

# INSTITUTE AND FACULTY OF ACTUARIES

## EXAMINATION

5 October 2011 (pm)

### 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.*

<p><i>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.</i></p>
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1 Sunland is a small, prosperous country with a population of around 2 million people.

It is mandatory for employers in Sunland to purchase employer's liability insurance from SunInsure, a state-owned not-for-profit monopoly insurer.

The premiums charged by SunInsure vary depending on the insurer's assessment of the riskiness of the industry in which the employer operates. However, all employers in the same industry pay the same premium as a percentage of workers' wages.

SunInsure sets premiums to cover only its expected payments in the following year (referred to as a "pay as you go" or PAYG basis). The PAYG premiums also include an adjustment to allow for any under or over collection of premium in the previous year.

Injured employees may be entitled to compensation payments many years after an accident has occurred. SunInsure does not hold assets to cover the future cost of such claims, but will instead collect premiums each year from its current customer base to cover any emerging required payments.

A number of private insurers operate in Sunland, and provide all insurances other than employers' liability. The regulations that apply to private insurers are different to those that apply to SunInsure.

Insurance regulations require private insurers to hold assets to cover all the future costs for claims that have occurred, even if payments are not expected to be made for many years. Premiums estimated to cover all future claim costs are referred to as being on a "premium funded" basis. There are also capital requirements for private insurers.

The Minister for Work has issued the following press release:

*"The good people of Sunland have had enough of SunInsure. I believe that SunInsure has become inefficient because it has no competition, and so employers are paying higher premiums than are necessary.*

*I am proposing that private insurance companies be allowed to enter the employers' liability insurance market. Employers will be able to choose whether to purchase insurance from a private insurer or from SunInsure, which will continue to operate as it does now.*

*Private insurers will be free to decide what premiums to charge. Private insurers can vary the premium charged to each employer based on an individual risk assessment.*

*Since private insurers set premiums on a funded basis, the new arrangements will provide a high level of security to employers and to injured employees.*

*I believe that this scheme will reduce employers' liability costs for the businesses of SunLand."*

(i) State the costs that will need to be covered by employers' liability premiums charged by:

- (a) SunInsure (PAYG basis)
- (b) private insurers (premium funded basis)

[4]

The Minister said "*I believe that this scheme will reduce employers' liability costs for the businesses of SunLand*".

(ii) Discuss whether the Minister's statement is likely to be correct. [10]

The SunLand Employers' Association (SEA) has provided a response to the Minister's press release. SEA is interested in the proposal, but believes that many practical issues would have to be considered in assessing whether the plan to introduce private competition will work in practice.

(iii) Describe the practical issues that will need to be considered to assess whether the plan will work in practice. Your answer should include reasons why the issues are important. [20]

[Total 34]

**2** Manufast is a large industrial manufacturing business based in the UK. It has expanded rapidly over the past 15 years, tripling its output through improvements and innovation in the key processes, whilst also broadening its product range. During this time staffing levels have increased only marginally so the majority of the expansion is due to processes and products.

An actuary has been engaged by the company to review its insurance requirements.. Although processes and products have been continually changing the company has maintained a very low claims record and is questioning whether it may be paying too much for its insurance.

The company currently purchases the following covers:

- fleet insurance for its vehicles
- employers' liability
- commercial fire
- business interruption
- goods in transit, and
- public liability (excluding product liability)

All of these are priced using standard book rates with the exception of the fleet insurance which is experience rated.

- (i) Discuss how the actuary might assess the expected level of profit ceded on each of the lines of insurance purchased and what data might be used to support these assessments. [19]

The company's parent is considering setting up a captive insurance subsidiary in the UK to cover the insurance requirements for its entities.

- (ii) Define the term "captive". [2]
- (iii) Explain the advantages and disadvantages to the group of setting up this captive, taking into account the current changes in the regulatory climate. [10]
- (iv) Discuss the factors that should be taken into account when advising on the capital requirements for this new insurance subsidiary [10]
- (v) Discuss the administrative issues that should be taken into account in setting up a new insurance subsidiary. [3]

In light of the various changes in its business, Manufast is also considering adding product liability to its insurance coverage. It has asked the actuary to advise on this as part of the considerations of setting up the captive.

- (vi) Describe the general features of product liability cover [7]
- (vii) Discuss product liability pricing issues [11]
- (viii) List issues that may be encountered with product liability claims. [4]
- [Total 66]

**END OF PAPER**