

## 2010 Examinations

### SPECIMEN EXAMINATION

#### Subject SA3 — General 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 before 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 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** Megasure Group was established in Japan over 100 years ago. Its headquarters are still in Japan and it has become one of the world's largest general insurance and reinsurance organisations. Although it does not write any business in Europe at present, it has operations in many other countries worldwide. Megasure Group writes most types of insurance and reinsurance business, although not every product is written in every country.

Following a strategic review, Megasure Group is considering writing general insurance business in Europe. You are a consulting actuary and have been engaged to advise Megasure Group. You have been told that:

- It has initially decided to write only commercial property business. However insurance will only be provided on large commercial risks, including large office blocks or factories.
- Both insurance and reinsurance business will be written.
- The business will be written in London.

Megasure Group is considering two methods of entering the European market:

- A Becoming a corporate name on a Lloyd's syndicate writing commercial property business.
- B Establishing a wholly owned subsidiary company in the London market to write this business.

Initially they would like advice to help them choose between the two market entry options above.

- (i) Define the following terms:
  - (a) Lloyd's
  - (b) The London Market

[2]
- (ii) Describe the main features of Lloyd's. 

[8]
- (iii) Describe the main differences between becoming a corporate name on a Lloyd's syndicate and establishing a wholly owned subsidiary. For each difference, explain why it may be important for Megasure Group in deciding its preferred method of entering the market. 

[12]

Megasure Group subsequently decides to establish a wholly owned subsidiary, Megasure Insurance Company Europe (MICE). You have been approached to assist MICE in estimating its capital requirements for regulatory purposes. MICE will start underwriting in 2010. You have produced the following estimates for the first three years of operations, based on MICE's business plan:

<i>TABLE 1</i>			
<i>Estimated Capital Requirements for MICE</i>			
<i>Amounts in £ millions</i>			
<i>Year</i>	<i>2010</i>	<i>2011</i>	<i>2012</i>
<i>MCR</i>	10	20	35
<i>RMM</i>	10	20	35
<i>ECR</i>	25	35	45
<i>ICA</i>	35	45	50

- (iv) State the meaning of each of the abbreviations MCR, RMM, ECR and ICA and give a brief description. Details of how these amounts are calculated are not required. [4]

Megasure has considered the amounts shown in Table 1. Megasure needs to transfer capital to MICE in 2009 in order that MICE can obtain approval from the FSA to start writing business in 2010.

- (v) Describe the factors that Megasure should consider when deciding on the initial capitalisation of MICE. Your answer should consider each of MCR, ECR and ICA, in addition to any other relevant factors. [13]

In its business plan, MICE assumed it would purchase excess of loss reinsurance and that the net cost of this reinsurance would be £1 million per year. You allowed for this reinsurance when estimating the ICA amounts shown in Table 1. MICE has now asked you to produce an ICA estimate assuming that no reinsurance is purchased. Your revised estimates are shown below, together with the original estimates from Table 1.

<i>TABLE 2</i>			
<i>Alternative ICA Estimates for MICE</i>			
<i>Amounts in £ millions</i>			
<i>Year</i>	<i>2010</i>	<i>2011</i>	<i>2012</i>
<i>ICA – if reinsurance is purchased</i>	35	45	50
<i>ICA – if no reinsurance is purchased</i>	40	50	55

- (vi) MICE is considering whether it should buy reinsurance or not. Discuss the matters that MICE and its parent, Megasure, should consider. [8]

MICE is preparing to submit its authorisation application to the FSA. An FSA official is quoted in the press as saying that London Market insurers must monitor their pricing more closely. MICE has called you to discuss this matter.

- (vii) List ways in which MICE can make sure it charges adequate premiums, commenting on the practicality of each suggestion. [9]

Following authorisation from the FSA, MICE is considering writing another line of business in addition to commercial property.

- (viii) Discuss the issues that MICE should consider before it decides whether or not to write an additional line of insurance. [6]  
[Total 62]

**2** Company A is a large insurance group with worldwide operations. One of its small subsidiary companies, Company B, is a UK company that started writing international property and liability reinsurance business in 1950. Company B took the decision to pull out of the US reinsurance market in 1980 and since then has focused on writing a small and very profitable European property reinsurance book. Company B's discontinued portfolio currently consists largely of US Asbestos, Pollution and Health Hazard ("APH") liabilities. In recent years, Company A has needed to inject more capital into Company B following reserve deteriorations on the US APH liabilities. The technical reserves for Company B are established on a discounted basis. The Board of Company A is currently considering selling Company B in view of Company A's worldwide strategy to focus on writing direct business.

- (i) Define the four main stages in the development of a latent claim and describe the process for estimating reserves in each stage. [15]
- (ii) Discuss alternative options open to Company A to remove the risks of the APH liabilities within Company B, explaining their advantages and disadvantages. [14]

The company actuary for Company B has provided the following estimates in respect of the APH liabilities as at 31 December 2008.

<i>Figures in US\$m</i>	<i>Case reserves</i>	<i>Annual</i>	<i>Best estimate reserves</i>		<i>High estimate reserves</i>	
		<i>Average Paid (last 3 years)</i>	<i>Undiscounted</i>	<i>Discounted 4%</i>	<i>Undiscounted</i>	<i>Discounted 4%</i>
Asbestos	12.8	2.7	51.3	34.5	77.0	48.8
Pollution	12.1	4.5	24.1	19.8	36.2	29.7
Health Hazards	1.0	0.8	2.0	1.8	3.0	2.5
<b>Subtotal</b>	<b>25.9</b>	<b>8.0</b>	<b>77.4</b>	<b>56.2</b>	<b>116.1</b>	<b>81.0</b>
Claims handling expenses		1.0	3.1	2.5	4.6	3.8
<b>Total</b>		<b>9.0</b>	<b>80.5</b>	<b>58.7</b>	<b>120.7</b>	<b>84.8</b>

Company B's assets have produced investment return averaging 4.2% per annum over the last 3 years.

- (iii) (a) Estimate the discounted mean terms of each claim type on each of the Best estimate and High estimate bases. [9]
- (b) Comment on the reasonableness of the relative length of these discounted mean terms. [Total 38]

**END OF PAPER**