plan A. [7]
- (v) Discuss a range of possible actions Company X could take to increase its profits under Plan A. [15]

- (vi) Discuss the factors Company X should consider when deciding if it should sell insurance under a different brand name under Plan B. [5]
- (vii) Discuss the factors Company X should consider when deciding if it should adopt Plan A or Plan B. [10]
- [Total 50]

END OF PAPER