EXAMINATION

19 May 2016

Subject F202 — Life Insurance
Specialist Applications

Time allowed: Three hours

INSTRUCTIONS TO THE CANDIDATE

1. *Candidates will be issued with instructions to log-in using a password (which you will be provided with at the exam center).*

2. *Candidates are required to submit their answers in Word format only using the template provided. You MAY NOT use any other computer program (e.g. Excel) during the examination.*

3. *Save your work continuously throughout the exam, on your computer's hard drive that you have been provided.*

4. *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.*

5. *You must not start typing your answers until instructed to do so by the invigilator/supervisor.*

6. *Mark allocations are shown in brackets on exam papers.*

7. *Attempt all questions, beginning your answer to each question on a new page.*

8. *Candidates should show calculations where this is appropriate.*

Note: The Actuarial Society of South Africa will not be held responsible for loss of data where candidates have not followed instructions as set out above.

AT THE END OF THE EXAMINATION

Save your answers on the hard drive.
Hand in your question paper with any additional sheets firmly attached.

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.

QUESTION 1

A life insurance company has just completed an actual vs. expected mortality analysis covering the term-insurance business (risk only) written over the last six years. Your manager has seen the analysis and concluded that the book has been running profitably over the period of investigation and has in fact become more profitable over time. Based on this, she has recommended a change to the EV mortality assumptions for this book of business.

The analysis is set out in the table below. The experience (set out as actual claims expressed as a percentage of the expected claims) is broken down by the policy start date (underwriting year) and calendar year.

Policy start year	**Calendar year**						**2010 to 2015**
	2010	**2011**	**2012**	**2013**	**2014**	**2015**	
2010	95%	95%	95%	100%	105%	110%	**99%**
2011		90%	90%	95%	105%	105%	**96%**
2012			90%	90%	95%	100%	**93%**
2013				85%	80%	80%	**82%**
2014					75%	75%	**75%**
2015						75%	**75%**
2010 to 2015	**95%**	**92%**	**91%**	**92%**	**89%**	**87%**	**90%**

(i) Describe the factors that should be considered in determining assumptions in general to be used for an EV calculation. [7]

(ii) Discuss the analysis and include an assessment of your manager's views and any high-level conclusions that can be drawn from the results as presented. [13]

(iii) Discuss any additional information required to decide whether mortality assumption changes should be made and why this additional information would be necessary. [12]

The company is considering developing a new life assurance product that pays out an income to a nominated beneficiary on the policyholder's death instead of a lump sum.

(iv) Discuss the advantages and disadvantages of this product to both the policyholder and the company. [12]

(v) Outline some of the measures that would limit the disadvantages to the company discussed in part (iv). [6]

[Total 50]

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QUESTION 2

The Solvency and Assessment Management regime (SAM) is due to become effective in South Africa from 1 January 2017.

(i) Briefly explain the main purposes of each of the pillars in the SAM structure. [5]

(ii) List the main components and subcomponents of the SAM SCR modular structure under the standard formula approach. [4]

The Financial Services Board's Board Notice 158 requires insurance companies to have a Risk Management Function and an Actuarial Function.

(iii) Outline the different responsibilities of these two functions. [10]

[Total 19]

QUESTION 3

You work for a large South African life insurance company selling a wide range of products. For IFRS reporting purposes, the insurance liabilities are calculated on the Financial Soundness Valuation (FSV) basis. Negative reserves are zeroised, and the reserve for savings products is the unit fund with an allowance for Deferred Acquisition Costs (DAC).

The insurer has drawn up its financial position on the current IFRS/FSV basis and the proposed SAM basis:

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	R'm	IFRS/FSV (per AFS)	SAM
a	**Total assets**	**136 402**	**135 373**
	Less liabilities	**-117 316**	**-108 988**
b	Policyholder liabilities	-112 695	-103 407
c	Deferred Tax liability	-	-1 986
	Subordinated debt	-1 026	-
	Other long-term and current liabilities	-3 595	-3 595
d	**Shareholder funds/Own funds before adjustments**	**19 086**	**26 385**
e	**Prudential regulatory adjustments**	**-8 822**	**-5 018**
f	**Subordinated debt**	**1 026**	**-**
g	**Available Statutory Capital/Basic Own Funds**	**11 290**	**21 367**
h	Capital Requirement (CAR/SCR)	2 975	10 117
i	Capital cover (times)	3.8	2.1

(i) Explain the reasons for the differences in the values (between the FSV and SAM bases) in

The total assets (a)

The policyholder liabilities (b)

The prudential regulatory adjustments (e)

The Statutory Capital and Basic Own Funds (g)

(include comments on the magnitude and direction of the differences) [13]

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Once SAM is effective the insurer will continue to use the IFRS/FSV basis for its published financial statements.

(ii) Explain why the company would not use the SAM basis as a reporting basis. [10]

(iii) Outline the likely impact on the company's embedded value once SAM is effective. [4]

The Finance Director has queried the difference between the CAR cover of 3.8 and the SCR cover of 2.1. She is concerned that this shows that the company is not in as strong a financial position as previously thought.

(iv) Compare the CAR and SCR calculations and comment on the Finance Director's observation about the strength of the company's financial position. [4]

[Total 31]

[Grand Total 100]

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END OF EXAMINATION

