INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

3rd November 2008

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) Twilight health insurance company (THIC) is a health and long term insurance company operating in south and eastern India having its head office in Bangalore since 2005. It sells only group health and long term products to big corporate offices. The product is a single premium product with a fixed term of 5 years. The product is designed such that whenever claim arises, the corporate settles the claim as per the claim manual provided by the THIC and the THIC reimburses the money at the end of the financial year. You are the appointed actuary of this company. The operating year of the company is April to March. You have conducted the actuarial valuation of the portfolio as on March 31, 2007. Total assets as on that date Rs. 265 crore. By using the standard morbidity table, as approved by the Regulator, the liability for the next 5 years are as follows:

Year	March 31, 2007	March 31, 2008	March 31, 2009	March 31, 2010	March 31, 2011
Amount (Rs. Crore)	23	26	33	35	32

You have assumed 5 per cent as the valuation rate of interest. The following are the expenses assumed in the valuation. The expenses are distributed over the entire year.

Year	2007-08	2008-2009	2009-10	2010-11
Amount (Rs. Crore)	1.57	2.65	2.85	3.2

a. Calculate the surplus available as on March 31, 2007. (5)

b. During 2007-08 the company earns a return of 12 per cent on her funds and the actual expenses amounted to 2.3 crore. Calculate the surplus at the end of the year for this block of business and hence derive the surplus arising. Clearly state your assumptions. (7)

c. Find the sources of surplus according to investment return, expenses and other items. (12)

d. While presenting the results to the Board, one of the directors suggested that the actuary must conduct stress tests for various risks and report the results to the Board. Explain briefly how you would conduct stress test in respect of liquidity risk and operation risk. (9)

e. Another director asked you to conduct resilience capital requirement. Explain briefly the steps you would follow in this context. (9)

f. Explain the concept “deferred acquisition cost” and how it affects the reported profits in the first year of the contract. Also explain the principles you would follow to maintain DAC assets in an inflationary environment. (9)

g. The professional body (i. e., the Institute of Actuaries) of your country has asked you to prepare the ‘guidance note” for the use of valuation actuaries with regard to post-retirement medical plans. Explain briefly what aspects / main issues you would pay attention. (9)

[60]

Q. 2) a). You are an actuary in a medium sized life insurer in India. Your company sells life insurance contracts through tied agents, brokers and bancassurance partners. Given the growing interest among life insurers to sell health insurance contracts, your board is keen to launch health insurance products. The appointed actuary has been asked to prepare a report on the issues that the company should consider while launching a health product. The board has specifically raised the issue of whether to have a separate vertical for health insurance products within the company or to integrate it within the current structure.

The appointed actuary is currently weighing the options available before the company and in case the company decides to launch health products would prefer starting off with simple health products before launching complex comprehensive health products. He has identified the following key areas which need to be considered for this purpose.

(i) Distribution
(ii) Product design and pricing
(iii) Underwriting and claims
(iv) Administration (in house or outsourced)
(v) Reinsurance

In each of the areas mentioned above, identify and explain the issues that need to be considered while preparing a report to the Board. (20)

b). Your company also offers a standalone critical illness product to individual customers. A recent internal sales study identifies that since launch the sales from this product has not met internal targets. In response to this, the marketing director proposes the following to improve sales

- Allow distribution through bank channel
- Allow it to compulsory and voluntary group schemes
- Aggressive sales as a easy issue over the counter product

i.) Considering each of the above proposals in isolation, explain the issues that need to be considered while extending the scope of sales of this product. (12)

ii.) While examining the issues raised by the marketing director mentioned above, the appointed actuary has also requested you to review the reinsurance arrangement for this product. The product is currently reinsured on a surplus basis with a high retention which has resulted in full retention of the risk written so far. List the reinsurance arrangement options available for such a product, suggest a recommended arrangement and explain how reinsurance can be used as a tool in improving the performance (sales and profit) of this product. (8)

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