

INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

21 April 2022 (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.

- 1** In a developing country, the market for life assurance and savings products is currently unregulated. The regulator is about to introduce a new regulatory regime for this market, and has chosen a regime that allows freedom of action of the life assurance companies but prescribes the outcomes that will be allowed.

Discuss the suitability of this regime for the stated market. [5]

- 2** An insurance company sells single premium unit-linked investment bonds. The bonds can be surrendered at any time by the policyholder for the full value of the units at the date of surrender.

The company is to introduce a new version of the bond with an attaching guarantee. Under the terms of the guarantee, the surrender value on the 5th and 10th policy anniversaries will be subject to a minimum of the single premium paid.

- (i) Outline how the company's administration systems will be affected by the introduction of the new version of the bond with a guarantee. [2]

- (ii) Outline how the company could manage the possible financial costs of the guarantee. [5]

[Total 7]

- 3** (i) Outline possible reasons why each of the following may need to accumulate capital:

- (a) An individual
- (b) An engineering company
- (c) A proprietary insurance company
- (d) A government.

[4]

A mutual insurance company wishes to expand its business, but has limited access to capital markets. The company is therefore proposing to convert itself to a proprietary company.

- (ii) Discuss the advantages and disadvantages of the proposal. [4]

[Total 8]

- 4** The managers of a large defined benefit pension scheme, which now consists solely of members with pensions in payment, have appointed an actuary to monitor the scheme's mortality experience.

- (i) Outline reasons why the scheme's mortality experience should be monitored. [4]

- (ii) Describe the data the actuary would require to undertake the monitoring. [5]

[Total 9]

- 5** A general insurance company writes business interruption insurance. An entirely new disease has emerged, and a number of policyholders have made claims for business interruption due to this new disease. The insurance company is considering whether to accept liability for these claims.
- (i) List the professionals or stakeholders that could be involved in deciding whether to accept liability for these claims. [3]
 - (ii) Discuss the issues the insurance company needs to consider in deciding whether to accept liability for these claims. [8]
- [Total 11]
- 6** Discuss how a fair valuation could be determined for each of the following types of asset:
- (a) Unlisted corporate bonds
 - (b) Commercial real estate loans
 - (c) Property
 - (d) Defaulted loans made to and secured on infrastructure assets. [12]
- 7** An actuary has been asked to price a new financial product for an insurance company, using a deterministic model. One of the assumptions in the pricing model is extremely uncertain.
- Discuss how the actuary could approach setting this assumption. [13]
- 8** Insurance companies in a particular country used to offer products that covered the costs of nursing-home care for elderly people. The number of elderly people in nursing homes has increased but these products are no longer offered.
- (i) Suggest possible reasons why these products are no longer offered. [5]
 - (ii) Propose other ways an individual could fund their future nursing-home care needs. [3]
 - (iii) Describe the risks the individual will face for each of the proposals in part (ii). [6]
- [Total 14]

- 9** A credit union is a non-profit financial organisation that is set up and owned by its members who share a common membership characteristic – for example, members who live in the same location or who work in the same profession.

The members of credit union GG all live in a particular city. GG offers savings and loans to its members.

- (i) Explain how the principle of pooling risks will apply to the loans GG offers. [3]
- (ii) Describe how the methods of risk acceptance, rejection, transfer and management can be used by GG to manage the loans it offers. [5]

Due to exceptional circumstances affecting some of its members, GG has decided to allow all members access to a loan of up to £500. Loans will be automatically granted to all members who apply within a fixed time period.

- (iii) Suggest reasons why GG might have decided to offer these exceptional loans. [4]
- (iv) Explain potential problems GG may have, relating to these exceptional loans. [2]
- (v) Discuss how the problems identified in part (iv) could be mitigated. [3]
- (vi) Discuss how your answer to part (iv) may differ if GG was formed of members with a common profession, rather than of members who live in the same city. [4]

[Total 21]

END OF PAPER