

INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

29th October 2007

Subject SA2 – Life Insurance

Time allowed: Three Hours (09:45* – 13.00)

INSTRUCTIONS TO THE CANDIDATE

- 1. Do not write your name anywhere on the answer scripts. You have to write only your Candidate Number on every answer script.*
- 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 have then three hours to complete the paper.*
- 3. Mark allocations are shown in brackets.*
- 4. You must not start writing your answers in the answer papers until instructed to do so by the Supervisor.*
- 5. Attempt all questions, beginning your answer to each question on a separate sheet.*
- 6. Fasten your answer sheets together in the numerical order of the questions.*
- 7. The answers are expected to be India Specific application for the syllabus and corresponding core reading. However, substantially the core reading material is still taken from material supplied by Actuarial Education Company which are meant for UK Fellowship examination. The core reading also contains some material which is India Specific, mostly the IRDA regulation. In view of this, it should be noted that focal point of answers is expected to be India Specific application. However if application specific to any other country is quoted in the answer the same should answer the question with reference to Indian environment.*
- 8. In addition to this paper you should have available Actuarial Tables and your own calculator.*

Professional Conduct:

“It is brought to your notice that in accordance with provisions contained in the Professional Conduct Standards, if any candidate is found copying or involved in any other form of malpractice, during or in connection with the examination, disciplinary action will be taken against the candidate which may include expulsion or suspension from the membership of IAI.”

Candidates are advised that a reasonable standard of handwriting legibility is expected by the examiners and that candidates may be penalized if undue effort is required by the examiners to interpret scripts.

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| <p style="text-align: center;">AT THE END OF THE EXAMINATION <i>Hand in BOTH your answer script and this question paper to the supervisor.</i></p> |
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Q.1 An Indian life insurance company is a wholly owned subsidiary of a large industrial conglomerate and sells mainly reversionary bonus endowment and money back policies through a large agency force operating from branches located in towns and cities nationwide. The directors of the company have noticed that competitors are increasingly successful in expanding their distribution through bancassurance. The directors have identified two possible strategies for the company to enter bancassurance:

- Seek a suitable bank to invest as a shareholder in the insurance company under an exclusive distribution agreement.
 - Tie up with one or more banks as distributors through corporate agency agreements.
- a) Discuss why the financial implications of a new distribution channel might be different to those of the agency force. Describe how you would investigate the financial implications of entering a major new distribution channel. (You should discuss the models you would need to construct and the assumptions you would need to make.) (15)
- b) Investigation of the financial implications has identified substantial capital requirements for both strategies.
- Discuss the reasons for which capital might be required, and the sources for such capital. (6)
 - In the case of the company attracting a bank to invest as a shareholder, discuss how the price at which the bank will acquire shares can be determined. (6)
- c) Discuss and compare the risks involved in the two strategies that the company has identified for entering bancassurance. (6)
- d) The company is considering two distribution channels for sales through a possible bank shareholder.
- A direct sales force managed and employed by the insurance company. The members of the sales force are located in the bank branches and sell to bank customers referred to them by bank staff, and also to walk in bank customers.
 - The bank shareholder operates as a tied agency under which bank staff sell insurance products directly to the bank customers, supported by sales and product training provided by the insurance company.
- Compare these channels and the implications each would have for
- the sales process
 - underwriting
 - policy servicing
 - sales costs and commission. (10)
- e) Discuss why the company's existing reversionary bonus products may not be suitable for bancassurance and the features that might make possible new products more appropriate for this channel. (7)

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Q.2 Since its inception five years ago an Indian life insurance company has marketed unit linked products through its own agency force and a number of corporate agency tie ups. The marketing department feels that the company should broaden its product range and has made proposals for new health and pensions products.

- The health product is to be a level premium, 15 year term risk protection plan. The product will pay specified cash payments in the event of:
 - diagnosis of one of 10 critical illnesses
 - undergoing any of a long list of 50 major surgical procedures (these are grouped into four levels of severity with corresponding benefit amounts)
 - level term insurance with double accident benefits.
- The pension product is a deferred annuity unit linked product available through regular and single premiums. Life cover is an option, but not required. The commission rates are high, especially for regular premiums. On the deferred date, the accumulated investment amount must be applied to purchase an immediate annuity. The company guarantees a minimum annuity rate, but the annuity is untied and the policyholder has an option to purchase an annuity at market rates from any insurance company.

The directors of the company have asked the company's actuary to report on several aspects of the proposed new products.

- a) Discuss briefly the principal risks involved in selling the health product and how these can be managed by the life office. (11)
- b) Describe how the statutory reserves for the health product are to be determined. (5)
- c) Discuss what type of reinsurance you would be appropriate for the health product, having regard to the Reinsurance regulations. (6)
- d) Describe three ways that can be used to recoup the initial expenses under the regular premium unit linked pension product and discuss the implications for the office of each method. (12)
- e) State how PRE and treating policy holders fairly applies to the unit linked pension product.. (5)
- f) Discuss why the company may wish to analyse the change in embedded value, illustrating your answer with reference to the health and pension products. (5)
- g) The company's valuation actuary has observed that the take up rate for the guaranteed annuity option under the pension product will depend on the prevailing conditions at the time of take up, and on the terms of the annuity payments.

Discuss the implications of including the take up rate as an assumption in calculating embedded values. (6)

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Total marks [100]
