

INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

24 September 2020 (am)

Subject CP1 – Actuarial Practice Core Practices

Paper One

Time allowed: Three hours and fifteen minutes

<p>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.</p>

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

1 An insurance company only sells house insurance and motor insurance products. The company invests the premiums received on its insurance business in cash and short-term loans.

(i) Explain why the company currently invests in cash and short-term loans. [2]

It has been argued that the company could increase profits significantly by investing the premiums on its insurance business in more risky assets.

(ii) Suggest, with reasons:

(a) two assets that may be suitable assets for the company.

(b) two assets that would not be suitable assets for the company.

[4]

[Total 6]

2 A bank in a developing country and a large international insurer have established a joint venture insurance company. The company's first product will be a term assurance, sold by tied agents (i.e. sales people who only sell the products of one company) through the bank's branches.

Describe how the Actuarial Control Cycle can be used in the pricing and ongoing financial management of the term assurance product. [8]

3 A retail bank is planning to set up a new insurance subsidiary, located in a previously unoccupied floor in the bank's head office.

Describe the types of expenses that the subsidiary would be expected to incur in its first 12 months. [8]

4 (i) Describe the four steps necessary to achieve an effective identification and analysis of the risks facing a project. [4]

A savings product pays out a guaranteed lump sum to the beneficiary 2 years after purchase, in return for an initial single premium.

(ii) List the reasons the company may not pay in full. [2]

(iii) Outline the risks the beneficiary may face if the payment amount is not guaranteed. [2]

[Total 8]

5 An insurance company writes marine insurance to protect shipping from losses in relation to acts of violence such as war or piracy. Due to increasing political tensions, such actions are becoming more common in one area of the world in which the company has a number of clients.

(i) Describe, with specific examples, how the company can use risk control measures to mitigate exposure to the risks arising from these political tensions. [4]

(ii) Discuss how the company can use scenario analysis to predict and control future exposure to such risks. [4]

[Total 8]

6 (i) Outline the reasons why an insurance company needs to calculate provisions. [3]

One of the largest insurance companies located in a particular country has received an offer to be purchased by an overseas private equity firm.

(ii) Identify the different stakeholders involved in the proposed purchase, commenting for each how they might prefer the company's provisions to be calculated. [6]

[Total 9]

7 The insurance regulator in a country has noticed a significant deterioration in the capital strength of one of the insurance companies it supervises. The regulator has suggested that the insurance company works with a large bank to strengthen its financial position.

(i) Describe the types of capital management solutions that the bank could offer the insurance company to achieve the regulator's objective. [3]

(ii) Describe how effective each solution might be in satisfying the regulator that the insurance company's capital position had improved. [5]

The insurance company is also considering moving from a standard formula approach to an internal model approach to improve its capital strength, subject to obtaining regulatory approval for this change.

(iii) Discuss the advantages and disadvantages of the insurance company moving to an internal model approach from the perspective of the insurance company. [3]

(iv) Outline the issues the insurance regulator is likely to consider before agreeing to this change. [3]

[Total 14]

- 8** (i) Discuss the factors to be considered by an insurance company when deciding whether to use actual policy records or representative model points when using a financial model. [7]

An insurance company has recently completed a valuation of its liabilities for a particular class of business using its stochastic model. It has decided to review the accuracy of the results using actual policy records.

The company has already checked the accuracy of the data, assumptions and formulae to be used.

- (ii) Discuss the reasons why the insurance company has used a stochastic model rather than a deterministic model. [8]
- (iii) Set out the remaining steps that could be taken to review the accuracy of the model's calculated result. [4]
- [Total 19]

- 9** A number of countries are members of a union where member countries can access each other's markets. In return, member countries follow a consistent set of regulations governing, among other things, financial services.

Country F, a developed country that has been a member of the union for many years, has recently decided to leave the union. The government of Country F is proposing a full review of its regulations, including for financial services.

- (i) Outline the principal aims of regulation of financial markets. [2]
- (ii) Describe possible regulatory regimes the government of Country F could consider implementing. [3]
- (iii) Suggest an advantage and a disadvantage of each of the regimes identified in part (ii). [3]
- (iv) Outline the potential risks to the domestic financial services industry that Country F faces as a result of changing its regulatory regime now. [4]
- (v) Discuss why the countries remaining in the Union might be concerned about any changes to Country F's regulatory regime. [4]
- (vi) Suggest how the countries in the Union might seek to mitigate any risks in relation to (iv) and (v). [4]
- [Total 20]

END OF PAPER