

# INSTITUTE AND FACULTY OF ACTUARIES

## Curriculum 2019

### SPECIMEN EXAMINATION

#### Subject SA3 – General Insurance 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.*

***Graph paper is NOT required for this paper.***

#### **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.*

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Minette is a small country experiencing high rates of economic growth. The Minette Insurance Regulatory Authority (MIRA) is reviewing the minimum capital requirement for general insurers.

Under the current regulations, the minimum capital requirement is calculated by applying pre-specified factors to amounts from company accounts.

MIRA has issued a proposed new capital requirement for consultation, to be based on percentiles produced by an internal capital model.

- (i) Discuss why MIRA may prefer general insurance companies to assess their regulatory capital requirements using an internal model based approach rather than a prescribed formula. [5]
- (ii) Discuss why general insurers may prefer to use a prescribed formula to calculate regulatory capital requirements, rather than through an internal model. [5]

Within the new proposed standards, MIRA has also included an operational risk component. This component is set to be 25% of the premium expected to be written in the next 12 months, where forecast premium growth is more than 25% per year. If forecast premium growth is less than 25% per year then no capital is required for operational risk.

The head of MIRA made the following comment in an interview:

*“Operational risk is a significant cause of insurance company failure, but is not allowed for explicitly in the current capital standards*

*The proposed standards include an operation risk component, and will therefore increase the sophistication of risk management in insurance companies and reduce the probability of insolvency.”*

- (iii) Discuss whether the operational risk charge will “increase the sophistication of risk management in insurance companies and reduce the probability of insolvency”. [6]

The following table shows financial information for two companies, including current and proposed regulatory capital requirements.

**Table – Capital Requirements for Company A and Company B**

<i>\$ millions</i>	<i>Company A</i>	<i>Company B</i>
<i>Amounts from Financial statements at 31 December 2012</i>		
Earned Premium	100	100
Outstanding Claims	100	40
Assets	300	300
<i>Current Regulatory Capital Requirements</i>		
Liability Risk		
Underwriting Risk	25	25
Asset Risk	5	25
Other Components	0	0
<b>Regulatory Minimum Capital</b>	<b>55</b>	<b>60</b>
<i>Proposed Regulatory Capital Requirements</i>		
Liability Risk	25	5
Combined Underwriting and Asset Risk	50	5
Operational Risk	30	0
Other Components	0	0
<b>Regulatory Minimum Capital</b>	<b>105</b>	<b>10</b>

(iv) Discuss possible reasons for the changes in the regulatory capital requirements for liability, underwriting and asset risk, shown in the table above. Your answer should consider both companies. [14]

Company B has net assets of \$100 million. The Managing Director of Company B has noted that its regulatory capital requirements reduces to \$10 million under the proposal. She is therefore proposing to pay a special dividend of \$80 million at the end of the financial year.

(v) Discuss whether the dividend is appropriate [12]

**[Total 42]**

ABC Insurance, a large global insurance company writing several lines of business covering small and medium risks, is considering acquiring a growing insurance company, XYZ. Motor business accounts for 90% of the business currently written by XYZ.

- (i) List the data that ABC might request to support claims-related investigations prior to acquisition. [6]
- (ii) Describe the investigations that ABC might carry out to ensure that the claims provisions and profile are appropriately reflected in the purchase price. [15]

A reserve review is carried out by external consultants acting on behalf of ABC Insurance company. The review concluded that the reserves are understated and has identified two key areas of uncertainty:

- Material weakness in the operational claims processes underlying the reserving
  - Recent and pending legislative changes increasing the level of awards for bodily injury settlements and seeking to address the market-wide deteriorating claims experience
- (iii) Outline the concerns that these two areas of uncertainty raise for the acquisition [6]
- (iv) Suggest why ABC may proceed with the acquisition in spite of these concerns, considering possible mitigating conditions that might be imposed on the deal. [6]

The acquisition takes place after negotiating a purchase price to reflect the reserve shortfall. Post-acquisition the provisions are increased to eliminate shortfall.

Since the acquisition, XYZ has experienced a significant loss of resource, including actuarial capability. At the following year end, ABC requests the new Chief Actuary of XYZ to conduct a reserve review. Data and results indicate:

- Material movement's in case reserves, post-acquisition
  - Significant deterioration in prior year reserve results
  - Significant uncertainty in the current year results
- (v) Provide some possible explanations for each of these observations [7]

ABC plans to align the newly acquired business with its internal reserving standards and processes, which are compliant with Solvency II requirements. XYZ is based in a country which does not have a Solvency II basis of reserving.

In order to facilitate embedding and implementing the new reserving standards, ABC considers two options:

Option A: XYZ to manage and review its reserves independently, subject to review and oversight from the ABC team

Option B: XYZ to provide data to the ABC team who will perform the complete review, effectively treating the business as an additional line of business.

- (vi) Outline the advantages and disadvantages of each option. [6]
- (vii) Suggest other operational improvements that may need to be addressed to support the improvements required in the reserving process. [2]
- (viii) Set out the changes that may be required to XYZ's data, methods and processes to make their reserving Solvency II complaint. [10]

**Total [58]**

**END OF PAPER**