

INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

18th May 2009

Subject SA1 — Health and Care Insurance

Time allowed: Three hours (9.45* - 13.00 Hours)

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 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.*
5. *Attempt all questions, beginning your answer to each question on a separate sheet.*
6. *Mark allocations are shown in brackets.*

AT THE END OF THE EXAMINATION

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

Q 1) A country has a no health insurance market nor any state provision of health care. Currently, all health expenditure is met from out-of-pocket expenses. The Government is considering the licensing of privately owned health insurance companies, which will be permitted to transact all sorts of health insurance, under a system of regulation yet to be defined.

You are the Chief Actuarial Advisor to the Government. You have been asked to report on requirements of the regulatory system, both from a prudential perspective and from a conduct of business perspective, and to comment briefly on how those requirements may be met.

i) Discuss briefly the points you would make in your report. (13)

ii) The state lacks any data regarding the usage of health care. In order to regulate the industry, it recognises that it must acquire relevant data. You are therefore asked to specify the data you will require the health insurers to supply to the state once they are operating. (14)
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Q 2) You are the Appointed Actuary of a small Indian proprietary insurance company that transacts life insurance business. It has decided to enter the health insurance market. It is now considering offering a conventional regular premium whole of life product that will reimburse policyholders for hospitalisation expenses, and under which premiums will be payable up to age 58.

i) Discuss the risks to the company of such a product and how they might be mitigated. (33)

ii) How might the risks mentioned in i) differ if the product were unit linked? What other risks, if any, may arise? (5)
[38]

Q 3) Companies A and B operate in a market where life insurance companies may raise capital through borrowing on the financial markets.

Company A is a medium-sized life and health insurance company. It markets unit linked life insurance business and conventional health insurance business. The health insurance business consists of critical illness policies and hospital cash policies. Both have:

- fixed benefit structures, whereby the sum assured is a cash lump sum; and
- regular premiums that are periodically reviewable.

The Company has made a strategic decision to withdraw from the health insurance market and is looking to sell its existing book of health insurance business.

You are a consulting actuary, retained by Company B. You have been asked to estimate the price of the portfolio of A's business that is for sale. You have been given:

- 3 years' statutory returns;
 - 3 years' achieved profits basis analyses, as presented to Company A's Board by its Appointed Actuary; and
 - the analyses of experience used by Company A's Appointed Actuary.
- i) Describe the principal characteristics of the achieved profits method. (6)
- ii) Describe the principal differences between statutory returns and achieved profits. (5)
- iii) Discuss the principal assumptions underlying the Achieved Profits figures. (5)
- iv) Discuss any limitations that would apply to your estimate of the portfolio's value. (6)

The Finance Director of Company B has suggested the portfolio should be purchased by cash so long as the purchase price is less than the value put on the portfolio by the achieved profits method. He has further suggested that Company B borrow up to half of this value, raising senior debt in order to fund the purchase. He says that that so long as the debt is raised at a rate of interest less than the risk discount rate used in the achieved profits calculations, Company B is bound to increase its return on equity.

- v) Comment on these suggestions. (9)
- vi) Discuss briefly some alternative means of raising capital to finance the transaction. (4)

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