

INSTITUTE AND FACULTY OF ACTUARIES



EXAMINATION

17 April 2018 (pm)

Subject CA1 – Actuarial Risk Management

Paper Two

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 must not start writing your answers in the booklet until instructed to do so by the supervisor.*
3. *You have 15 minutes of planning and reading time before the start of this examination. You may make separate notes or write on the exam paper but not in your answer booklet. Calculators are not to be used during the reading time. You will then have three hours to complete the paper.*
4. *Mark allocations are shown in brackets.*
5. *Attempt all eight questions, beginning your answer to each question on a new page.*
6. *Candidates should show calculations where this is appropriate.*

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** Describe the capital management tools available to help providers of financial products meet their responsibilities and achieve their goals. [6]
- 2** A European insurance company has a North American insurance company subsidiary.

Discuss how the capital requirements of this company may differ from those of a similar European insurance company only operating within its domestic market. [6]
- 3** A life insurance company has historically written individual annuity business. The company has recently closed to new business and has promised shareholders that this will lead to an increase in its profits over the next three years.
 - (i) Describe the issues the insurance company needs to consider when projecting its profits over the next three years. [4]
 - (ii) Discuss the management actions that could increase the profits for the company over the next three years. [5][Total 9]
- 4** (i) Describe the following:
 - (a) scenario analysis
 - (b) stress testing
 - (c) stochastic modelling[3]

An insurance company has recently adopted a new stochastic model to determine its capital requirements. The results of the new model show that the company needs to hold less capital than was calculated under the previous model. An actuary has recently started working for the insurance company and has expressed concern that the capital requirement is much lower than he was expecting.
 - (ii) Discuss the actions the actuary should take. [7][Total 10]
- 5** (i) State the main roles of a professional body. [2]
 - (ii) Suggest the problems that can arise if such a body's rules on professional standards are too demanding. [4]
 - (iii) Outline the areas that an actuary is usually required to certify when performing a statutory certification of the adequacy of the valuation of assets and liabilities for an insurance company. [5][Total 11]

- 6** A small general insurance company is based in a rural area. It mainly sells pet insurance. The majority of this business is obtained through local veterinary practices that act as agents and refer their customers to the insurance company.

The owner of one of the largest veterinary practices in the area has proposed that the insurance company expands by providing livestock insurance for the large local farming community.

- (i) Suggest how both the nature of the cover provided under this new line of business and the expected claims experience for livestock insurance is likely to differ from that of the existing pet insurance business. [5]
- (ii) Suggest the potential problems the insurance company would need to consider were it to expand as proposed. [7]
- (iii) Discuss how reinsurance might be used to mitigate some of the problems described in part (ii). [6]

[Total 18]

- 7** A general insurance company is considering launching a cyber insurance policy aimed at small businesses.

- (i) Outline the cover that could be provided by this policy. [4]
- (ii) Comment on how the needs and responsibilities of each of the relevant stakeholders might influence the design of the product. [4]
- (iii) Discuss the factors the company needs to consider when designing the product. [5]
- (iv) Comment on how your answer to part (iii) would change if the policy was aimed at:
 - (a) large companies.
 - (b) individuals.

[6]

[Total 19]

- 8**
- (i) Explain why regulation may exist to ensure that customers are treated fairly by providers of financial products. [4]
 - (ii) Discuss, for each of the following scenarios, whether the customer has been treated fairly:
 - (a) A motor insurance policy where a car has been written off in an accident and the amount offered to the customer is half what the customer considers it to be worth.
 - (b) A pet insurance policy where the claim has not been paid because the maximum annual limit has been reached.
 - (c) A personal pension where the income in retirement is a quarter of the amount that had been projected at outset.
 - (d) A with profits policy which has declared no bonuses for the past five years.
 - (e) A home insurance policy where no payout was made following a fire because the customer had not adhered to the conditions of the contract relating to switching on the burglar alarm.[12]
 - (iii) Suggest how a regulator could ensure that the customers in part (ii) are treated fairly. [5]
- [Total 21]

END OF PAPER