INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

13 October 2015 (am)

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.

1 (i) Outline the twelve European Embedded Value (EEV) Principles that were developed by the CFO Forum. [7]

An established UK proprietary life insurance company writes without profits business comprising a range of protection, immediate annuity and deferred annuity products.

The company has performed EEV calculations (gross of tax) for its portfolio of in-force immediate and deferred annuity business. The immediate annuities have no guarantee period or return of premium features.

An extract from the company's financial information (including EEV results) is as follows. Note that the figures as at the end of the year exclude the impact of new business written during the year and, where relevant, are stated net of (i.e. after) withdrawals.

	Start year *(£000)*	*End year (excluding new business)* *(£000)*
Annual premiums	24,500	
Sum assured in-force on death (deferred annuities)	1,345,000	
Withdrawal benefits paid out (deferred annuities)		3,200
Annual annuity benefits (immediate annuities)	125,670	
Present value of future profits on in-force business	254,659	214,675
Reserves for deferred annuities	134,400	145,900
Reserves for immediate annuities	2,204,400	2,076,900

The contribution to EEV profit from new business was £33 million for immediate annuities and £2 million for deferred annuities.

The following can be assumed:

- Premiums are payable at the start of the year.
- Death claims (deferred annuities) are payable halfway through the year.
- Deferred annuity withdrawals occur at the end of the year.
- None of the deferred annuities reach their vesting dates by the end of the year.
- Immediate annuity benefits are payable at the start of the year.
- Expenses are incurred annually in advance.
- There is no free surplus at the start of the year.
- Tax can be ignored.

Experience during the year was as follows:

	Actual Experience	
	Immediate annuities	*Deferred annuities*
Mortality rate	3.50%	1.00%
Investment return/discount rate	4.00%	5.50%
Expenses as % of reserves at start of year	0.25%	0.25%

(ii) Calculate the EEV profit or loss (gross of tax) arising during the year from this portfolio, showing your workings. [7]

The company now enters a longevity reinsurance transaction on its immediate annuities with a reinsurer. A block of business with reserves of £1,000 million is transferred to the reinsurer, and this is paid for with a single premium, *P*.

(iii) Explain the impacts of this transaction on the company's EEV. [10]

The table below shows, for some of the key experience basis elements, the expected rates from consecutive year ends and the actual experience seen in the first half of the year between them. All figures are expressed as per annum rates.

	Expected rate Year end 2013 EEV basis	*Expected rate Year end 2014 EEV basis*	*Actual experience Half year 2014*
Withdrawal rates Individual deferred annuities	4.5%	4.0%	3.4%
Withdrawal rates Group deferred annuities	3.0%	3.0%	4.5%
Investment return Immediate annuities	4.0%	5.5%	4.2%

(iv) Discuss why the company may have set these elements of the year end 2014 basis to the figures given, taking into account the year end 2013 basis and the half year actual experience. [17]

The company sets up a Deferred Acquisition Cost ("DAC") asset each year in respect of new group deferred annuity business.

(v) Explain what is meant by a DAC asset. [6]

(vi) Explain how the Retail Distribution Review would have affected the company's practice in respect of the DAC asset. [3]

[Total 50]

2 A UK 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. [27]

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. [14]

[Total 50]

END OF PAPER