INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

22nd November 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) A life insurance company sells endowment assurance and whole life assurance contracts. The current economic environment of the country in which it operates is not very favorable. The company expects that the economic conditions will impact the surrender rates on its contracts. Thus, it proactively wishes to advertise the alterations possible in the contract to ensure the policyholders continue with their policies.

[i] List four examples of alterations that the life insurance company can offer. (2)

[ii] What are the general principles for setting the terms for alterations? (3)

[iii] Describe any two different methods for calculating the alteration terms and discuss their suitability in meeting the principles of alternation (8) **[13]**

Q.2) A life insurance company proposes to design a single premium without-profits endowment product and distribute it through the tied agency channel. The company is currently selling regular premium without-profits endowment products through a bank that has a distribution tie up with this insurance company only.

[i] Discuss the factors the company should consider when designing this product. You do not need to discuss in detail how the product is priced. (14)

[ii] Describe the risks that selling this product through the tied agency channel might bring for the company as compared to selling the regular premium version of the same product through the bank. (6)

The Chief Actuary is concerned that the product is open to miss-selling as the company had no experience of selling single premium products. His concern gets accentuated by the fact that the distribution mode is also new to the company

[iii] Discuss the possible measures the company can put in place to prevent miss-selling of this new product. (5) **[25]**

Q.3) A life insurance company has been selling regular premium term assurance products in the market for many years. It now wants to introduce a guaranteed insurability option (GIO) in this product whereby the insured has the option to increase the sum assured without providing any evidence of health. In particular, this option can be exercised any number of times throughout the duration of the contract although the amount of increase is limited to 50% of the sum assured at that point in time.

[i] Discuss the risks involved in offering such an option to policyholders and outline the possible conditions that can be added to the terms of the option to mitigate the mortality risk associated with the option. (10)

[ii] Describe two methods of pricing mortality options and discuss the advantages and disadvantages of the methods to the insurance company (12) **[22]**

Q.4) An life insurance company plans to start operations in an emerging economy. The company is planning to launch a conventional with-profits product. The pricing actuary is considering whether to apply a revalorization method or a contribution method for distributing surpluses.

[i] Describe the two methodologies and discuss the factors the pricing actuary should consider in choosing a particular methodology (12)

[ii] Describe how the pricing actuary would determine the risk discount rate to be used in pricing this product (5) **[17]**

Q.5) A multi-national life insurance company uses the same actuarial software to carry out its embedded value calculation in all the countries in which it operates. Recently the group has purchased new actuarial software and the migration to the new software is optional for the companies in individual countries. The chief actuary of one of the countries is still considering migrating to the new software.

Discuss the factors she should consider when making the decision. **[8]**

Q.6) The regulatory environment in a country called Actuaria does not permit an open architecture for banks selling life insurance policies. This means that a bank is only allowed to sell insurance policies written by only one life insurance company. The banks are free to choose the insurance company they wish to work with but once opted, they have to continue to sell for that company for a minimum period of two years. However, life insurance companies can have a tie up with more than one bank.

The regulators in Actuaria are proposing to revise these guidelines and provide the flexibility to the banks to sell policies of up to four different life insurance companies at any point of time. The proposal also abolishes the minimum contractual period of two years.

Discuss the impact of the proposed changes to regulations and the possible actions a life insurance company that has been predominantly selling unit-linked products through banks might take. **[15]**