

INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

24th May 2012

Subject ST2 — Life Insurance

Time allowed: Three hours (14.45* – 18.00 Hrs)

Total Marks: 100

INSTRUCTIONS TO THE CANDIDATES

1. *Please read the instructions on the front page of answer booklet and instructions to examinees sent along with hall ticket carefully and follow without exception*
2. ** You have 15 minutes at 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 answer sheet until instructed to do so by the supervisor*
4. *The answers are not expected to be any country or jurisdiction specific. However, if Examples/illustrations are required for any answer, the country or jurisdiction from which they are drawn should be mentioned.*
5. *Attempt all questions, beginning your answer to each question on a separate sheet.*
6. *Mark allocations are shown in brackets.*
7. *Please check if you have received complete Question Paper and no page is missing. If so, kindly get new set of Question Paper from the Invigilator.*

AT THE END OF THE EXAMINATION

Please return your answer book and this question paper to the supervisor separately.

- Q. 1)** The Chief Actuary of a life insurance company is carrying out an annual financial review. He observes that the surrender value scales have not been reviewed for a long time and has commissioned an evaluation of the existing scales.
- a)** Discuss the principles that you would consider in setting surrender values? (8)
The company has a portfolio of regular premium without profit endowment assurances that was closed to new business five years ago. The historical practice of setting surrender values was to use a blend of asset shares at early durations and a prospective value thereafter.
- b)** Discuss how you would determine a basis for setting surrender values for this contract for the remainder of the policy term. (6)
[14]
- Q. 2)** The newly appointed Finance Director of a ten year old life insurance company has been trying to analyze the reasons why profits have been lower in the most recent year compared to the previous year. As part of his analysis, he notes a line in the financial statements titled “Reinsurance ceded”. He immediately writes to you, the reinsurance manager, saying that reinsurance is an unnecessary expense that only generates profits for reinsurance companies at the cost of the life insurance company.
- a)** Define re-insurance. (2)
- b)** List the points you would use to explain to the finance director why the company would seek reinsurance. (3)
- c)** Explain how reinsurance could reduce new business strain. (5)
[10]
- Q. 3)** Explain the principles that are generally followed in setting supervisory reserves to demonstrate the solvency of a life insurance company. (10)
[10]
- Q. 4)** An insurance company has been selling fixed benefit immediate annuities for the past few years. It now intends to enter the business of index linked immediate annuities where the benefit amount will be linked to the value of a widely published inflation index.
- Describe the advantages and disadvantages of this product compared to the fixed benefit immediate annuities for the insurance company and the customers respectively. (8)
[8]
- Q. 5)** A life insurance company has been selling term assurances across various customer segments through its tied agents. The terms and conditions of the term assurance product allow the company to review the premiums charged to existing policies every five years, based on its experience. The managing director has asked the chief actuary to develop an approach for reviewing the premium rates so that an appropriate adjustment can be made to the current set of rates.
- a)** Describe an approach that may be used to review the premium rates for existing policyholders. (8)

- b) Detail the factors that should be considered before deciding to implement changes to the premium rates as part of this exercise (8)
- c) Describe how issues in policy data can be a source of risk of an insurance company and list the checks that can be carried out in order to minimize this risk (6)

[22]

Q. 6) The Chief Executive Officer of a life insurance company wants to sell regular premium term assurances through a new distribution channel. This channel is retail stores which the CEO knows from his previous experience to have been very successful in other insurance markets. As part of the strategy team you have been asked to assess the feasibility and financial viability of this project and present an information pack to the Board of Directors of the company.

- a) Detail the steps that you will follow to produce a profit & loss account projection for this project so as to assess its financial viability and outline the key financial metrics from this projection that you will include in the information pack (13)
- b) Discuss the key risks that you would highlight to the Board with regards to launching the proposed distribution channel? (8)
- c) List the other considerations that you need to assess and keep the Board informed of before they take a decision on this project. (5)

[26]

Q. 7) A life insurance company has recently acquired a closed book business of without profits endowment assurance from another company. The assets backing this business are predominately fixed income in nature but also include a proportion of equities.

- a) Outline the factors you would consider in assessing the appropriateness of the current investment strategy for this business (7)
- b) State the measures you would put in place to monitor the extent of matching between assets and liabilities? (3)

[10]
