# INSTITUTE AND FACULTY OF ACTUARIES

# Curriculum 2019

# SPECIMEN EXAMINATION

## Subject SA2 – Life Insurance
## Specialist Advanced

*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 both questions, beginning your answer to each question on a new page.*

5. *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** A life insurance company operates in a country where the Solvency II regulatory framework applies. The company currently writes only conventional without profits deferred and immediate annuities. They are written into the same fund, with a single investment portfolio covering both product types.

The company has just produced its Solvency II balance sheet for the current reporting period. The Solvency Capital Requirement (SCR) is calculated using the standard formula.

(i) (a) Outline the five risks which are likely to be most significant for this company.

(b) State the standard formula risk module to which each of these risks relates.

[5]

The company defines its "solvency ratio" on the Solvency II basis as the ratio of surplus assets (the excess of assets over technical provisions and SCR) to its total assets. It has a target range within which it aims to maintain this ratio.

In its latest Solvency II results, the solvency ratio is close to falling below the lower end of the target range.

(ii) Suggest ways in which the company could improve the solvency ratio. [9]

The company has decided to apply for a matching adjustment on its immediate annuities.

(iii) (a) Explain why this type of business may be appropriate for obtaining a matching adjustment.

(b) Explain how the matching adjustment will impact the Solvency II technical provisions.

[3]

(iv) Assess the likely impact of the matching adjustment on the standard formula SCR, making clear your reasoning. [4]

The local insurance regulator requires a separate Solvency II balance sheet to be produced for business with a matching adjustment.

The company is therefore now undertaking an exercise to identify appropriate assets to match the immediate annuities for this balance sheet.

(v) Describe how it will identify appropriate assets and the factors that it will need to consider when doing so. [11]

The Chief Risk Officer (CRO) of the company has expressed concerns about the overall level of longevity risk to which the company is exposed, and has proposed two suggestions to reduce the company's longevity risk.

The first suggestion is for the company 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 second suggestion is that the company should transfer some of the longevity risk to a third party, although the CRO has stated that she 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 57]

**2** A life insurance company which currently writes a wide range of individual products is considering launching a unit-linked group pension product. This will provide employers with the facility to set up a personal pension for each of their employees. The insurer would administer the personal pensions together as one scheme per employer, but to each employee member the contract would appear the same as an individual personal pension.

(i) Discuss the factors that the company will need to consider when designing and developing the product. [22]

After many years of writing the group pensions product, the insurance company is now considering outsourcing significant administration functions, including IT support, customer services and unit pricing, to a specialist administration company. This contract would include functions that support the new business and ongoing administration of the group pensions product. The outsourcing contract would involve transferring administration to a new IT system.

(ii) Describe the additional risks to which the company would be exposed in entering into this outsourcing contract. [9]

(iii) Describe the controls that the company could put in place to mitigate these risks. [12]
[Total 43]

## END OF PAPER