INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

3 April 2019 (pm)

Subject CP1 – Actuarial Practice
Paper One

Time allowed: Three hours and fifteen minutes

INSTRUCTIONS TO THE CANDIDATE

1. *Enter all the candidate and examination details as requested on the front of your answer booklet.*

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

3. *Mark allocations are shown in brackets.*

4. *Attempt all questions, begin your answer to each question on a new page.*

5. *Candidates should show calculations where this is appropriate.*

Graph paper is NOT required for this paper.

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 from the approved list.

1 (i) List four key stakeholders in the risk governance of a life insurance company. [2]

(ii) Describe how each of the stakeholders in part (i) could contribute to the risk governance of the company. [4]
[Total 6]

2 (i) Define the Minimum Capital Requirement and the Solvency Capital Requirement under the Solvency II regime. [2]

(ii) Explain why an insurance company might use an internal model to assess its regulatory capital requirements. [4]
[Total 6]

3 Over the last five years in a particular country, the government has been reducing the amount of state healthcare it provides, while the population size has remained unchanged.

An insurance company operating in that country sells a variety of domestic products and is considering the implications of the healthcare reductions for its pricing assumptions.

Discuss the implications for the pricing assumptions of each of the company's products sold in that country:

(a) Term assurance
(b) Medically underwritten annuity (where the policyholder provided information on their health status at application stage)
(c) Private medical care
(d) Funeral cover (where the insurance company pays the funeral costs for the policyholder).

[8]

4 A general insurance company offers a worldwide travel insurance policy that provides coverage against the following risks:

- medical cover required whilst in a foreign country
- loss of luggage whilst travelling
- flight delays of more than three hours.

Describe tools that the insurance company can use to aid the management and control of the above risks. [10]

5 (i) Set out specific expense loadings that need to be considered for a long-term insurance contract. [5]

(ii) Describe how to carry out an expense analysis for the purpose of pricing a new long-term insurance contract. [5]
[Total 10]

6 (i) State what is meant by a 'best estimate' assumption. [1]

(ii) Give two examples where a 'best estimate' assumption would be suitable. [2]

(iii) Describe three methods of allowing for risk in cash flows. [6]

(iv) Discuss the purpose of equalisation reserves. [3]

(v) Suggest why a regulatory regime may not recognise equalisation reserves. [2]
[Total 14]

7 A retirement benefits scheme in Country A ('the Scheme') currently has all of its funds invested in domestic, as opposed to overseas, assets. The Scheme's managers are reviewing the fixed interest bonds currently held. They propose to invest a portion of the Scheme's assets in government bonds issued in Country B, which currently have a lower redemption yield than comparable bonds of Country A.

(i) Suggest possible reasons for the Scheme managers' proposal. [4]

(ii) Discuss factors which the Scheme's managers would need to take into account if the proposal were to be accepted. [5]

The Scheme's managers decide, instead, to switch all of the Scheme's government bonds (still of Country A) into recently issued corporate bonds from the retail sector of Country A.

(iii) Explain possible reasons for this decision. [3]

(iv) Discuss the risk characteristics of retail sector corporate bonds. [4]
[Total 16]

8 (i) Explain why it is necessary to have different mortality tables for different classes of lives. [5]

(ii) Discuss, in each of the following separate cases, the expected differences in the level of mortality:

(a) term assurance policyholders versus general population
(b) an employer's group life policy with an insurance company versus the insurance company's term assurances
(c) pensioners of an employer's directors' pension scheme versus pensioners of the employer's staff pension scheme.

[18]

(iii) Discuss why it is important to monitor mortality experience. Your answer should include references to the cases in part (ii). [7]

[Total 30]

END OF PAPER