2018 PART III EXAMINATIONS

Subject Title: C2A Life Insurance

Date: Thursday, 26 April 2018

Time: 10:00am – 10:15am
(Planning Time)

10:15am- 1:15pm
(Examination)

Time allowed: Three (3) hours and fifteen (15) minutes including planning time.

Instructions: Type your answers to the questions using Microsoft Word and ensure that there are no links to spreadsheets.

In your answers, include your candidate number in the header and footer on each page of the document.

You must submit your Excel answer file(s) and save your work regularly.

Number of Questions: Three (3)

Question	Marks
1	30
2	30
3	30
Total	**90**

Candidates are required to answer <u>ALL</u> questions. This paper has **SEVEN** (7) pages (including this page).

QUESTION 1 (30 Marks)

Note: The accompanying spreadsheet is titled "C2A_S1_2018_Q1_Graduated Rates 2004-2008."

Life Co is a large Australian life insurer that sells individual term insurance, offering Death, TPD and Trauma cover. The TPD and Trauma cover can be purchased as a rider to the death cover.

All business written by Life Co is fully underwritten.

Life Co has recently completed an experience analysis for 2017 using the standard tables "FSC 2004-2008 Lump Sum Investigation" as its expected basis.

The standard tables can be found in the accompanying spreadsheet titled *C2A_S1_2018_Q1_Graduated Rates 2004-2008*.[1]

- Rates are provided in separate tabs for "Death Only", "Death with Rider", "TPD" and "Trauma" benefit types. Data is located in cells **A1 to H110** in each of these tabs. The spreadsheet also includes a "Notes" tab which provides further information about the graduated rates.
- For TPD and Trauma cover, the graduated rates are derived from the combined experience of the rider and standalone versions of the product.
- Death with Rider data set includes any death benefit with a TPD, Trauma or both TPD and Trauma benefits attached.

a) Compare the "Death Only" and "Death with Rider" graduated rates from age 0 to age 100 for male non-smokers and explain your observations. **(3 Marks)**

b) Develop a simple projection model and calculate the present value of expected claims payments for a newly underwritten Death with TPD rider policy using the following assumptions: -

Model point:	Male, non-smoker aged 45 years old
Death Sum Insured:	1,000,000
TPD Rider Sum Insured:	400,000
Lapse rates:	Y1: 5%, Y2-Y3: 10%, Y4+: 15%
Risk free rate:	3%

You may assume that:

- The sum insured is not indexed
- Cashflows are annual rather than monthly
- Claims and lapses occur at the end of the year
- Lapse rates are not impacted by TPD and/or Death claims during the year.
- Cover ceases at the next policy anniversary following age 65 years

[1] Fabrizio, E., King, J., Lin, K., Man, B., Su, S. & Withers, J. (2012). Graduation of the 2004-2008 Lump Sum Investigation Data. Institute of Actuaries Australia & Financial Services Council.

State any other assumptions that you make.

Please create a new worksheet for your projection model, highlight the cell containing the present value of expected claims payments and copy the value into your answer Word document. **(17 Marks)**

c) Life Co's Marketing Actuary has suggested that Life Co could improve its offering by introducing a "double TPD" option. Under this option if a TPD claim is paid the death cover sum insured will not be reduced and future premiums on the proportion of the death cover up to the TPD sum insured will be waived for the duration of the policy. Premiums relating to the cost of death cover above the TPD sum insured will still be payable.

Outline what additional assumptions you would need to make in order to determine the expected cost of claims and expenses for this option. **(5 Marks)**

d) The Head of Sales and Distribution has suggested that in order to maximise take up of the double TPD option, Life Co should adopt a marginal pricing approach.

Provide an explanation of marginal pricing and, with reference to principles relating to premium adequacy, discuss this proposal. **(5 Marks)**

END OF QUESTION 1

QUESTION 2 (30 Marks)

Note: There is no accompanying spreadsheet for this question.

a) State four (4) statutory requirements that an Australian Registered Life Insurance Company must satisfy in respect of the Appointed Actuary role. **(4 Marks)**

b) Recent years have been characterised by mergers and acquisition activity within the Australian life insurance industry.

Discuss factors that may have influenced why a financial institution would seek to sell its life insurance business. **(7 marks)**

c) Global Insurance Entity Holdings has announced that it is selling its Australian direct to market life insurance entity, Direct Insurer, a registered Australian life insurance entity. A request for tender has been issued to the market.

Direct Insurer commenced operations in the Australian market 3 years ago and sells yearly renewable term products (YRT). Its products are sold on-line only with no adviser, telemarketing or call center involvement.

Key features of these products include:
- Entry ages: 30 - 65 years
- Maximum age: 70 years
- Sum insured: 50,000 (minimum) to 500,000 (maximum)
- Stepped and level premiums
- Short form underwriting covering smoker status, occupation, pre-existing conditions, recent medical investigations and family history

You are an Actuary at New Life, an established life insurance group which is domiciled in Asia and has life insurance operations in several Asian countries. New Life does not currently operate in the Australian market and does not have experience with direct to market insurance.

You are part of the team evaluating whether New Life should enter a bid to purchase Direct Insurer, including all its direct to market life insurance business.

(i) Discuss three (3) operational risks that New Life might face if it purchased Direct Insurer's business and explain how these risks could be mitigated / managed. **(6 marks)**

(ii) Discuss two (2) lapse risks that New Life might face if it purchased Direct Insurer's business and explain how these risks could be managed. **(4 marks)**

(iii) As part of its tender documentation, Direct Insurer has provided its best estimate assumptions.

Discuss reasons why New Life might have a different view than Direct Life of the best estimate assumptions for valuing Direct Life's YRT business for the following:

a) Expenses **(3 Marks)**
b) New business growth **(3 Marks)**
c) Claims **(3 Marks)**

END OF QUESTION 2

QUESTION 3 (30 Marks)

Note: There is no accompanying spreadsheet for this question.

a) The Life Insurance Framework (LIF) came into effect on 1 January 2018 and has introduced changes to the maximum amount and structure of commission payable to advisers in Australia. Changes in relation to upfront commission and commission responsibility periods are detailed below.

Maximum commission rate

From 1 January 2018 insurers are required to cap commission payments for new sales, and client initiated increases on policies sold after 31 December 2017. This cap will be implemented as follows:

- 1 January 2018 – 80% initial / 20% renewal commission
- 1 January 2019 – 70% initial / 20% renewal commission
- 1 January 2020 – 60% initial / 20% renewal commission

Existing commission arrangements on in-force business (and future automatic indexation increases) will continue to apply.

Commission responsibility period

Extension of the responsibility period for clawback of adviser initial commission if a policy lapses, from one year to two years. The clawback terms are:

- 100% of initial commission paid if a policy lapses in the first year,
- 60% of initial commission paid if a policy lapses in the second year.

Prior to 1 January 2018 LifeCo paid commission to financial advisers of 120% initial and 10% renewal. LifeCo's responsibility period was 1 year. 70% of the initial commission paid would be clawed back in respect of policies which lapsed during the responsibility period.

Discuss the implications of the changes under LIF by considering the impact on:

(i) Lapses **(3 Marks)**
(ii) Claims **(3 Marks)**
(iii) Pricing and profitability **(3 Marks)**
(iv) Adviser remuneration **(3 Marks)**
(v) Operational and any other considerations **(3 Marks)**

b) LifeCo has recently completed its annual experience analysis which shows that experience for 2017 for its retail income protection product has again been significantly adverse. Further investigation indicates that this continues to be driven by a high number of claims for mental illness for policies with a duration less than 1 year in-force. As this has occurred in each of the last three years of investigations, the number and amount of claims involved has become statistically credible and management are looking for ways to address this adverse experience.

Discuss ways that LifeCo could address this with reference to:

(i)	Experience analysis	**(3 Marks)**
(ii)	Underwriting	**(3 Marks)**
(iii)	Product design	**(3 Marks)**
(iv)	Claims management	**(2 Marks)**
(v)	Pricing	**(2 Marks)**
(vi)	Any other considerations	**(2 Marks)**

END OF QUESTION 3

END OF EXAMINATION