INSTITUTE OF ACTUARIES OF AUSTRALIA

LIFE INSURANCE **2003 EXAMINATIONS**
PAPER ONE

Answer all 6 questions.

QUESTION 1 **(15 marks)**

You are the valuation actuary of an Australian life insurance company. The Board of Directors of this company has just undergone substantial reconstruction with four new directors being appointed. Three of these new directors already have a financial services background. However, the remaining new director only has extensive experience of the mining and manufacturing industries. After his first Board education session he has asked a number of questions which the Appointed Actuary has passed onto you to prepare answers.

(a) What is the basic concept of a liability? (2 marks)

(b) I understand that you have to calculate more than one type of liability. What types of liabilities do you have to calculate and state their regulatory or statutory purpose. (4 marks)

(c) I have heard that the calculation of the policy liability takes a considerable amount of time and resources. Explain why this is the case by briefly describing the steps involved to calculate the policy liability. Describing the calculations themselves in detail is not required. (9 marks)

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QUESTION 2 **(20 marks)**

You are the Appointed Actuary of a small Australian life insurance company, which is a subsidiary of a large funds management business. To date, the life insurer has restricted its product range to investment linked business.

The downturn in equity markets has resulted in profits tumbling and a new CEO of the funds management business being appointed. The new CEO has urged staff to think laterally to generate new ideas to grow the business.

The recently appointed Strategic Planning Manager has observed that income protection is a rapidly growing market, and he is confident that the existing relationships with financial planners will generate enough volume of sales to achieve critical mass within a short timeframe. He has approached you for feedback on his proposal to enter this market, and input into his Board briefing paper.

(a) Describe the product features of an income protection product. (5 marks)

(b) Describe the most significant risks that may impact the product profitability of an income protection product, and explain why each is a risk. (5 marks)

(c) List and briefly describe the practical steps required to implement the proposed income protection product. (10 marks)

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QUESTION 3 **(15 marks)**

You are the pricing actuary for a medium sized life office that has decided to enter into the group life market for death (GL) and total and permanent disability (GTPD).

When pricing large schemes, it is common to take into account the scheme's prior claims experience. As part of the pricing basis it is necessary to develop guidelines for the experience-rating factor (ERF) to be applied to the base premium rates when determining the premium to be charged for a scheme that is transferring its existing insurance arrangements from another insurer.

(a) Describe the information you will require regarding the scheme's past performance and how it is taken into account in determining the premium rates. (6 marks)

(b) Outline the checks and adjustments you would apply to the components of the past performance. (4 marks)

(c) What additional information would you require and what additional considerations are necessary if you were pricing group salary continuance (GSC) rather than GL and GTPD? (5 marks)

QUESTION 4 **(16 marks)**

You are a consulting actuary advising a medium sized life insurance company in Asia transacting non-participating traditional (whole of life and endowment assurance) business. The current profit reporting requirements are based on a solvency liability. There are two new directors on the Board. One has experience with another life insurance company where periodic Appraisal Values were calculated. The other has been involved in a life insurance company where the Margin on Services valuation method has been used to report realistic profit.

The Board wishes to introduce a more realistic method of assessing the financial performance of the company and is aware that these two different approaches (i.e. Appraisal Value and Margin on Services) exist. The Board has requested that you prepare for it a report covering the following:

(a) A brief description of the Appraisal Value and Margin on Services methods. (4 marks)

(b) A summary of the advantages and disadvantages of each method. (4 marks)

(c) A discussion of the four most significant potential causes of volatility in reported profit using each method. (8 marks)

QUESTION 5 (15 marks)

You are the Appointed Actuary of an old established proprietary Australian life insurance company, which has just acquired another Australian life insurance company. The Board of Directors has requested a report on the considerations that need to be made in determining whether or not the two companies should be merged.

Outline the investigations that would need to be made in order to recommend a basis for merging the companies. Explain how each investigation will help you make your recommendations.

QUESTION 6 (19 marks)

You are the Appointed Actuary of Good Life Limited, a small Australian life insurance company established in 1994. Good Life has one statutory fund, operates only in Australia and is dominated by participating traditional business. The company has an entrepreneurial Board, and has been very successful in expanding organically and through acquisition of other companies' closed books of traditional business. The business model, which is one of low costs and equity based investment policy, has historically returned healthy profits to the shareholders.

The acquired business generally has a history of stable bonus rates being declared – and has been supported by policyholder retained earnings built up over decades.

Since the last balance date, there has been a significant fall in the equity markets – the domestic share market is down 20% from its peak. Bond yields have hit all time lows.

The current asset mix of the fund is as follows:

Domestic equities	50%
Property	20%
Fixed interest	20%
Cash	10%

The Managing Director remains optimistic, and believes that the company should:

- take advantage of the fall in equity markets to promote the guaranteed nature of these products to financial advisers;
- invest the funds currently held in fixed interest and cash in equities – arguing that bond yields are so low that the fixed interest sector represents a very risky investment; and
- reduce surrender values in order to allow this to occur – to lock people in and stop them from surrendering their policies.

(a) Outline the responsibilities of the Appointed Actuary under the Life Insurance Act in relation to this issue. (2 marks)

(b) Outline the responsibilities of the Directors under the Life Insurance Act in relation to this issue. (2 marks)

(c) What investigations would you perform before providing advice on the Managing Director's proposal, and what other issues do you believe should be considered in making the decision? (12 marks)

(d) Would it be appropriate for you to use any discretions in calculating the solvency and capital adequacy requirements after the proposal is implemented? State your reasons. (3 marks)

END OF PAPER ONE

