INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

11 April 2016 (pm)

Subject SA2 – Life Insurance
Specialist Applications

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 have 15 minutes at the start of the examination in which to read the questions. You are strongly encouraged to use this time for reading only, but notes may be made. You then have three hours to complete the paper.*

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

4. *Mark allocations are shown in brackets.*

5. *Attempt both 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.

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1 (i) Compare economic capital and regulatory capital assessments. [5]

A UK proprietary life insurance company writes with profits business in a segregated with profits subfund within the company. Shareholders benefit from distributed surplus on a "90:10" basis. Without profits business is written in a separate subfund, solely for the benefit of shareholders.

The with profits fund adopts a single investment strategy for the whole fund and follows the strategy communicated to customers for the investment of asset shares. This strategy has a high proportion of equities.

The majority of the liabilities are single premium unitised with profits investment bonds. These policies have a guarantee that no market value reduction (MVR) can be applied on the tenth anniversary of the policy. The tenth anniversary, for most policies currently in force, is between five and ten years from now. The company makes no explicit charge to customers for this guarantee, nor does it make any implicit charge to the asset share for the cost of capital or guarantees.

The company has adopted a risk appetite framework for its with profits fund, which sets a preferred range for the available economic capital expressed as a percentage of the required economic capital. At present, the available capital exceeds the required regulatory capital, but is below the preferred range on the economic basis.

(ii) Suggest possible actions that the company could consider if it wants to increase the available economic capital percentage so that it falls within the preferred range. [8]

(iii) Assess the likely effectiveness and suitability of these actions, including their acceptability to various stakeholders. [23]

A number of years have passed and the available capital in the with profits fund is now above the preferred range.

(iv) Outline the likely views of the regulators in this situation. [2]

(v) Suggest possible actions that the company could take to reduce the available capital in the with profits fund so that it falls within the preferred range. [4]

The company writes unit-linked pensions policies in the without profits subfund. The unit-linked pension business does not provide any guarantees to the policyholders. The benefit for the policyholder in all circumstances is the value of units at the time of exit. The only charge is an annual management charge expressed as a percentage of the unit fund.

The company performs financial projections of the pension business in order to determine the appropriate level of capital to hold to ensure the solvency of the without profits subfund under extreme adverse future scenarios.

(vi) Describe how the company might use an economic scenario generator (ESG) for this purpose. [5]

(vii) Outline the main risk to the company from the unit-linked pension business and, hence, the main non-economic stress tests that would be required. [3]

[Total 50]

2 (i) Describe the "three lines of defence" model that can be used to implement enterprise risk management for a life insurance company. [3]

A UK life insurance company sells only conventional without profits immediate annuities. The Chief Risk Officer (CRO) is currently undertaking a detailed review of the risks faced by the company.

(ii) Describe the liquidity risk that may arise for this company. [3]

(iii) Describe the conduct risk that may arise for this company. [4]

The company's asset portfolio contains significant investment in corporate bonds.

(iv) Suggest methods by which the credit risk arising from these bonds can be controlled. [3]

(v) Describe the nature of the longevity risks that arise for this company, including those associated with modelling future longevity. [12]

The CRO is planning to recommend reducing the level of longevity risk to which the company is exposed.

One suggestion that is being considered to achieve this plan is to start selling term assurance products.

(vi) Comment on the likely effectiveness of this suggestion in reducing longevity risk. [3]

(vii) Outline other issues that could arise for the company in relation to this suggestion. [6]

The company has instead decided that it would like to transfer some of the longevity risk to a third party, although it does not wish to sell or undertake a securitisation of the business.

(viii) Describe two distinct ways in which the company could achieve this transfer of longevity risk. [9]

(ix) Compare the additional risks that arise under these two approaches. [7]

[Total 50]

END OF PAPER