INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

21 April 2023 (am)

Subject CP1 – Actuarial Practice
Core Practices

Paper One

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.

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1 Describe how an insurance company will express the different types of expenses it will include when pricing a home insurance protection product. [5]

2 An insurance company has a sales promotion on its website. In return for providing personal information, including details of any current or historic illnesses, the applicants will receive a term assurance quotation and be entered into a competition to win a car.

(i) Describe possible issues an insurance company should consider when asking applicants about their personal data. [3]

(ii) Outline what would be included in the company's data governance policy that could resolve the issues in part (i). [3]

[Total 6]

3 An insurance company sells products in a country where it is not compulsory for provisions to be held for its products.

The company has managed to pay all of its claims in full as they arise.

Suggest possible reasons why the company has managed to pay all of its claims in full to date. [6]

4 Following a recent worldwide pandemic, a developed country's government wants to investigate the impact that the pandemic has had on the mortality experience of its public sector pension liabilities.

Discuss how the government can investigate the pandemic's impact on the mortality experience of its public sector pension liabilities. [7]

5 Company A has purchased Company B. The purchase included the defined benefit pension and death benefit scheme Company B provides for its employees.

Company B's scheme has remained open to new employees of Company B and to the future accrual of benefits.

One year after the purchase, Company A has become concerned about the costs from Company B's scheme. Company A is now considering possible ways of reducing the costs from Company B's scheme.

(i) Suggest possible actions Company A could take to reduce the costs from Company B's scheme. [3]

(ii) Outline the factors that would need to be considered by Company A if it:

(a) decided to close Company B's scheme.

(b) fully removed the scheme's liabilities from Company A's balance sheet.

[7]
[Total 10]

6 A bank sells commercial mortgages to supermarkets. A portfolio of these commercial mortgages is now being put up for sale, and an insurance company is considering purchasing the portfolio as an investment opportunity.

(i) Set out the steps the insurance company should take to assess this investment opportunity. [5]

(ii) Discuss the issues that the insurance company should consider when choosing a method to value the portfolio. [5]
[Total 10]

7 (i) Propose, with reasons, three risks that a defined benefit scheme may wish to hedge. [3]

(ii) Explain why a defined benefit scheme may choose to use liability hedging. [2]

(iii) Discuss the risks that may still exist for a defined benefit scheme even if it has hedged its liabilities. [5]
[Total 10]

8 Country A has a regulatory capital framework that is very similar to Solvency II in the European Union. The standard formula regulatory capital model shows the following capital positions for an insurance company in Country A:

	At end of year 1 (£billion)	*At end of year 2 (£billion)*
Minimum Capital Requirement (MCR)	2	3
Solvency Capital Requirement (SCR)	4	5
'Free capital' over and above the total liabilities and SCR	1.5	0.3

(i) Suggest possible reasons why the MCR and SCR requirements may have increased over the year. [2]

(ii) Explain possible reasons why the regulator may be concerned with a reduction in the free capital over the year. [3]

An adviser has indicated that it could help the insurance company build an internal model that would increase the insurance company's free capital by £0.3 billion.

(iii) Discuss the considerations that the insurance company will need to take into account before using the proposed internal model. [4]

(iv) Outline the due diligence that the insurance company should carry out on the adviser. [3]

[Total 12]

9 An investment fund invests only in its domestic market. Its usual investment strategy has been to invest 50% in equities, 20% in property and 30% for the remainder, split equally between government bonds, corporate bonds and infrastructure.

Following a market shock, the proportion of funds in property has been significantly reduced. The investment manager of the fund is planning to rebalance and increase its property proportion back to 20%. The investment manager is considering investing in a large shopping centre.

(i) Outline possible reasons why, following the market shock, the proportion of funds in property has been significantly reduced. [7]

(ii) Discuss the suitability of a shopping centre as an investment for the fund. [6]

[Total 13]

10 A life assurance company sells a wide range of immediate annuities, including impaired life annuities. Lives in poor health are able to apply for an impaired life annuity. One of the rating factors used is the postal code (also known as the zip code) of the annuitant.

(i) Describe why the company will use homogeneous groups when pricing its annuities. [5]

(ii) Outline the reasons why an individual may seek to purchase an immediate annuity. [3]

(iii) Suggest, with reasons, the main types of life who are likely to be priced on an individual basis. [2]

(iv) Discuss how useful the postal code may be as a means of understanding some of the principal factors that contribute to the variation in mortality of the non-impaired annuitants. [6]

(v) Outline the possible types of selection among the non-impaired annuity lives. [5]

[Total 21]

END OF PAPER