INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

5 October 2011 (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 all three questions, beginning your answer to each question on a separate sheet.*

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) State the areas covered by the three core rules of FSA Pillar 2 requirements. [2]

A life insurance company, which has been selling unit-linked business and without profits annuities for a number of years, has calculated its ICA submission for 31 December 2010. A detailed ICA report was submitted to the Board in February 2011, and which contained the following tables:

Table A: Capital required from individual risk 99.5% survival event stresses and from the combined 99.5% survival event stress.

			Capital required £m
Individual Risks	Time zero reduction in market values	*Equity*	100
	Widening of credit spreads	*Credit*	25
	Annuitants living longer	*Longevity*	10
	Flat increase in non annuitant mortality rates	*Mortality*	15
	Increase in lapse rates	*Persistency*	30
	Increases in expenses	*Expenses*	15
	Risks within operational areas	*Operational*	30
		Sum of individual stresses	**225**
		Combined scenario result	**175**
		Total benefit from combining stresses	**50**

Table B: The correlation matrix used to reflect the diversification between risks.

	Equity	*Credit*	*Longevity*	*Mortality*	*Persistency*	*Expenses*	*Operational*
Equity	100%	75%	0%	0%	50%	0%	50%
Credit	75%	100%	0%	0%	25%	0%	50%
Longevity	0%	0%	100%	–25%	25%	0%	25%
Mortality	0%	0%	–25%	100%	0%	0%	25%
Persistency	50%	25%	25%	0%	100%	25%	50%
Expenses	0%	0%	0%	0%	25%	100%	25%
Operational	50%	50%	25%	25%	50%	25%	100%

A Board member has commented that "surely combining all the stresses together will result in more, not less, capital required than the sum of the individual stresses, as we are at greater risk from everything bad happening at once". Your manager has asked you to draft a note in response to this comment.

(ii) Explain the points that you should cover in this note. [6]

(iii) Explain the likely rationale for the following correlation assumptions from Table B:

(a) equity and persistency
(b) annuitant longevity and non annuitant mortality
(c) persistency and operational
(d) persistency and non annuitant mortality [9]

A new Board member who has recently joined from another large UK life insurance company has questioned the rationale behind the equity and persistency correlation assumption. In his previous company, which primarily sold unitised with profits business, it was assumed that lapse rates reduced when equity markets fell.

(iv) Explain why his previous company may have assumed this. [3]

The company's Risk Committee has highlighted that the ICA report demonstrates that the company is exposed to a large risk from surrenders following equity market falls. This is in respect of its unit-linked single premium bonds, which have a guarantee to return at least the premium on surrender within the first ten years. The bond is one of the company's best selling products. A large proportion of policyholders invest in equity-based funds and the company has recently experienced high surrender rates following equity market crashes.

(v) Describe how the company could reduce its exposure to this risk. [4]

The Actuarial Function Holder (AFH) produced a separate paper for the Board stating how this ICA submission has complied with professional guidance.

(vi) List the names of the guidance relevant for this submission. [3]

For the following year end, TAS M and the Insurance TAS will also apply.

(vii) Outline the requirements of this new professional guidance. [5]

The Board is aware that the reporting regime is due to change with the introduction of Solvency II, and has asked the AFH for some background information comparing the main features of the new regime with those of the ICA. At this point the Board is only interested in understanding the general principles, rather than any specific impacts on the company.

(viii) Outline the points that the AFH should make. [7]
[Total 39]

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2 (i) State the six Treating Customers Fairly (TCF) consumer outcomes set out by the FSA. [3]

(ii) Describe the main areas where TCF is considered in the management of a with profits fund. [15]

A realistic basis with profits fund that contains only conventional with profits policies is invested in a mixture of equities, property and fixed interest assets. The split for the last ten years has been around 60% in equities, 10% in property, 30% in fixed interest securities. It does not invest in any derivatives.

There has been a sudden 40% fall in the market value of equities. This did not impact the value of property or fixed interest securities.

(iii) Discuss the likely impacts of this fall on the Pillar 1 balance sheets. [14]

(iv) Discuss likely management actions that could be taken in response to this, including the TCF considerations relating to their implementation. [13]

A complaint has been received from a customer whose policy has just matured. He is unhappy because he has received a lower maturity value than a neighbour who had the same policy. The customer's policy matured after the recent 40% fall in equities, whereas his neighbour's policy matured before this fall.

The customer has stated that, whilst he is aware that stock market values have fallen, it is unfair that he has received less as he thought that the policy was supposed to smooth away the peaks and troughs in investment returns.

(v) Outline the key points that should be made in response to this complaint. [6]
[Total 51]

3 A subsidiary of a UK life insurance company started writing a single premium unit-linked savings product in 2007.

Since the introduction of this product, a flat lapse assumption of 6% per annum has been used in the European Embedded Value projections. The actual lapse experience in 2008 was 9%, in 2009 was 9.5% and in 2010 was 7.5%.

The director responsible for the subsidiary has suggested that a lapse assumption of 5.5% per annum should be used in the embedded value projections for 2011 onwards, as the recently observed lapse rates are only the result of the 2008 financial crisis and are not expected to continue.

Discuss this suggestion. [10]

END OF PAPER